



PITTSBURGH

*Expression of Interest for*

**WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION  
OFFICE OF ABANDONED MINE LANDS  
AND RECLAMATION**

**Pines Country Club (Ponds) Subs. Design**

**RFQ#: DEP14622**

RECEIVED

2009 MAY 12 A 10: 25

PURCHASING DIVISION  
STATE OF WV

**May 14, 2009**

*Submitted by:*

**URS**

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May 14, 2009

West Virginia Department of Administration  
Purchasing Division  
2019 Washington Street East  
P.O. Box 50130  
Charleston, West Virginia 25305-0130

**RE: Expression of Interest  
Pines Country Club (Ponds) Subs. Design**

To Whom It May Concern:

In response to your division's solicitation, URS Corporation (URS) is pleased to submit this Expression of Interest (EOI) that presents our qualifications for the above reference project. We understand that this project involves geotechnical, mine and civil engineering expertise under a relatively short completion schedule. As such, we have assembled an experienced project team of technical professionals from URS and our subconsultant, Skelly & Loy, Inc., to complete this assignment. We offer the following strengths to WVDEP for this project:

**Technical Expertise** – Our team is uniquely qualified to provide all engineering services necessary to complete this project. We have extensive experience characterizing a project area for geotechnical analyses as well as abandoned mine lands (AML) investigations and reclamation design plans in West Virginia and other states. The personnel we have identified for this project have the necessary engineering experience to meet the requirements of this assignment. This project will be led by staff in our Charleston (Scott Depot) and Pittsburgh, PA offices.

**Cost Effectiveness** – URS has offices with qualified staff in Scott Depot and Pittsburgh to minimize travel expenses for all field work. Also, URS has an exceptionally low overhead rate of 125% to keep engineering costs down.

**Responsiveness** – URS maintains an attitude of flexibility to ensure that we are responsive to the needs of the WVDEP. Our goal is to provide coordination and communication with all participants in this project in a proactive manner.

Through examples of relevant projects, this EOI demonstrates our capabilities and our overall approach. Our qualified personnel, coupled with our relevant work experience and subconsultant expertise, we will provide WVDEP with a cost-effective project for the Pines Country Club Subsidence Design.

We appreciate this opportunity to present our qualifications and look forward to serving you for this project. If you require any additional information, please do not hesitate to call me at (304) 757-6642 x103.

Sincerely,

**URS Corporation**

John J. Smelko  
Branch Manager, Charleston, WV

URS Corporation  
#4 Mission Way  
Suite 201  
Scott Depot, WV 25560  
Tel. 304.346.6707  
Fax 304.346.6708

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

PROJECT NAME Pines Country Club (Ponds) Subsidence Design Project		DATE (DAY, MONTH, YEAR) 7, 05, 09	FEIN 94-1716908
1. FIRM NAME URS Corporation		3. FORMER FIRM NAME Greiner, Inc., URS Greiner, Inc., URS Greiner Woodward Clyde	
4. HOME OFFICE TELEPHONE 304.757.6642	5. ESTABLISHED (YEAR) 1904	6. TYPE OWNERSHIP Individual <input checked="" type="checkbox"/> Corporation Partnership <input type="checkbox"/> Joint-Venture	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE

ADDRESS	TELEPHONE	PERSON IN CHARGE	NO. PERSONNEL
#4 Mission Way, Suite 201 Scott Depot, WV 25560	304. 346-6707 FAX 304.346.6708	John J. Smelko	14
Foster Plaza 4 501 Holiday Drive, Suite 300 Pittsburgh, PA 15220	412.503.4700 FAX 412.503.4701	Thomas G. Bice	192
3604 Collins Ferry Road Morgantown, WV 26505	304.225.5111 FAX 304.599.8904	Chet Parsons	217

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM  
8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS

<u>East 3, Region 1</u>	
Scott Depot, WV Branch Manager	John J. Smelko Vice President
Regional General Manager	Jeff Guzy, P.E. Vice President
Sub-Regional Manager	Thomas G. Bice, P.E. Vice President

Vice Presidents

David Beachler, Q.E.P.  
 Gregory H. Deaver, P.E.  
 C. Thomas deLormier, P.E.  
 C. Michael Dougherty, P.E.  
 Alexander Houseal, P.E.  
 John Lang, P.E.  
 Gary M. Luczak, P.E.  
 Oscar K. Mabry, P.E.  
 Renaldo Ng, P.E.  
 Michael D. Steer, P.E.  
 Steve Tull, R.P.A.  
 Robert Waitkus, P.E.  
 Jerry Joseph, P.E.

9. PERSONNEL BY DISCIPLINE => Numbers reflect participating URS offices. Numbers in parentheses () reflect personnel in entire company.

35 ADMINISTRATIVE (2,103)	13 ECOLOGISTS (113)	2 LANDSCAPE ARCHITECTS (97)	49 STRUCTURAL ENGINEER (766)
35 ARCHITECTS (741)	— ECONOMISTS (38)	18 MECHANICAL ENGINEERS (714)	20 SURVEYORS (241)
48 BIOLOGIST (316)	16 ELECTRICAL ENGINEERS (1,142)	2 MINING ENGINEERS (673)	19 TRAFFIC ENGINEERS (531)
50 CADD OPERATORS (1,396)	58 ENVIRONMENTALISTS (2,286)	— PHOTOGRAMMETRISTS	654 OTHER (36,979)
2 CHEMICAL ENGINEERS (473)	10 ESTIMATORS (225)	9 PLANNERS: URBAN/REGIONAL (267)	
75 CIVIL ENGINEERS (4,091)	24 GEOLOGISTS (934)	— SANITARY ENGINEERS (33)	
44 CONSTRUCTION INSPECTORS (1,467)	1 HISTORIANS (17)	2 SOILS ENGINEERS (216)	
1 DESIGNERS (131)	3 HYDROLOGISTS (185)	— SPECIFICATION WRITERS (32)	
— DRAFTSMEN			1,190 TOTAL PERSONNEL (56,407)

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 13  
 \*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

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

<p>NAME AND ADDRESS:                  Skelly and Loy, Inc.                  449 Eisenhower Boulevard, Suite 300                  Harrisburg, PA 17111                  Telephone: (717) 232-0593                  Fax: (717) 232-1799</p>	<p>SPECIALTY:                  Mine Engineering</p>	<p>WORKED WITH BEFORE                  ___X___ Yes                  ___ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE                  ___ Yes                  ___ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE                  ___ Yes                  ___ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE                  ___ Yes                  ___ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE                  ___ Yes                  ___ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE                  ___ Yes                  ___ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE                  ___ Yes                  ___ No</p>

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

X YES Description and Number of Projects: URS has broad and diverse experience in all aspects of mine closure projects ranging from assessment of physical public safety through opening closure assessments to complex environmental issues associated with small as well as large mine sites. Our work covers the full scope of work, investigation and field inventory, land ownership, engineering, design, and construction management. URS is a recognized leader in providing civil and geotechnical engineering, environmental, water resources, and waste/tailing management services to the mining industry.

NO

B. Is your firm experienced in Soil Analysis?

X YES Description and Number of Projects: Soil profile analysis and foundation investigation work has included all phases of soil work and interpretation of aerial photography; soil sampling; laboratory testing and analysis including C.B.R., consolidation, and shear tests; direction and supervision of rig borings; and interpretation of the soil analyses and tests with recommendations for design. Design problems have included foundations for structures, foundations for highways through areas of unstable materials, design of fill slopes, design of cut slopes in materials of all types, and pavement design. Designs have included spread footings and pile foundations for structures varying to depths of more than 200 feet; highway embankments through unstable materials constructed by partial or complete removal and backfill, and by consolidation through the use of surcharge and/or sand drains; and design of stable cut slopes.

NO

C. Is your firm experienced in hydrology and hydraulics?

X YES Description and Number of Projects: URS has provided hydraulic and hydrologic engineering service to a variety of federal, state, municipal and private clients, including Flood Control Studies, Flood Insurance Studies, Bridge Scour Evaluations and Water Supply Studies. Building on this recent and long-standing experience, the URS team will be able to provide the WVEEP with efficient and economical services, having been through the "learning curve process".

Local URS staff assigned to this project are experts in flood control engineering. As part of this work, URS routinely uses computer software applicable to hydrologic and hydraulic engineering, including HEC-1, HEC-2, HEC RAS, DAMBREAK, HEC IPH, ARCINFO as well as GIS and CADD

NO

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

X YES Description and Number of Projects: URS has used GIS technology in support of a variety of investigations including flood hazard analyses, land use planning and characterization, dam impact studies, water quality and biotopography analysis, natural hazard mitigation, and drinking water source evaluations. We have used ARC/INFO, MapInfo and Intergraph software that are run on both PC-based and Sun Work station hardware systems. We also have state-of-the-art color plotters for output of mapping products from GIS applications.

X NO URS does not have Aerial Photography Capabilities

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

X YES Description and Number of Projects: URS has performed/provided services from concept through construction for the development of multi-discipline engineering and architectural services including industrial and domestic wastewater, and stormwater evaluations, environmental studies, reports and permits. Services included planning, studies, wastewater and stormwater characterization, recommendations, programming, preparation of appropriation forms with justifications and cost estimates, geotechnical evaluations, soil investigations, topographic surveys, preparation of final designs and specifications, contract negotiations support, construction management, construction scheduling, analysis of contractor cost and progress, contractor submittal reviews, quality control, construction inspection and testing, CPM analysis and start-up assistance when required. Facilities include water intake and discharge structures, industrial and domestic wastewater treatment systems, major oil and water piping and pumping installations, cross-country oil and water pipelines, sophisticated security, control and communications systems, environmental and fire protection facilities, primary and secondary electrical power distribution systems and a multitude of control, office, operations, guard, and storage buildings as well as roads, parking, and landscaping. Construction management and construction inspection has been performed on contracts ranging in size from \$500,000 to \$35,000,000 and totaling more than \$750,000,000.

NO

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

X YES Description and Number of Projects: URS has staff expertise in AMD water quality evaluation and passive treatment design. URS staff has evaluated AMD discharge chemistry and flows to determine options available to eliminate the associated problems. Our staff has designed treatment systems utilizing passive techniques not only for AMD problems (i.e., anoxic limestone drains, vertical flow wetlands, open limestone channels, aerobic/anaerobic wetlands, settling basins, and sulfate reducing bioreactors [SRBs]), but also for landfill leachate, sanitary system upgrades, storm water attenuation, nitrate removal (from munitions plant discharges), and for other wastewater streams.

NO



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

NAME & TITLE (Last, First, Middle Int.)		YEARS OF EXPERIENCE	
Joseph Robert Kula, PE		YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 30
<p><b>Brief Explanation of Responsibilities</b>                      Mr. Kula serves as Director of Dams and Reservoirs for the URS Eastern Division. During his 28-year career, he has provided engineering services for approximately 100 dams and levees, primarily in the eastern US and Puerto Rico. Assignments include all facets of dam and reservoir engineering for both new and existing embankment and concrete dams, including feasibility studies, environmental assessments, safe yield analysis, sediment studies, hydrologic/hydraulic studies and spillway design, dam breach/inundation studies, safety inspections and rehabilitation, geotechnical analyses, preparation of plans and specifications, construction quality control, emergency action plans, O&amp;M plans, and decommissioning. Mr. Kula is very active on dam safety initiatives, serves on the Executive Committee for the Council of Safe Dams and the ASCE Committee on Embankments. Dams, and Slopes, and is a member of ASDSO and USSD.</p> <p>EDUCATION (Degree, Year, Specialization)                      MS / 1979 / Civil Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS			
REGISTRATION (Type, Year, State) Professional Engineer / MD, NC, VA, WV			

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

NAME & TITLE (Last, First, Middle Int.)		YEARS OF EXPERIENCE	
Robert Pinciotti, PE		YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 25
<p><b>Brief Explanation of Responsibilities</b>                      During his career of over 25 years, Mr. Pinciotti has been responsible for preparing and managing geotechnical investigations of numerous industrial, commercial, and institutional projects throughout the Mid-Atlantic region. The investigations have included soil borings, rock coring, CPTU testing, in-situ vane shear testing, and geophysical testing in a wide variety of geologic settings. Mr. Pinciotti has also provided geotechnical services related to design phase activities, construction phase activities, and forensic evaluations for building as well as slope and dam structures. Sites have ranged from those with deep soil deposits (coastal plain) to those with shallow bedrock.</p> <p>EDUCATION (Degree, Year, Specialization)                      MS / 1988 / Civil &amp; Geotechnical Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS			
REGISTRATION (Type, Year, State) Professional Engineer / PA, MD, VA, NJ, DC			

<p>13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)</p>			
<p>NAME &amp; TITLE (Last, First, Middle Int.) Kutschke, Walter G., PE</p>	<p>YEARS OF AML DESIGN EXPERIENCE: 0</p>	<p>YEARS OF EXPERIENCE YEARS OF AML RELATED DESIGN EXPERIENCE: 15</p>	<p>YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0</p>
<p>Brief Explanation of Responsibilities Mr. Kutschke has over 14-years experience in subsurface investigations for geotechnical site characterization as well as the development of geotechnical recommendations for major roadway, railway and civil infrastructure projects. He is knowledgeable in numerous aspects of geotechnical engineering including foundation, retaining wall, geosynthetic, soil/rock cut slopes, embankments, levees and dams, pavement design, ground improvement as well as expert witness services. Mr. Kutschke also has extensive experience in geotechnical construction inspection as well as developing, monitoring and interpreting geotechnical instrumentation programs. He has published and presented ten geotechnical engineering papers at national and international conferences over the last 5 years.</p>			
<p>EDUCATION (Degree, Year, Specialization) PhD / 2009 (anticipated) / Geotechnical Engineering MS / 1995 / Geotechnical Engineering BS / 1993 / Civil Engineering</p>			
<p>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</p> <ul style="list-style-type: none"> <li>American Society of Civil Engineers (ASCE) - Member of Earth Retaining Structures Committee, and Grouting Committee</li> <li>The Deep Foundation Institute (DFI) - Member of Micropile Committee, and Soil Nail / Tieback Committee</li> <li>Society of Military Engineers</li> </ul>			
<p>13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)</p>			
<p>NAME &amp; TITLE (Last, First, Middle Int.) Smelko, John J.</p>	<p>YEARS OF AML DESIGN EXPERIENCE: 0</p>	<p>YEARS OF EXPERIENCE YEARS OF AML RELATED DESIGN EXPERIENCE: 0</p>	<p>YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0</p>
<p>Brief Explanation of Responsibilities Mr. Smelko is currently serving a dual role for URS. He is Office Manager of the Charleston, WV office and also Project Manager and Environmental Staff Scientist specializing in decontamination and demolition projects. He has a very strong background in Construction Quality Assurance (CQA) work and associated Site Management, Environmental Field Sampling/Chemistry Work, Environmental Health and Safety, Technical Writing, and Organic/Inorganic Data Validation.</p>			
<p>EDUCATION (Degree, Year, Specialization) BS / 1989 / Applied Mathematics</p>			
<p>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</p> <p>REGISTRATION (Type, Year, State)</p>			

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	
Bayne, Amanda L.		YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 1
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0	

**Brief Explanation of Responsibilities**  
 Ms. Bayne has gained experience in geological logging and drafting during geotechnical and environmental investigations. She has gained diverse technical skills from projects involving ground water investigations and sampling, petroleum remedial investigations for industrial clients, and Phase I and II Environmental Site Assessments. Ms. Bayne is also wetland delineation and management trained. She has technical writing experience in preparing and reviewing environmental reports and records, field-based experience completing a wide range of environmental assessment and remediation activities, and experience in geologic characterization and interpretation.

**EDUCATION (Degree, Year, Specialization)**  
 BS / 2003 / Geology

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**  
 Pennsylvania Geologic Society

**REGISTRATION (Type, Year, State)**  
 40 Hour HAZWOPER Certification [OSHA 29 CFR 1910.120(e)]  
 38 Hour ACoE Wetland Delineation & Management Training  
 Radiological Training (NUREG-1556)  
 10 Hour Construction Safety & Health (OSHA #001284900)  
 8 Hour OSHA Supervisor Training (OSHA 29 CFR 1910.120(e)(4), certificate 68537)

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	
Wagner, Dale PG		YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 22
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:	

**Brief Explanation of Responsibilities**  
 Mr. Wagner has over 22 years of professional experience conducting various aspects of geological and environmental investigations and remediation programs. He has gained diverse technical skills from projects involving ground water investigations and geotechnical investigations for government, commercial, and industrial clients.

**EDUCATION (Degree, Year, Specialization)**  
 BS / 1985 / Geology

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**  
 REGISTRATION (Type, Year, State)  
 Professional Geologist / 1995 / 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.) Roush, Norman, PE, PS	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	

Brief Explanation of Responsibilities  
Mr. Roush is currently the Regional Director of Transportation Services for the Charleston, West Virginia office of URS. In this position he is responsible for the management of the Highway, Bridge, Traffic and Geotechnical Engineering Divisions of the Office. He has also served on numerous national and state transportation committees, task forces and panels.

EDUCATION (Degree, Year, Specialization)  
BS / 1959 / Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS  
WVSPE, NSPE, ASCE, TRB-Geometric Design Committee/NCHRP Panels

REGISTRATION (Type, Year, State)  
Professional Engineer / WV / OH  
Professional Surveyor / WV / OH

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.) Bosley, R. Bruce, PE	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	

Brief Explanation of Responsibilities  
Mr. Bosley has over 14 years of engineering experience primarily in West Virginia and has been responsible for the study, engineering design and preparation of contract plans and related documents for various commercial, industrial, and water/wastewater facilities. Having served as project manager and structural engineer on several structural projects, his management and engineering tasks include representing URS to the client in regard to all project management matters, structural steel design, reinforced concrete design, core boring administration, shop drawing review, and Quality Assurance/Quality Control (QA/QC) reviews. Some projects involved the design and study of mechanically stabilized earth (MSE), pile/lagging, segmental block and cast-in-place retaining walls. Provided Clean Water Act Section 404 and 401 permitting and assisted in various stream bank mitigation projects.

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

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS  
American Society of Civil Engineers

REGISTRATION (Type, Year, State)  
Professional Engineer / WV

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Kesecker, Romaine K., RLA, ASLA	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
<p>Brief Explanation of Responsibilities  Mr. Kesecker's responsibilities as a Senior Landscape Architect include project management, master and site planning, site-specific design, construction documentation, cost estimation, environmental mitigation and restoration, and other design and construction period services. He has successfully completed numerous projects that required planning, design, development, landscape strategies, neighborhood conservation, public presentations, visualization renderings, value analysis, and natural resource planning, and aesthetics. He has proven experience in construction document preparation, including hardscapes, roadway, structures and bridges, utility coordination, landscape design, ADA, specifications and cost estimation. He is involved in coordinating environmental permits and forest conservation and other requirements related to environmental impacts of a proposed design. He is experienced in management and oversight of technical activities for projects including quality, schedules, budgets, and client liaison; management of staff and maintenance of group utilization; and coordination with other disciplines and subconsultants.</p>			
EDUCATION (Degree, Year, Specialization) BS / 1978 / Landscape Architecture			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS REGISTRATION (Type, Year, State) Landscape Architect / 1989 / MD, 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.) Lowery, V. Marcus, PE, PLS	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 1
<p>Brief Explanation of Responsibilities  Mr. Lowery has over 14 years of experience in the Transportation/ Highway &amp; Civil/Site Engineering fields. Mr. Lowery worked for both the public and private sectors performing Project Management and Design Engineering. Most recently, while with a consultant, Mr. Lowery served as Project Manager/Senior Engineer for NCDOT, municipal, railroad, and private clients. Mr. Lowery was responsible for establishing and maintaining budgets and schedules, preparing and sealing final construction plans, engineer's estimates, project special provisions, and final survey plats. Mr. Lowery was also involved in client relations through scoping and negotiating for new projects.</p>			
EDUCATION (Degree, Year, Specialization) BS / 1993 / Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS REGISTRATION (Type, Year, State) Professional Land Surveyor / 1999-NC / 2007-PA Professional Engineer / 2002-NC / 2007-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.) Dan Angelo	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities          Mr. Angelo is a Senior Environmental Scientist with more than 14 years of experience. Mr. Angelo provides a broad array of environmental services including wetlands identification and delineation, aquatic biological surveys, benthic macroinvertebrate sampling, NEPA surveys, and environmental permitting. He has completed a variety of environmental studies for private and government clients in Pennsylvania, Ohio, New York, New Jersey, Virginia and West Virginia working under NEPA and FERC guidelines.</p> <p>EDUCATION (Degree, Year, Specialization)          BS / 1997 / Agricultural Sciences</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Thomas Smith, PE	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities          As a design engineer, Mr. Smith has been involved with a broad range of water resource and site development projects including dams and reservoirs, stream restoration, power plants and other commercial/industrial and residential development. He is experienced with various hydrologic/hydraulic computer models, including the HEC models of the Army Corps of Engineers and NRCS TR - methods and programs, Virginia Tech - Penn State Urban Hydrology Model (VT/PSUHM).</p> <p>EDUCATION (Degree, Year, Specialization)          BS / 1983 / Civil Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) Professional Engineer / PA	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Matt Dudley, PE, CFM	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities  Mr. Dudley possesses skills in the area of civil, environmental, and biological engineering. His past experience includes performing hydrologic/hydraulic modeling for dam projects in addition to GIS aided mapping and analysis. He has been involved in NPDES permitting and water quality monitoring. He has also performed various field work including soil testing, dam inspections, and high water mark flagging.</p> <p>EDUCATION (Degree, Year, Specialization)  BS / 2002 / Biological Systems Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS REGISTRATION (Type, Year, State) Professional Engineer / PA			
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Bryan Vogelsang, PE	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities  Mr. Vogelsang has 5 years of experience in civil engineering design. He has experience handling nearly all tasks associated with roadway design, with a focus on drainage design, erosion and sediment control plans, and hydrologic and hydraulic analysis. Mr. Vogelsang is experienced with several hydrologic and hydraulic modeling programs, including the HEC models developed by the Army Corps of Engineers, TR-55 developed by NRCS and WMS developed by BYU.</p> <p>EDUCATION (Degree, Year, Specialization)  BS / 2003 / Civil Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS REGISTRATION (Type, Year, State) Professional Engineer / PA			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Joel Shodi, PE	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	0
<p>Brief Explanation of Responsibilities</p> <p>Mr. Shodi has over 13 years of experience providing civil and environmental engineering services for a wide variety of projects funding both publicly and privately. Mr. Shodi has worked with public agencies such as the Pennsylvania Department of Transportation, the Pennsylvania Department of Environmental Protection, and the Pennsylvania Department of Conservation and Natural Resources on various transportation related projects and understands the process involved. Mr. Shodi has a reputation of being able to complete projects for various clients on time and within schedule.</p> <p>EDUCATION (Degree, Year, Specialization) MS / 2000 / Environmental Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS			
REGISTRATION (Type, Year, State) Professional Engineer / 2000 / 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 DOMESTIC WATERLINE DESIGN EXPERIENCE:
Jon Warnock, EIT	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	0
<p>Brief Explanation of Responsibilities</p> <p>Mr. Warnock has 3 years of experience in all aspects of Roadway design and Drainage Analysis. He has worked on roadway projects with several PennDOT districts and the Pennsylvania Turnpike Commission. Jonathan has experience handling nearly all tasks associated with roadway design, with a focus on erosion control and post construction stormwater management.</p> <p>EDUCATION (Degree, Year, Specialization) BS / 2005 / Civil Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS			
REGISTRATION (Type, Year, State) Engineer-in-Training			



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.) Tim King, PG	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities          Mr. Angelo is a Senior Environmental Scientist with more than 14 years of experience. Mr. Angelo provides a broad array of environmental services including wetlands identification and delineation, aquatic biological surveys, benthic macroinvertebrate sampling, NEPA surveys, and environmental permitting. He has completed a variety of environmental studies for private and government clients in Pennsylvania, Ohio, New York, New Jersey, Virginia and West Virginia working under NEPA and FERC guidelines.</p> <p>EDUCATION (Degree, Year, Specialization)          BS / 1997 / Agricultural Sciences</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Michael Greer	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities          As a design engineer, Mr. Smith has been involved with a broad range of water resource and site development projects including dams and reservoirs, stream restoration, power plants and other commercial/industrial and residential development. He is experienced with various hydrologic/hydraulic computer models, including the HEC models of the Army Corps of Engineers and NRCS TR - methods and programs, Virginia Tech - Penn State Urban Hydrology Model (VT/PSUHM).</p> <p>EDUCATION (Degree, Year, Specialization)          BS / 1983 / Civil Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) Professional Engineer / PA	

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Mathew Barner	0	0	0
<p>Brief Explanation of Responsibilities                      Mr. Angelo is a Senior Environmental Scientist with more than 14 years of experience. Mr. Angelo provides a broad array of environmental services including wetlands identification and delineation, aquatic biological surveys, benthic macroinvertebrate sampling, NEPA surveys, and environmental permitting. He has completed a variety of environmental studies for private and government clients in Pennsylvania, Ohio, New York, New Jersey, Virginia and West Virginia working under NEPA and FERC guidelines.                      EDUCATION (Degree, Year, Specialization)                      BS / 1997 / Agricultural Sciences</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Mark Fox	0	0	0
<p>Brief Explanation of Responsibilities                      Mr. Fox has worked on a broad range of GIS, Database and mapping services for URS. His experience includes; GPS field data collection, post processing of GPS data, GIS database design and administration as well as spatial analysis of GIS data including environmental impacts to wetlands, streams and forests and transportation based analysis for PennDOT, Allegheny County and local municipalities.                      EDUCATION (Degree, Year, Specialization)                      MS / 2008 / Geographic Information Systems</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Rob Hilliard	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	0
<p>Brief Explanation of Responsibilities          Mr. Hilliard's technical expertise is in NEPA documentation and Environmental Impact Statement (EIS) preparation; expert testimony; transportation planning; wetland delineation, mitigation, and permitting; river and watershed conservation planning; resource conservation planning; freshwater and coastal wetland ecology; threatened and endangered species studies; terrestrial, aquatic, and marine ecological assessment; recreational trail development; and heritage area planning.</p> <p>EDUCATION (Degree, Year, Specialization)          BS / 1990 / Biology</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Qingwei Fu, PhD, PE	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	0
<p>Brief Explanation of Responsibilities          As a design engineer, Mr. Smith has been involved with a broad range of water resource and site development projects including dams and reservoirs, stream restoration, power plants and other commercial/industrial and residential development. He is experienced with various hydrologic/hydraulic computer models, including the HEC models of the Army Corps of Engineers and NRCS TR - methods and programs, Virginia Tech - Penn State Urban Hydrology Model (VT/PSUHM).</p> <p>EDUCATION (Degree, Year, Specialization)          BS / 1983 / Civil Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) Professional Engineer / PA	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Eric Nilson, PE	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities</p> <p>Mr. Nilson has more than 30 years of engineering consulting experience focusing on industrial and municipal water and wastewater engineering, air quality, and solid waste management. Mr. Nilson has extensive experience in the entire range of engineering activities, encompassing feasibility studies, field surveys and characterizations, and bench/pilot scale treatability studies. Process design experience includes: development of process flow diagrams, with computerized heat and material balances, equipment selection and sizing, P&amp;IDs, instrumentation design and analysis and preparation of operation and maintenance manuals, in addition to trouble-shooting of existing treatment facilities.</p> <p>EDUCATION (Degree, Year, Specialization) MS / 1976 / Environmental Pollution Control BS / 1978 / Environmental Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS REGISTRATION (Type, Year, State) Professional Engineer / 1979 / PA, WI, NJ			
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.) Rob Oates, EIT	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities</p> <p>Mr. Oates is a project engineer with more than nine years of environmental experience. His expertise includes: permitting; reporting; water and wastewater treatment, spill prevention, control, and countermeasure (SFCC) plans and secondary containment designs; preparedness, prevention, and contingency (PPC) plans; workplan and final report preparation; Phase I, II, and III environmental site assessments (ESAs); site characterization and delineation; subsurface investigation and analysis; remediation activities; tasks related to closure sites; Pennsylvania Land Recycling and Remediation Standards Act (Act 2) submittals for background standards and Statewide health standards; surface/ground water and soil sampling; industrial hygiene monitoring; and computer database management.</p> <p>EDUCATION (Degree, Year, Specialization) MBA / 2003 / Business Administration BS / 1998 / Agricultural and Biological Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS REGISTRATION (Type, Year, State) Engineer-in-Training			

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Terry Schmidt, PE	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	0
<p>Brief Explanation of Responsibilities  A leading authority on mine reclamation practices including the treatment of acid mine drainage (AMD), Mr. Schmidt has served as Engineer-In-charge of many assessment and mitigation projects. Mr. Schmidt's responsibilities have included directing the development and implementation of comprehensive field investigations, managing the data evaluation process, determining Best Available Technologies (BAT), developing engineering design packages, obtaining necessary permits, supervising construction inspection activities, and overseeing long-term monitoring and system operation and maintenance requirements.</p> <p>As a result of his extensive experience, Mr. Schmidt has developed a unique understanding of the interrelationships between active and abandoned mine complexes, water quality, particularly pH and elevated metal concentrations, local geology and hydrogeology, and flow rates and their impact on the selection of the most appropriate abandoned mine reclamation practices. In addition to his project responsibilities, Mr. Schmidt is a well-published author on AMD issues. He has presented his technical papers at professional conferences held throughout the United States.</p> <p>EDUCATION (Degree, Year, Specialization)  MS / 1994 / Mining Engineering  BS / 1985 / Mining Engineering</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS			
REGISTRATION (Type, Year, State) Professional Engineer / PA, NC, TN, VA, MD, OH			
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	
<p>Brief Explanation of Responsibilities</p> <p>EDUCATION (Degree, Year, Specialization)</p> <p>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</p> <p>REGISTRATION (Type, Year, State)</p>			

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

Software: Microstation V8 with Inroads Software; Autocad 2008 with Land Desktop Software; ESRI GIS Software; SLOPE/W, SEEP/W and SIGMA/W developed by GEO-SLOPE International, Ltd., Alberta, Canada; Geocystem LD4 of Von Gunten Engineering Software of Fort Collins, CO; Microsoft Office Suite

Suvey Equipment: Leica TCRP 1203 Robotic Total Station, Leica System 1200 GPS Equipment

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
Scott Slab Bridge Harrison County, West Virginia	WVDOH, State Capitol Complex Charleston, WV 25305	Bridge rehabilitation	\$600,000	98%
Environmental Inspections	Equitable	Environmental Inspection Services	\$230,000	Ongoing
State-Wide On Call Agreement for Environmental Remediation	WVDOH, State Capitol Complex Charleston, WV 25305	Environmental Field Investigation and Remediation Services	\$750,000	Ongoing
TOTAL NUMBER OF PROJECTS:			TOTAL ESTIMATED CONSTRUCTION COSTS:	
3			\$1,580,000	

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

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
Wheeling & Lake Erie / Banksville Connector Feasibility Study S.R. 3065, Sect. A01 Allegheny County, Pennsylvania	Needs study, major investment study, Section 4(f) overview, transportation planning and tunnel traffic modeling, evaluations, Conceptual Operations Plan,	Ceryl Moon-Sirianni 45 Thorns Run Road Bridgeville, PA 15017	2005	\$592,588	Sub consultant



17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Winfield Bridge - Feasibility Study Putnam County	WVDOH, State Capitol Complex Charleston, WV 25305	\$125,000 (fee)	2006	N/A
Elkem Metals Company, Water Intake Structure Fayette County, WV	Elkem Metals Co. Alloy, WV Sam Cavalier, Staff Engineer	\$20,000 (fee)	2004	Yes
District 2-0 Open End, 5 year term	PENNDOT, District 2-0 1924-30 Daisy Street P.O. Box 342 Clearfield County, PA 16830 Mark Kucherer	\$1,000,000 (fee)	2004	Yes
Donald R. Kuhn Juvenile Center Boone County, WV	WVRJA, 1325 Virginia St. Charleston, WV 25302	\$12,000,000	2004	Yes
Kings Creek Bridge Ph 1 & 2 Hancock County, WV	WVDOH, State Capitol Complex Charleston, WV 25305	\$3,500,000	2004	Yes
Raleigh County Flood Study Raleigh County, WV	WVDOH, State Capitol Complex Charleston, WV 25305	\$70,000 (fee)	2004	No

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE)						
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH	
MP 140 - 148 Full Depth Reconstruction Pittsburgh, Pennsylvania	PA Turnpike Commission P.O. Box 67676 Harrisburg, PA 17106-7676	\$32,000,000	2007	No	McCormick Taylor & Assoc.	

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.

**Section 1** ..... **Introduction**  
 URS Corporation  
 Firm Qualifications  
 Project Team Commitment  
 Project Understanding  
 Alternative Design Considerations

**Section 2** ..... **Key Personnel**

**Section 3** ..... **Project Management**

**Section 4** ..... **Proposed Subcontractors**  
 Skelly & Loy, Inc.

**Section 5** ..... **Product Quality Control**

**Section 6** ..... **Project Cost Control**

**Section 7** ..... **Summary**

**SECTION 1 - INTRODUCTION**

*URS Corporation* - URS is a leading provider of planning, design, systems engineering and integration, technology development, program and construction management, and operations and maintenance services to federal, state and local government agencies in the U.S., Fortune 500 corporations worldwide and private clients. We have been ranked the #1 Engineering Design Firm in the world for eight consecutive years (Engineering News Record, April 2008). ENR also ranks URS as one of the largest dam engineering firms in the Country with revenues on dam and reservoir projects of more than \$60 million. Our professional staff includes engineers with expertise in the full spectrum of disciplines, as well as planners, scientists, environmental specialists, information management specialists, architects and construction managers. With a network of offices in key cities, we have the resources to achieve our clients' goals — whether for a large, multiphase project or a specialized assignment.

URS Corporation's oldest predecessor company was founded in 1904. URS was established in 1951 and incorporated in 1957 as Broadview Research, a research group active in the areas of physical and engineering sciences. In 1967, management developed a growth strategy focused on

building a multidisciplinary professional services firm. In 1968, Broadview Research acquired United Research Incorporated of Cambridge, Massachusetts. During this period, the name Broadview Research was changed to United Research Services, later shortened to URS.

Throughout the 1970s and 1980s, URS continued to expand through internal growth and strategic acquisitions that broadened its engineering, architectural, and environmental practices. These acquisitions included Madigan-Praeger, Coverdale and Colpitts, John A. Blume & Associates, Hill Dreman Chase and Dalton, Dalton and Newport.

Most recently, URS has expanded with the acquisition of Greiner Engineering in 1996, Woodward-Clyde Group in 1997, UK-based Thorburn Colquhoun in 1998, and Dames & Moore Group in 1999. URS acquired EG&G Technical Services in 2002, which provides outsourced management and technical support services to the U.S. government and The Washington Group in 2007.

Today, URS offers a broad range of planning, engineering and architectural design, program and construction management, system integration, and operations and maintenance services for transportation, hazardous waste, industrial processing and petrochemical, general building, water/wastewater, military facilities and equipment platforms, and security projects.

Headquartered in San Francisco, URS operates in 34 countries with over 50,000 employees. The Company provides services to federal, state and local governmental agencies, as well as private clients in the chemical, manufacturing, pharmaceutical, forest products, mining, oil and gas, and utilities industries. URS is publicly owned and listed on the New York and Pacific Stock Exchanges as URS.

**Firm Qualifications** - In a broad sense, this project involves two major disciplines, namely mine engineering and dam engineering. As such, URS has assembled experienced dam and mine engineering professionals to provide the necessary engineering services for the West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands & Reclamation (AML). Joining the URS Team is **Skelly & Loy, Inc.** (S&L), a highly qualified consulting engineering firm with nationally recognized expertise in mine engineering. S&L will provide the necessary mine engineering services while URS will provide the dam, geotechnical and general civil engineering services for the successful completion of this project.

URS prides itself on being an industry leader in the dam safety and engineering practice. We have received many awards for our contributions to dam rehabilitation and safety issues, some which are listed below:

- Guanella Dam, Colorado – 2005 APWA National Project of the Year Award
- Toker River Water Supply Project, Eritrea – 2002 ACEC Colorado Grand Conceptor Award
- East Side Reservoir, California – 2000 ASCE Outstanding Civil Engineering Award
- Los Vaqueras Dam, California – 1999 ASCE Outstanding Civil Engineering Award

URS QUICK FACTS	
• In Operation Since:	1904
• Federal TIN:	94-1716908
• Number of Employees:	50,000+
• FY2007 Revenue:	\$5.4 Billion
• NYSE Symbol:	URS
• Locations:	370 Offices in 34 Countries
• www.urscorp.com	

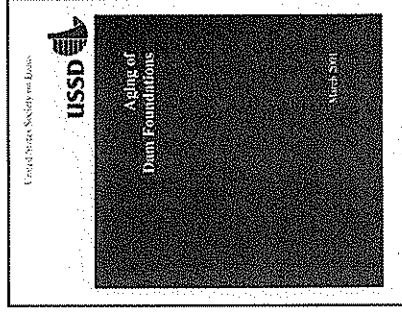
- Smith Lake Expansion, Virginia – 1998 ASDSO National Rehabilitation Project of the Year
- Swannanoa Lake Dam Rehabilitation, New Jersey – 1998 ASDSO Mid-Atlantic Region Award of Merit
- Littlerock Dam Rehabilitation, California – 1992 ASDSO Outstanding Project of the Year
- Stagecoach Dam, Colorado – 1990 Consulting Engineer’s Council of Colorado Project of the Year
- Gibraltar Dam, California – 1991 Consulting Engineer’s Council Outstanding Project Award

URS has earned and maintained a reputation as a national leader in specialized engineering and science applications, particularly in the area of dams, reservoirs, and hydraulic structures. The firm has achieved an outstanding reputation for its competence and expertise related to planning, design, construction, modification and rehabilitation, and environmental permitting of dams and water resources projects.

Since 1950, URS and our predecessor firms have been responsible for the investigation, analysis, design, and construction of more than 4,000 dam projects worldwide. These projects include roller compacted concrete (RCC), earth and rockfill dams, concrete arch dams and mass concrete dams, as well as hybrid dams of timber crib, steel facing, and concrete walls. The dams range from small diversion structures with heights of 5 feet to large dams with heights up to 750 feet. Since 1950, URS has had responsibility for more than 400 major dams greater than 100 feet in height. URS is a leader in dam engineering, as demonstrated by:

- Editing of conference proceedings: "Aging of Dam Foundations" for US Society of Dams (2002).
- Numerous publications on dam engineering and dam safety.
- Had members on board of US Society of Dams for the past eight years;
- Had members on the Technical Advisory Committee of the Association of State Dam Safety Officials (ASDSO) for the past decade;
- Provided training in dam safety issues (seepage, stability, inspection, etc) for ASDSO members under contract to ASDSO since 1994.
- URS was awarded the National Rehabilitation Project of the Year (from ASDSO) twice within the past seven years, for work on Smith Lake Dam and Littlerock Dam.
- Has a member on the National Dam Safety Review Board
- Has a member on the Executive Committee of the Council Safe Dams
- Serves on dam safety consultant review boards for the U.S. Bureau of Reclamation and U.S. Army Corps of Engineers

In a literal sense, we "wrote the book" on dam engineering and foundation treatment. Several of the firm’s principals authored Earth and Earth Rock Dams - a book widely used by practicing professionals and geotechnical educators. In addition, many of our team members have published



numerous technical articles on dam design and rehabilitation. Mr. Ken Weaver is a grouting specialist who has authored Dam Foundation Grouting, recently published by ASCE. In addition, since 1986 we have become the national leader in roller compacted concrete (RCC) dam projects with over 40 RCC projects throughout the world.

URS recognizes Dam and Reservoir Engineering as a key technology and maintains a national practice matrix of dam practitioners across the country. The purpose of the matrix is to provide consistency of service and to share knowledge, transfer technology, and provide the firm's best technical resources regardless of the project location. Through this process, we have successfully provided dam engineering services for clients throughout the country resulting in award winning, innovative and cost-effective projects.

Successful reservoir planning, dam building and dam rehabilitation is a combination of engineering, science, and experience. At URS, we believe that we advance the state-of-the-art in dam design and construction with each new project. The firm has led the way in the application of state-of-the-art construction techniques to dam rehabilitation, such as RCC, foundation anchors, geomembranes and asphaltic membranes, grouting, slurry trench, and soil mixing technology.

With fewer new dams being built in recent years, the majority of our dam's practice has involved the safety and rehabilitation of existing dams to meet current safety standards or the modification of existing dams to increase storage capacity. Relevant experience has included: dam safety inspections and evaluations, geotechnical investigations, hydrologic and hydraulic analyses to evaluate spillway capacity, dam break and inundation analyses to evaluate hazard potential and for the development of emergency action plans, rehabilitation designs, and emergency action plans. We are also actively assisting federal agencies, states and dam owners in developing or upgrading their dam safety programs.

The following table provides a summary of recent (i.e., 2007 to on-going) URS dam and reservoir projects along the East Coast with the types of services provided for each project.

Project Name	Point of Contact	Address	Hazard Classification*	Project Location	Year Complete	Dam Safety Inspection	Investigations	Alternatives Evaluation	Design	Consultation / Review	GIS Mapping	H&H Analysis	Inundation Mapping	Emergency Action Plan	O&M Documents	Emergency Services
DE Dam Inventory	Mr. David Twing 302-795-9155	DNREC, Division of Soil and Water Conservation 89 Kings Highway, Dover, DE 19901	NA	DE	Ongoing		•			•	•	•				
Edgemoor Reservoir	Mr. William Morris, PE 302-252-3003	Unified Water Delaware 2000 First State Blvd	H	DE	Ongoing	•	•									

Lake Needwood Dam	Mr. Andy Frank, PE 301-650-2886	Wilmington, DE 19804-6508	H	MD	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Lake Frank Dam	Mr. Andy Frank, PE 301-650-2886	M-NCPPC Park Development Division 9500 Brunett Avenue, Silver Spring, MD 20901	H	MD	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Water Supply Dam No. 1	Mr. Lee Greenwald 301-206-7504	M-NCPPC Park Development Division 9500 Brunett Avenue, Silver Spring, MD 20901	H	MD	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Water Supply Dam No. 2	Mr. Lee Greenwald 301-206-7504	Washington Suburban Sanitary Commission 14501 Sweitzer Land Laurel, MD 20707-5902	H	MD	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
I-70 / Monocacy Blvd Dam (new)	Mr. Barry Kiedrowski, PE 410.545.8769	Washington Suburban Sanitary Commission 14501 Sweitzer Land Laurel, MD 20707-5902	H	MD	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Conowingo Dam	Mr. Gerald Gomez, PE 315-724-4860	Maryland State Highway Administration Office of Highway Development 707 North Calvert Street, Mailstop C- 102 Baltimore, MD 21202	H	MD	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Muddy Run Dam	Mr. Gerald Gomez, PE 315-724-4860	Gomez & Sullivan Engineers, PC 288 Genesee St. Utica, NY 13502	H	PA	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Towamensing Trails Dam	Mr. Bill Doscher Mr. Pat Anderson 570-722-0302	Gomez & Sullivan Engineers, PC 288 Genesee St. Utica, NY 13502	H	PA	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Opossum Lake Dam	Mr. Jerry G. Woomer, PE 814-358-5153	Towamensing Trails Property Owners Association P.O. Box 100 Albrightsville, PA 18210	H	PA	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Horsham Dam	Confidential Client	PA Fish & Boat Commission Bureau of Engineering & Development 450 Robinson Lane Bellefonte, PA 16823	H	PA	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Rocky Pen Reservoir (new)	Mr. Keith Dayton 540-688-8643	Confidential Client	H	VA	Ongoing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●





Aside from our technical expertise, the URS Teams bring several outstanding features that characterize our professional qualifications and set us apart from others:

- **We are customer oriented.** URS has supported water resource clients since 1950. This longevity only occurs in companies that listen to their clients and then apply that knowledge to complete your program successfully and to your satisfaction.
- **We are proven creative performers.** Each proposed individual was evaluated and selected for this proposal because of their capabilities and abilities to contribute to AML's design needs.
- **We are experienced.** The team has access to highly qualified technical specialists and resources through a seamless organization. We have expertise and practical experience in the areas critical to the success of dam engineering.

The Team has the depth and breadth of capabilities to exceed requirements in all areas indicated in the solicitation. Our engineering design experience covers the following disciplines:

✓ Civil Engineering	✓ Geotechnical	✓ Mine Engineering	✓ Environmental Permitting
✓ Hydrology-Hydraulics	✓ Soils Engineering	✓ Mechanical & Electrical	✓ Construction Management
✓ Structural Engineering	✓ Materials Testing	✓ Landscape Architecture	✓ Geologic and Geophysical Studies
✓ Cost Estimating	✓ Storm Water Management	✓ Dam Removal	

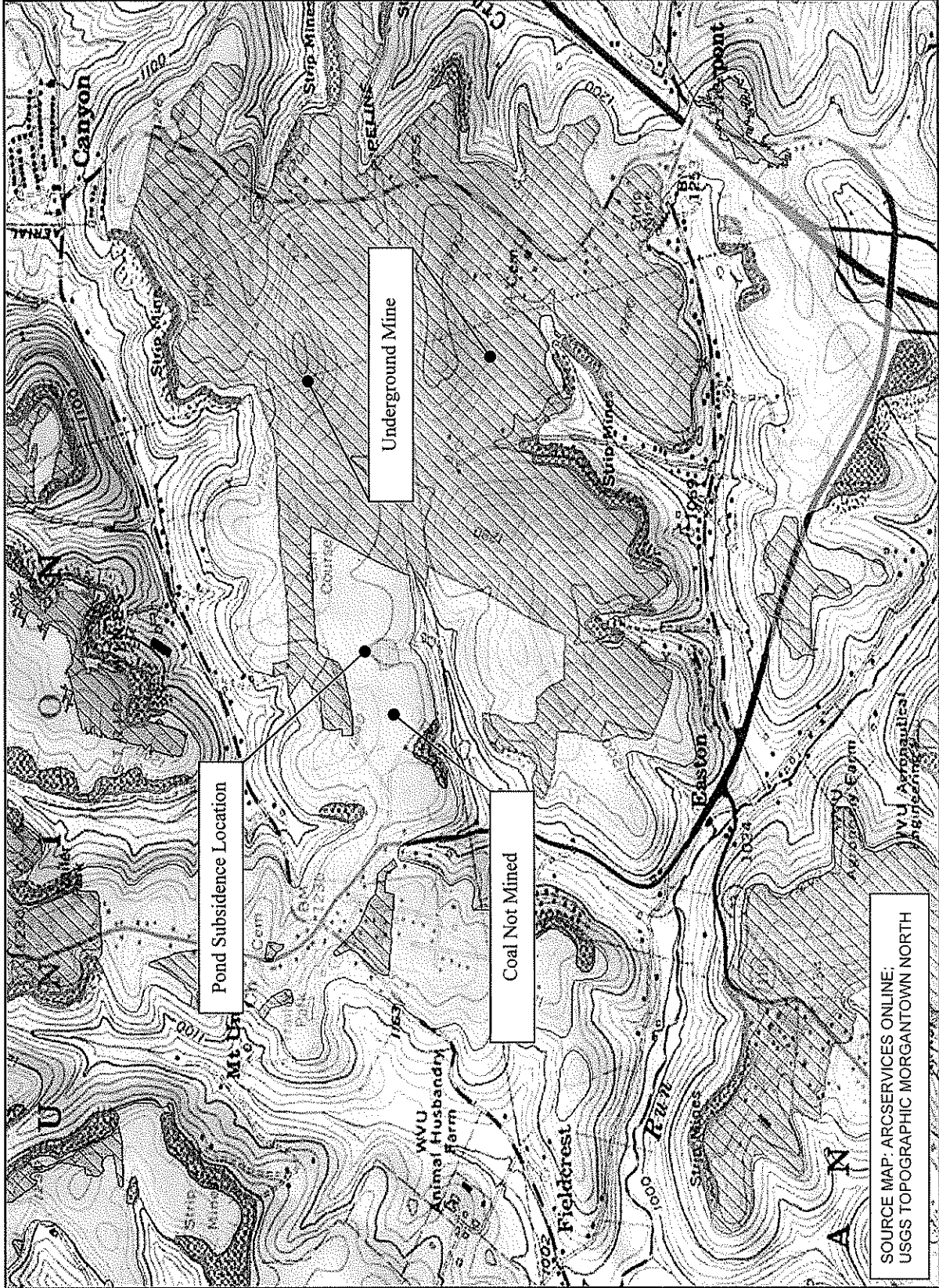
URS provides the full range of engineering and construction management services and gives AML the luxury of "one-stop-shopping".

**Project Team Commitment** - Although our project team has significant national and international recognition, we are committed to our local community, and in and particular, to the State of West Virginia. This commitment has been demonstrated recently as our Scott Depot, WV office has continued to grow in the face of a slowing economy. Through our Scott Depot office, we have continued to add competent, qualified, hard-working technical staff who are residents of West Virginia and who desire to provide exceptional service to the WVDEP and other clients, both in-state and beyond. To complement our Scott Depot, WV team, we are supported by technical staff in our Morgantown, WV, and Pittsburgh, PA offices. Our team partner, S&L, also share similar principles and commitment to West Virginia with their office in Morgantown, WV. They can also rely on technical support from their Pittsburgh and Harrisburg, PA offices.

URS, in its commitment to these employees, has been actively pursuing work in the private sector and has imported work from other states to keep our employees gainfully employed through this time of governmental program transition. However, even with this "other" work, we desire assignments with the WVDEP and are eager to develop a lasting relationship with AML.

**Project Understanding** - The existing pond at Pines Country Club (PCC) in Monongalia County provides the sole source of irrigation for the course. The reservoir is created by a 235-ft long dam that has a 15-ft wide crest. Unfortunately, the reservoir is located over an apparent abandoned mine and it is our understanding that the reservoir is in the early stages of collapse. Water is leaking into the old mine works, contributing to acid mine drainage. The WVDEP indicated that the current pond cannot be allowed to continue leaking into the abandoned mine works. Based on discussion with PCC, we understand that a sufficiently sized pond can be constructed on site to replace the existing pond. However, PCC has expressed significant concern that abandoning and backfilling the existing pond will result in significant aesthetic loss. Skelly and Loy reviewed available mine map information posted on the West Virginia Geological and Economic Survey (WVGES) web site. On this web site, coal seam thickness and structure as well as surface and underground mine maps are available. Skelly and Loy focused on the area surrounding the Pines Country Club (Pond) subsidence project location. As indicated from the mapping (see next page) the Pittsburgh Coal seam lies approximately 40 to 50 feet below the pond elevation (approximately the 1150 to 1160 MSL). A large underground mine complex extended beneath portions of the Pines Country Club. This mine was identified as the Canyon Coal & Coke Mine and was developed as late 1935.





SOURCE MAP: ARCSERVICES ONLINE;  
USGS TOPOGRAPHIC MORGANTOWN NORTH

However, the mapping did not indicate any of the underground mine works advanced beneath the pond site. All of the Pittsburgh coal seam underlying the pond area is assumed to be in-place based on the mapping. However, further investigation is likely to identify additional mining has occurred closer the subsidence location.

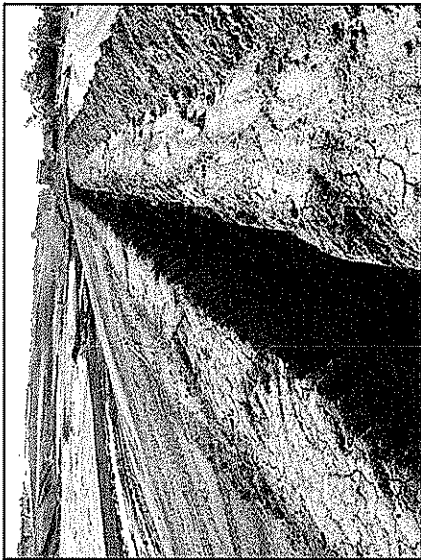
There is another coal seam, stratigraphically above the Pittsburgh, within the project area. This seam is identified as the Redstone. The Redstone crops along the northern edge of the pond at approximately EL. 1200-ft (MSL). However, from the mine mapping found to date, no underground or surface mining appears to have occurred in the vicinity of the pond or the golf course on the Redstone seam. Water feeding exiting the pond would first encounter the Redstone seam before traveling to the Pittsburgh coal seam.

Skelly and Loy has designed similar structural stabilization of mine entries such as the Porter Tunnel entry in Schuylkill County, Pennsylvania.

*Alternative Design Considerations* - URS has the technical expertise to provide dam engineering services to AML, from removal to new dam design. However, an option to consider includes more detailed investigation of mining in the vicinity of the pond to determine the feasibility of stabilization of the mine voids (if needed) such as grout injection from the surface. If feasible, this option could reduce the potential for future subsidence and allow consideration of upgrade options for the existing pond such as installing a geosynthetic liner to minimize seepage. This option would reduce impact to surface areas and maintain current aesthetics.

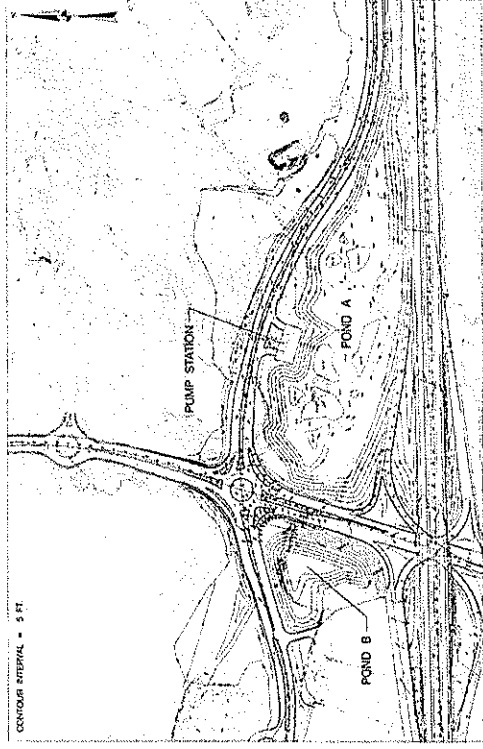
URS recently completed design and construction for three stormwater management (SWM) facilities in Frederick, Maryland. These SWM ponds are designated as Pond A, Pond B and Pond C. Unlike conventional SWM designs, this project utilized geomembranes to minimize surface water infiltration. In particular, Pond A is the largest known lined SWM facility in Maryland with a storage capacity of 159.6 acre-feet. Pond A also required embankment to create the SWM facility, which classified the structure as a high-hazard dam. Pond A combined with Pond B will store

185.2 acre-feet at overflow elevation. A construction photograph indicating the anchor trench for the Pond A membrane line is shown to the left. This facility is located over an active karst area and minimizing seepage was deemed critical to the successful completion of the project. The most significant impact of highway construction along karst terrain is the management of stormwater. Increasing the downward movement of water through the overburden can initiate or increase sinkhole activity in karst. The geomembrane consisted of a 1.5 mm (60 mil) Linear Low Density Polyethylene (LLDPE) material. Other materials considered, but deemed unacceptable, were geosynthetic clay liners (GCL) as well as Ethylene Propylene Diene Monomer (EPDM) and Polyvinyl Chloride (PVC) liners. A notable concern with a GCL liner was the high probability of the liner coming in contact with calcium in the limerock since calcium could, over time, exchange with the sodium in the GCL's bentonite that would cause the product to lose some of its low-permeability characteristics. Although EPDM and PVC have high resistance to deformation and puncture, both have lower interface shear characteristics against the protective geotextiles on the extensive pond slope areas. As such,



URS considered a higher surface friction product, especially for the slope areas. LLDPE is manufactured in both smooth and textured surfaces with the textured surface providing a high interface friction and interface shear resistance on the predominantly 3H:1V side slopes. A non-woven geotextile is generally placed on both sides of the geomembrane, primarily for protection during construction. Additionally, if subsidence occurs and requires a geomembrane repair involving a field seam, the geotextile would provide a relatively clean tie in area once the cover soils are removed.

It should also be noted that the Pond A design incorporated substantial landscape features, including a wet pool, as part of a gateway feature to the City of Frederick. The following figure presents the Pond A and Pond B grading plan. It should be noted that this figure does not represent the grading prior to placement of the geomembrane; grading along those contours would require a complex panel layout as well as an extensive field seaming operation. The goal of the design team was to maintain as near as practical a rectangular grading pattern for the geomembrane subgrade to improve constructability. As such, cover soil of variable thickness will be placed along the side slopes of the geomembrane in accordance with this figure. Some areas will have 18 to 24 inches of cover soil while others will vary and have a significant toe berm at the base. Extensive slope stability analyses were performed for the cover soils. The geomembrane subgrade side slopes were limited to 3H:1V, with select areas steepened to avoid impacting utilities. During large storm events, draining of the ponds will take place in approximately two days, which may require drawdown of up to 8-ft/day. This rate of drawdown may be too extreme to allow common borrow materials to drain on top of the lining system and may result in sloughing or localized slope failure due to pore water pressure buildup. As such, the permeability of material used as cover soil was limited to  $1 \times 10^{-2}$  cm/sec. The removal of stormwater is controlled by two pump stations; one located at Pond B and another located at Pond C. It should be noted that Pond B gravity drains to Pond A. The pump stations transfer the stormwater off-site to Carroll Creek, located north of the project area, through a 1.5-mile forcemain system.



The URS team has the expertise and resources to provide AML with:

- Dam engineering services, should the project require reservoir relocation.
- Mine engineering services to address concerns of the abandoned mine workings.
- Geosynthetic expertise to provide an innovative alternative that addresses PCC aesthetic concerns and offers potential economic benefits for AML.

- In-house geophysical services to help characterize the project area.
  - In-house landscape architecture, mechanical, electrical and general civil engineering to support the project.
- In summary, the URS team provides the full range of engineering and construction management services and gives AML the luxury of “one-stop-shopping”.

## SECTION 2 – KEY PERSONNEL

The URS team has the depth and breadth of capabilities to meet requirements in all areas indicated in this EOI. Our proposed organizational chart is shown on the next page. Aside from the highly respected reputation of URS and S&L, our project team leaders that we commit to this project are uniquely qualified for this assignment. A brief description of their qualifications, that separates this team from our competitors, is as follows:

- **Mr. Walter Kutschke, P.E.** (URS) will serve as the project manager and geotechnical lead for this project. Mr. Kutschke is well versed in geotechnical engineering and in particular dam engineering and geosynthetics. He is currently pursuing his PhD in geotechnical engineering with an expected graduation of Spring 2010. Mr. Kutschke’s 15-years of design experience is balanced with practical construction experience, having performed extensive field monitoring of specialty geotechnical construction. He been involved in many challenging projects, such as
  - **I-70, Maryland State Highway Administration, Frederick County, MD**, involving the reconstruction of two miles of I-70 with associated new interchanges between MD 355 and MD 144. Project required extensive geologic and hydrogeologic studies due to the karst topography. Geotechnical activities required recommendations to stabilize roadways traversing zones considered high-risk for sinkhole development as well as methods to minimize groundwater infiltration along drainage ditches and within stormwater management ponds. Developed deep foundation recommendations for two stormwater pumping stations as well as thrust block design for a 1.0-mile long force main system. Construction services included supervising three micro-pile load test programs and establishing a suitable bearing stratum in karst based on the load test data.
  - **South River #25, Toms Branch Dam, Natural Resources Conservation Service, United States Department of Agriculture, Augusta County, VA**, involving dam rehabilitation that consisted of raising the existing 62-ft high earthen embankment dam by two feet and widening the Auxiliary Spillway to 300-ft. The existing spillway was maintained at its current elevation with an increase control length of 120-ft that required designing a rock cut slope as well as lengthening and raising the training dike.

Mr. Kutschke has presented his technical papers at professional conferences held throughout the United States, some of which are noted below:

- Kutschke, W.G. (2007). “Micropiles in Karst: Interstate 70, Frederick County, Maryland”, *Proceedings of Geo-Denver 2007, Contemporary Issues in Deep Foundations, Geotechnical Special Publication No. 158 (CD-ROM)*, ASCE, Reston, VA.

- o Kutschke, W.G., Miller, S.M., Dr. Zhou, W. and Dr. Beck, B.F. (2005). "Site Characterization and Geotechnical Roadway Design over Karst: Interstate 70, Frederick County, Maryland", *Proceedings of the 10th Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst, Geotechnical Special Publication No. 144*, ASCE, Reston, VA.

Mr. Kutschke has the experience and leadership that will provide AML with an economical and technically sound engineering solution. He will coordinate all AML site investigations, engineering design, and in-office report preparation efforts; assist with leading efforts to develop solutions to any problems and challenges that arise; preparing and submitting administrative reports; attend any required meetings with Office of Abandoned Mine Lands & Reclamation personnel; and ensuring accurate and timely invoicing. Mr. Kutschke will be the liaison and focal point between the Office of Abandoned Mine Lands & Reclamation and URS for this project, thereby ensuring timely and consistent communication.

- **Mr. Joseph Kula** (URS) is URS's Eastern Division Director of Dam Engineering. Mr. Kula will provide the overall technical and quality assurance activities for this project.

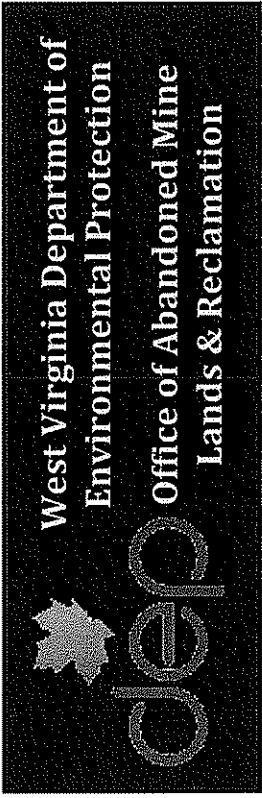




# Project Organizational Chart

Pines Country Club  
(Ponds) Subs. Project

May 7, 2009



**Technical Leader & QA/QC**  
Joe Kula, PE

**Principal-in-Charge**  
John Smelko

**Project Manager**  
Walter G. Kutschke, PE

**Civil Engineering**  
Norm Roush, PE, PS  
Bruce Bosley, PE  
Romaine Kesecker, RLA, ASLA  
*E&S*  
Joel Shodi, PE  
Jon Warnock, EIT

**Geotechnical & Geologists**  
Walter Kutschke, PE  
Dale Wagner, PG  
Amanda Bayne  
*Geophysics*  
Tim King, PG  
Michael Greer  
Mathew Barner

**Mine Engineering**  
Terry Schmidt, PE\*

**Surveying**  
Marcus Lowery, PE, PLS  
Mark Fox

**Hydrology & Hydraulics**  
Bryan Vogelsang, PE  
Thomas Smith  
Matt Dudley

**Dam Engineering**  
Bob Pinciotti, PE  
Qingwei Fu, PhD, PE

**Environmental**  
Tom Page, CEA/REPA  
Rob Hilliard  
Dan Angelo

**Mechanical**  
Eric Nilson, PE  
Rob Oates, EIT

\*Skelly & Loy



- **Mr. John Smelko (URS)** is the Scott Depot Office Manager and an Environmental Scientist. Mr. Smelko will serve as the principal in charge and will provide a local point of contact for the Office of Abandoned Mine Lands & Reclamation as and also will provide technical support.
- **Mr. Terry Schmidt, P.E. (S&L)** will serve as the lead mine engineer for this project. He is a leading authority on mine reclamation practices including the treatment of acid mine drainage (AMD). Mr. Schmidt has served as Engineer-In-Charge of many assessment and mitigation projects. Mr. Schmidt's responsibilities have included directing the development and implementation of comprehensive field investigations, managing the data evaluation process, determining Best Available Technologies (BAT), developing engineering design packages, obtaining necessary permits, supervising construction inspection activities, and overseeing long-term monitoring and system operation and maintenance requirements.

As a result of his extensive experience, Mr. Schmidt has developed a unique understanding of the interrelationships between active and abandoned mine complexes, water quality, particularly pH and elevated metal concentrations, local geology and hydrogeology, and flow rates and their impact on the selection of the most appropriate abandoned mine reclamation practices. In addition to his project responsibilities, Mr. Schmidt is a well-published author on AMD issues. He has presented his technical papers at professional conferences held throughout the United States, some of which are noted below:

- "Evaluating Successes in Passive Treatment at Sequatchie Valley Coal Corporation in East Central Tennessee", presented at the 2001 National Meeting of the American Society for Surface Mining and Reclamation, Albuquerque, New Mexico, (principal author)
- "Passive, Periodic Flushing Technology for Mine Drainage Treatment Systems", presented at the 2001 National Meeting of the American Society for Surface Mining and Reclamation, Albuquerque, New Mexico, (co-author)
- "Prediction of Water Quality at Surface Coal Mines", published by National Mine Land Reclamation Center, Morgantown, West Virginia, 2001, (co-author)
- "Assessment of the Applicability of an Anoxic Limestone Drain for a Surface Mine in East Central Tennessee", presented at the 1996 National Meeting of the American Society for Surface Mining and Reclamation, Knoxville, Tennessee, (principal author and presenter).
- "Coal Remining Analysis for Maximum Resource Recovery and Environmental Improvement", Master of Science Thesis, The Pennsylvania State University, 1994.
- "Remine: A Computer Program for the Analysis of Abandoned Mine Lands Projects in the United States": presented at the Surface Coal Mining and Reclamation Symposium in Alberta, Canada, 1988 (coauthor).

Mr. Schmidt is also involved in many professional mining organizations, such as The Society of Mining Engineers of America - Institute of Mining Engineers, The American Society for Surface Mining and Reclamation, American Institute of Mining Engineers, Penn Anthracite American Institute of Mining Engineers, and Acid Drainage Technology Initiative (ADTI). Mr. Schmidt's experience and technical knowledge are a vital component to this team.

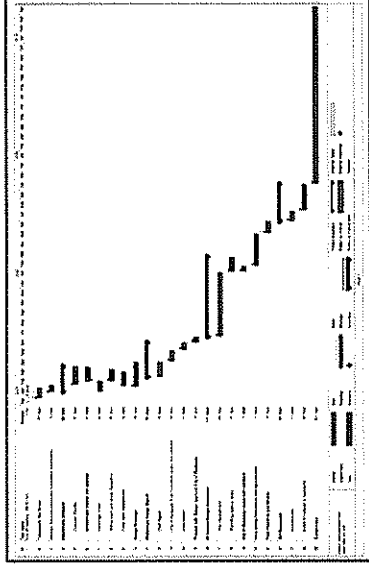
Select project descriptions are provided in Appendix B and resumes for the key individuals are provided in Appendix A.

### SECTION 3 – PROJECT MANAGEMENT

URS' philosophy is to provide all of our clients' top-quality services by providing highly experienced Engineers and Scientists. However, their top-quality service is only useful when it is properly prepared and presented to the client. URS's design teams are always led by Project Managers who have complete control of their project teams so they can be focused on the client's needs. To properly control delivery of our services, URS understands and addresses the role for proper comprehensive management of our services. We emphasize close management supervision on all the various types of projects we perform. URS can claim these capabilities based on our achievements on previous projects of similar scope and the caliber of the professionals we have committed to this effort.

To ensure that sound project management is applied to every project, Mr. Kutschke will develop a *Project Execution Plan* (PXP) structured to the specific needs of this project. Major elements of each plan include:

- Client Information
- Project Goals and Objectives, including identification of the project vision and critical success factors
- Project Scope
- Project Schedule, including critical milestones, durations, and the resources necessary to achieve delivery
- Financial Budgets, including both the project and task budgets (in dollars), and the corresponding URS labor hour budgets for each task
- Project Team Organization, including resource requirements, responsibilities, and interface with our client, approval agencies, contractors, and other entities having an impact on the project.
- Deliverable Standards, including drawings, specifications, reports, responses to inquiries, etc.
- Project Communications
- QAP outlining the Quality Control Processes, including detailed checking of documents and calculations, Independent Technical Reviews (ITRs), and internal quality audits
- Change Management Process



- Document Control, including filing systems and procedures

- Safe Work Plan outlining both the office and field policies and practices to provide a safe work place for our employees and others they come into contact with

With sound planning organized and in place, URS Project Managers provide leadership and encourage their staff to both perform at their highest ability and to be an advocate of our client needs. The Project Manager then controls the performance of work by monitoring schedule and budgets, ensuring that the PXP is followed, and that communication with the client follows the mutually agreed upon Project Communication Plan.

Key control steps along the way include the development of a detailed work plan for each assignment with the smallest measurable sub tasks identified. A detailed project schedule is developed outlining the subtasks and identifying intermediate milestones. The schedule includes all client meetings, deliverables, and review times.

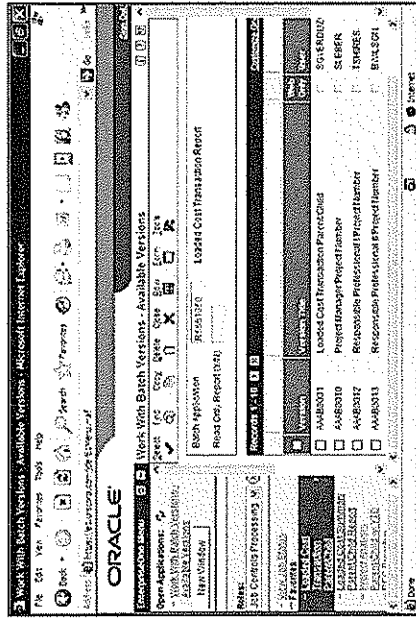
URS has a robust Enterprise One (E1) time and expense tracking system. Employees charge their time daily. The Project Engineers monitor both budget and schedule on a daily basis. The Project Manager has access to all project charges every Monday to chart the financial progress of the project. The Principal-in-Charge tracks project performance by meeting with the Project Manager weekly and independently checking financial performance monthly. The Principal-in-Charge also conducts routine client audits to confirm that the project is in good standing.

During the project monitoring, in the event that the schedule slips or project costs exceed the budget, the Project Manager and Project Engineer will develop a corrective action plan that is immediately implemented to correct the problem.

The final step to administering the contract efficiently is to communicate with AML. A Communications Plan for each project will be developed as part of the PMP. The plan will identify with AML lines and frequency of communication so that the right people are talking and that Managers for both the AML and URS are apprised of the discussions. This will avoid bottlenecks and ensure AML's staff time is not wasted. The plan will identify appropriate methods to communicate and how to record important conversations and decisions.

The URS Project Manager will schedule regular progress meetings or calls with the AML Project Manager. Monthly progress reports will be submitted to AML with invoices. Meetings with key staff will be organized to review progress and to discuss key AML decisions, as warranted by project conditions.

***Effective communication with AML will be stressed to ensure no surprises!***



will identify with AML lines and frequency of communication so that the right people are talking and that Managers for both the AML and URS are apprised of the discussions. This will avoid bottlenecks and ensure AML's staff time is not wasted. The plan will identify appropriate methods to communicate and how to record important conversations and decisions.

## **SECTION 4 – PROPOSED SUBCONTRACTORS**

The only proposed subcontractor for this assignment is Skelly & Loy, Inc. (S&L). S&L will complete all mine engineering activities for this assignment. URS has worked successfully with S&L on past assignments.

Geotechnical site characterization activities (i.e., test borings) will be performed by a subcontractor under a competitive bidding process. URS will provide surveying, geotechnical laboratory testing and geophysical services.

## **SECTION 5 – PRODUCT QUALITY CONTROL**

### **Quality Assurance/Quality Control**

URS is committed to providing quality service to our clients. To meet this commitment on all projects, URS has established and implemented a Quality Assurance/Quality Control (QA/QC) Program. Strict adherence to the following procedures ensures that our product will be on schedule, within budget, and constructed with minimum changes or problems.

### **Quality Management System (QMS) and Project Execution Plans**

The Project Manager will prepare a Project Execution Plan (PXP), incorporating input from all key project staff as well as the Officer Quality Officer (OQO). Typically, the PXP will include:

- A detailed scope of work;
- A project schedule clearly identifying project milestones and submittal dates;
- A manpower breakdown and cost estimate indicating the work effort required for each element of the project;
- A list of key staff for URS and WVDEP with contact phone numbers; and
- An outline of project communication procedures.

After complete review and approval by the OQO, signed copies of the PXP are distributed to key project staff at URS and S&L. The PXP is reviewed monthly and updated as necessary.

### **Detailed Checking**

Detailed checking is performed for all reports, computations, plans, and specifications. The checker initials and dates all computations and the checked set of documents are stamped, initialed, and signed. All information is independently checked before it is submitted to AML. A QA form documents completion of the detailed checking and confirms the proper resolution of all discrepancies. The form is signed by the checker and the Project Manager.

### **Audits**

A paperwork audit is performed on all projects within 30 days of Notice to Proceed to assure completion of the PXP. Nonconformance issues are reported to the QO and Office Manager. All projects undergo an annual Technical Audit, conducted by the Operations Manager, to assure conformance with all applicable URS QMS procedures.

### **Project Control**

A monthly Estimate to Complete (ETC) is performed on each project or task to compare the percent complete versus the percent of funds expended. This process flags potential overruns early on so that measures to complete the remaining work within budget can be implemented. The ETC, prepared by the Project Manager, is reviewed and approved by the Principal-In-Charge and submitted to the Operations Manager.

### **Record Keeping**

All QMS documents described above are filed in the QMS folder within the Project Central File.

In summary, the cornerstone of URS Corporation's reputation as a global leader in planning, and engineering services is found in its commitment to quality as well as execution of and adherence to our overall QMS, auditing, project control and records program.

## **SECTION 6 – PROJECT COST CONTROL**

URS Corporation maintains, and has in effect, a cost accounting system that segregates and identifies accumulating costs for each job performed under cost-type contracts. Our accounting system has been used and accepted for other projects performed for the West Virginia Department of Transportation.

URS is committed to our role as good stewards of government funds, and we will work as partners with the WVDEP to meet project challenges. We understand budgets and develop them using the latest techniques, including value preservation and rigid quality control. We control costs through the following methods:

- Use of highly qualified personnel on all assignments.
- Corporate-wide computer network for cost efficiency among resources.
- Realistic cost estimation using fully automated, interactive cost accounting tools.
- Competitive procurement where appropriate for best value.
- Management of subcontractors for optimal performance including:
- Weekly review of project costs and immediate correction of problems.
- Weekly review of schedules and immediate initiation of corrective measures for schedule-critical activities.
- Strict adherence to a concise but accurate documentation of work activities.

- Immediate attention to and resolution of problems.
- Strict adherence to quality control plans.

Our corporate and project financial accounting systems comply with the Federal Acquisition Regulation Supplement (FAR), Defense Federal Acquisition Regulation Supplement (DFARS), and Cost Accounting Standards (CAS) requirements. Senior staff with relevant experience completed cost estimation in the proposed scope of work; all documents are thoroughly reviewed to reduce the number of change orders processed throughout the undertaking.

Our information management systems allow project managers to monitor expenditures, identify potential cost overruns, and take corrective actions before problems develop. Our Project Managers will manage the projects according to those procedures. All direct, indirect, overhead and profit (i.e., fee) charges are established on the basis of a current DCAA audit.

#### **SECTION 7 – SUMMARY**

URS' Scott Depot Office is located approximately 27 miles west of the WVDEP - Office of Abandoned Mine Lands & Reclamation's main office in Charleston and our Pittsburgh, PA office is located about 70 miles from the project site. Our team is thoroughly versed in geotechnical and mine engineering with a strong commitment to understanding and meeting the needs of AML. We are eager to undertake this opportunity and to continue our working relationships with WVDEP - Office of Abandoned Mine Lands & Reclamation.

20. The foregoing is a statement of facts.

*Thomas G. Bice*

Signature: \_\_\_\_\_

Title: Vice President

Printed Name: Thomas G. Bice, P.E.

Date: May 7, 2009

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp P=Personal	Additional Info Provided in Section (e)	PROJECT EXPERIENCE REQUIREMENTS																PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional							
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Port/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Man/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Investigation/ Replacemnt	Construction Inspector/ Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Joseph Kula, PE	Walter G. Kutschke, PE	Terry Schmidt, PE	Robert Fincelli, PE					
																							Tom Page, CE/AREPA			
I-70, City of Frederick, MD	C	Appendix A				X						X					X				M/P	P				
Toms Branch, Winchester, VA	C	Appendix A				X											X				M/P	P				
Pofter Tunnel Mine Seal, Schuylkill County, PA	C	Appendix A				X		X									X									
Kellys Creek Watered AMD Survey and Restoration Plan, Kanawha County, West Virginia	C												X					X								
Valley Point #12 AMD Remediation Project, Preston County, West Virginia	C		X			X											X									
North Fork Greens Run AMD Remediation Project, Preston County, West Virginia	C					X											X									
Gallentine AMD Remediation Project, Fayette County, Pennsylvania	C		X			X											X									
Sagamore/Max B. Noble AML/AMD Remediation Project, Fayette County, Pennsylvania	C		X			X											X									
Blacklegs Creek Acid Mine Drainage Discharge Treatment Projects	C		X			X											X									
Confidential Clients, Phase I ESAs of Surface/Deep Mine Complexes, KY & WV	P		X														X									
Kellys Creek Watered AMD Survey and Restoration Plan, Kanawha County, West Virginia	P												X					X								
Valley Point #12 AMD Remediation Project, Preston County, West Virginia	P		X			X												X								
North Fork Greens Run AMD Remediation Project, Preston County, West Virginia	P					X											X									
Anna and Steve Gosdy Memorial AMD Remediation Project, Fayette County, Pennsylvania	P																X									
Gallentine AMD Remediation Project, Fayette County, Pennsylvania	P		X			X											X									
Sagamore/Max B. Noble AML/AMD Remediation Project, Fayette County, Pennsylvania	P		X			X											X									

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

\*\* Use this area to provide specific sections or pages if needed for reference.

\*\*\* List Primary Design personnel and their functional capacity for the projects listed.





## Joseph Kula, PE

*Vice President, Eastern Division Director of Dam and Reservoir Engineering*

### Areas of Expertise

Management  
Dam & Water Resources  
Engineering  
Civil - Geotechnical Engineering  
Forensic Investigations & Expert  
Witness

### Years of Experience

With URS: 29 Years  
With Other Firms: 2 Years

### Education

MS/Civil Engineering/1979/West  
Virginia University  
BS/Civil Engineering/1977/West  
Virginia University

### Registration/Certification

1982/Registered Professional  
Engineer/MD/12915  
1985/Registered Professional  
Engineer/VA/15594  
1988/Registered Professional  
Engineer/WV/10409  
1988/Registered Professional  
Engineer/NC/14740 - Inactive

### Overview

Mr. Kula serves as Director of Dams and Reservoirs for the URS Eastern Division. During his 30-year career, he has provided engineering services for approximately 100 dams and levees, primarily in the eastern US and Puerto Rico. Assignments include all facets of dam and reservoir engineering for both new and existing embankment and concrete dams, including feasibility studies, environmental assessments, safe yield analysis, sediment studies, hydrologic/hydraulic studies and spillway design, dam breach/inundation studies, safety inspections and rehabilitation, geotechnical analyses, preparation of plans and specifications, construction quality control, emergency action plans, O&M plans, and decommissioning. Mr. Kula is very active on dam safety initiatives, serves on the Affiliate Member Advisory Committee of ASDSO, the Executive Committee for the Council of Safe Dams and the ASCE Committee on Embankments, Dams, and Slopes, and is a member of USSD. He has also prepared and served as a trainer for several dam safety workshops in Massachusetts, Maryland, Pennsylvania, and Florida.

### Project Specific Experience

**Stafford County, Rocky Pen Run Reservoir, Stafford County, VA.** Project Director. Engineering, design, and permitting of a 5.3 BG pumped storage water supply reservoir. The project includes a 130-foot high dam RCC dam, gated spillway and inlet/outlet works, 20-foot high saddle dike, 60 MGD river intake, pumping station, and pipeline. Ongoing, \$50M/\$2.1M

**City of Manassas. T. Nelson Elliott Dam, Manassas, VA.** Project Director. Dam safety and rehabilitation services for a 60-foot high concrete gravity / earth dam, including EAP update, potential failure modes analysis, hydraulic analysis, geotechnical investigations, stability analysis, alternatives evaluation, and preliminary engineering and design including post-tension anchor design.

**Stafford County, Smith Lake Expansion, Stafford County, VA.** Project Manager. Complete engineering services for the design and permitting of a dam raise, reservoir expansion, and spillway rehabilitation. The project included a 20-foot high dam raise, slurry trench cut-off, new principal spillway, an RCC overtopping emergency spillway, new reservoir intake, and wetlands mitigation design. 1994-2000; \$10M/\$1.2M

**New York City Department of Environmental Protection (DEP), Dam Safety Services, NY.** Task Order Manager. Project consists of various dam safety related tasks for the 22-reservoir water system for New York City. Services include: dam safety inspections of both earth and gravity dams, stability analysis, evaluation of DEP dam safety and



instrumentation programs, development of a hydrologic model for the 16-reservoir Croton watershed, spillway evaluations, dam break analyses, and EAP updates.

**New York State Department of Environmental Control (DEC), Gilboa Dam, Gilboa, NY.** Geotechnical Engineer. Technical review of geotechnical aspects related to the preliminary design of emergency modifications to Gilboa Dam to address spillway capacity and stability issues. The dam is a composite type structure, consisting of an embankment and concrete/masonry spillway section. Emergency modifications consisted of a spillway notch and post-tension anchor design.

**Exelon, Conowingo and Muddy Run Hydro Power Dams, MD /PA.** Geotechnical Engineer. Member of core team for the FERC potential failure modes analysis for a 105-ft high concrete gravity dam with a multi-gated spillway and a 290-ft high earth-rock dam and ancillary structures.

**WSSC, T. Howard Duckett Dam Safety Analysis, Laurel, MD.** Project Director. Comprehensive safety analysis for a 135-ft high slab & buttress (Ambursen) dam. Project includes detailed stability evaluations for the concrete dam and seven 16-ft high, 20-ft wide tainter gates, PMF estimate, seismic analysis, rock erodability evaluation, and development of rehabilitation alternatives. 2005-present; \$650,000/\$50,000

**City of Frederick, Lake Linganore Dam / Spillway Rehabilitation, New Market, MD.** Project Director. Rehabilitation of a 125-ft wide concrete principal spillway. Performed geotechnical investigation, structural analysis, and alternatives analysis for stabilizing 30 ft high concrete walls. Prepared design documents for tiebacks, concrete overlay and new flowby. 2001-2006; \$1M/\$0.2M

**WSSC, Little Seneca Lake and Dam, Boyds, MD.** Geotechnical Engineer for the design, construction and post-construction monitoring for a 95-foot high zoned earth-rock dam, outlet tunnel and highway relocation. Included field investigations, stability, seepage and settlement analyses, embankment design and foundation treatment.

**Inspiration and Helene Lakes Dams, Gaithersburg, MD.** Project Manager. Engineering services for increasing the spillway capacity and rehabilitating the embankments for two high hazard dams. Included hydrologic / hydraulic analyses, geotechnical analyses, spillway and embankment design and preparation of the EAP.

**Towamensing Trails Dam, Carbon County, PA.** Project Director for inspections and geotechnical evaluations of a 35-foot high, high hazard embankment dam and hydrologic and hydraulic analyses for spillway evaluations and dam break modeling with incremental damage assessment. 2002, 2005-present; \$175,000/\$150,000



## Walter G. Kutschke, P.E.

*Lead Geotechnical Engineer*

### Areas of Expertise

Site Characterization  
Shallow and Deep Foundations  
Retaining Structures  
Embankments  
Rock Slopes and their Stabilization  
Ground Improvement  
Instrumentation Programs  
Karst  
Pavements  
Geosynthetics

### Years of Experience

With URS: 14 Years  
With Other Firms: 0 Years

### Education

PhD / Geotechnical Engineering /  
2009 (anticipated) / University of  
Pittsburgh

MS / Geotechnical Engineering /  
1995 / State University of New  
York at Buffalo

BS / Civil Engineering / 1993 /  
State University of New York at  
Buffalo -- Cum Laude

### Registration/Certification

2007 / NCEES / 31594  
2007 / PE / KY / 25592  
1999 / PE / PA / PE054667E  
1999 / PE / WV / 014110  
1998 / PE / MD / 23430

### Overview

Mr. Kutschke has expertise in subsurface investigations for geotechnical site characterization as well as the development of geotechnical recommendations for major roadway, railway and civil infrastructure projects. He is knowledgeable in numerous aspects of geotechnical engineering including foundation, retaining wall, geosynthetic, soil/rock cut slopes, embankments, levees and dams, pavement design, ground improvement as well as expert witness services. Mr. Kutschke also has extensive experience in geotechnical construction inspection as well as developing, monitoring and interpreting geotechnical instrumentation programs. He serves on the Deep Foundations Institute Micropile Committee and the Soil Nailing / Tieback Committee as well as ASCE's Earth Retaining Structures Committee and Grouting Committee. Mr. Kutschke also has authored numerous papers involving challenging geotechnical engineering projects.

### Project Specific Experience

**United States Army Corps of Engineers, Hurricane Protection Office, New Orleans East Levee Upgrades, CSX to Michoud Canal, Reach LPV 111.** Deputy Project Manager for the stabilization and increased level of flood protection for 5.3 miles of earthen levee over soft soils. Work involved ground improvement techniques consisting of deep soil mixing, geosynthetics and slurry wall technologies as well as developing foundation recommendations for the tallest T-Wall flood protection structure in New Orleans East. Work was part of a larger program that required extensive coordination among many URS offices.

**Keystone Buildout, Norfolk Southern Corporation, Indiana County, PA.** Lead geotechnical engineer for 5.3-miles of a new single-track alignment. Geotechnical activities required recommendations for the stabilization of fill/cut slopes, side-hill fills as well as the development of cut-slope treatments for moisture-sensitive materials and the development of an instrumentation program to monitor potential historic landslides. Developed shallow and deep foundation recommendations for two multi-span ballasted deck bridges with total lengths of 225 and 430 feet and two soil-nail wall retaining structures with a total retained area of 1,004 square yards.

**Keystone Buildout, Norfolk Southern Corporation, Indiana County, PA.** Principle inspector for the \$2.8 million geotechnical work which involved the installation of 33,900-ft of rock anchors, 2,760 cubic yards of shotcrete slope protection and 1,004 square yards of soil nail retaining structures. Supervised and accepted 15 verification tests and 25 proof tests for soil nails / rock anchors. Construction duties also involved monitoring six inclinometers and seven monitoring wells during construction, developing immediate landslide repair methods and selecting appropriate earthen materials for use as construction materials.



**Pennsylvania Department of Environmental Protection, Forward Township Fly Ash Slide, Allegheny County, Pennsylvania.** Developed and managed the subsurface investigation and site characterization program for failed roadway embankment constructed with soil, fly ash and slag. Supervised the development of an extensive slope stability analysis program and developed roadway repair details.

**Confidential Client, Fly Ash Slope Remediation, Venango County, Pennsylvania.** Developed a subsurface investigation program and characterized a former waste disposal facility for geotechnical analysis. Developed several alternatives to address the marginally stable slope such as soil mixing and the injection of a lime slurry using a multi-injector rig to take advantage of the pozzolanic properties of the fly ash. Evaluated alternatives and provided final recommendations.

**Staunton Heights Landslide, Prestige Homes Inc., Allegheny County, PA.** Directed the site reconnaissance and characterized an existing landslide threatening a residential development. Developed slope repair methods and provided construction inspection services during landslide repair activities.

**Hazelwood Avenue over I-95, Baltimore, MD.** Responsible for an existing roadway embankment placed for grade separation that comprised roadway stability due to significant sloughing failures and erosion gullies. Design involved developing geotechnical recommendations for a 30-ft high reinforced soil slope (RSS) benched into the existing embankment while maintaining one-lane of traffic. Side slopes along the RSS were as steep as 1.3H:1V. Design work also required incorporating scour countermeasures within the RSS to protect the system against high water conditions from the underlying culvert. Construction services included shop drawing review and on-site field consultation.

**Garrett County Airport, Garrett County, MD.** Developed geotechnical recommendations for a 95-ft high embankment constructed on an existing sidehill as an airport access road on a new alignment. Design incorporated recommendations to preclude undermining existing facilities during embankment construction.

**Appalachian Corridor H, Section 5, WVDOH, Hardy County, WV.** Geotechnical Engineer for 8-miles of a proposed new highway system. Developed the geotechnical recommendations for rock cut slopes with heights up to 115-ft with dipping rock strata, embankments with heights up to 150-ft as well as the internal fill benching requirements for side-hill fills. Developed the foundation recommendations for the major culverts (open and closed bottom) and for the dual 6-span, 450' foot long bridge.

**Appalachian Corridor H, Section 5 - Realignment, WVDOH, Hardy County, WV.** Geotechnical Engineer for the re-alignment of 1.5-miles of a new highway system. Developed geotechnical recommendations for rock cut slopes with heights up to 100-ft with dipping rock strata and embankments with heights up to 100-ft and side slopes as steep as 1.5H:1V.



### **Professional Societies/Affiliates**

American Society of Civil Engineers (ASCE) - Earth Retaining Structures Committee and Grouting Committee  
Deep Foundations Institute - Micropile Committee and Soil Nail / Tieback Committee  
Society of Military Engineers

### **Specialized Training**

CSX Roadway Worker Protection, Renewed 2007  
PennDOT Level II Test Boring Inspector, 2002  
Dale Carnegie – Human Relations Principles, 2003

### **Awards**

ACEC/National – *Transportation Honor Award* for Keystone Buildout, Norfolk Southern Corporation, Indiana County, PA.  
ACEC/PA and IL – *Transportation Honor Award* for Keystone Buildout, Norfolk Southern Corporation, Indiana County, PA.  
ASCE/Pittsburgh Section – *Award of Merit* for Keystone Buildout, Norfolk Southern Corporation, Indiana County, PA.

### **Select Publications**

1. Kutschke, W.G., Petersen, W.K., and Meyers, J.R. (2008). “Rock Slope Design for New Railroad Alignment in Indiana County, Pennsylvania”, *Proceedings of 23rd ASCE Central PA Geotechnical Conference*, Hershey, PA.
2. Kutschke, W.G., and Tarquinio, F.S. (2007). “Soil Nailing Practices in the United States”, ISSMGE TC17 Working Group G: Soil Reinforcement in Cuts (Soil Nailing), Madrid, Spain.
3. Kutschke, W.G., Petersen, W.K., Zorn, E.V., and Meyers, J.R. (2007). “Geotechnical Challenges Posed by Weak Claystone in Deep Cuts”, *Proceedings of the 58th Highway Geology Symposium*, Pocono Manor, Pennsylvania.
4. Kutschke, W.G., Tarquinio, F.S., and Petersen, W.K. (2007). “Practical Soil Nail Wall Design and Constructability Issues”, *Proceedings of Deep Foundations Institute, 32nd Annual Conference on Deep Foundations*, Deep Foundations Institute, Hawthorne, NJ.
5. Kutschke, W.G., Petersen, W.K., Meyers, J.R., and Zorn, E.V. (2007). “Rock Cut Slope Instrumentation within Variable and Potentially Unstable Sedimentary Rock Strata”, *Proceedings of the 7th International Symposium on Field Measurements, Geotechnical Special Publication No. 175*, (CD-ROM), ASCE, Reston, VA.
6. Kutschke, W.G., Petersen, W.K., and Meyers, J.R. (2007). “Rock Slope Protection System for Differential Weathering Materials”, *Proceedings of Geo-Denver 2007, Embankments, Dams and Slopes: Lessons Learned from New Orleans Levee Failures and Other Current Issues, Geotechnical Special Publication No. 161* (CD-ROM), ASCE, Reston, VA.

**TERRY W. SCHMIDT, P.E.**  
**Vice President, Engineering**



**EDUCATION:**

M.S., Mining Engineering, 1994, The Pennsylvania State University  
B.S., Mining Engineering, 1985, The Pennsylvania State University

**PROFESSIONAL REGISTRATIONS:**

Professional Engineer, PA, NC, TN, VA, MD, OH

A leading authority on mine reclamation practices including the treatment of acid mine drainage (AMD), Mr. Schmidt has served as Engineer-In-Charge of many assessment and mitigation projects. Mr. Schmidt's responsibilities have included directing the development and implementation of comprehensive field investigations, managing the data evaluation process, determining Best Available Technologies (BAT), developing engineering design packages, obtaining necessary permits, supervising construction inspection activities, and overseeing long-term monitoring and system operation and maintenance requirements.

As a result of his extensive experience, Mr. Schmidt has developed a unique understanding of the interrelationships between active and abandoned mine complexes, water quality, particularly pH and elevated metal concentrations, local geology and hydrogeology, and flow rates and their impact on the selection of the most appropriate abandoned mine reclamation practices. In addition to his project responsibilities, Mr. Schmidt is a well-published author on AMD issues. He has presented his technical papers at professional conferences held throughout the United States.

**PROFESSIONAL EXPERIENCE**

**Valley Point #12, West Virginia** – Evaluated AMD treatment alternatives and designed treatment system in Preston County under a contract with Friends of Deckers Creek. The design effort included: capture of the discharges at the Portal Locations; developing provisions for unexpected blowout of the mine pool; **conveyance pipes, culverts, and channels**; treatment ponds; regrading; and revegetation. The system was constructed in 2008 under the construction supervision of West Virginia AML personnel with Skelly and Loy oversight.

**Porter Tunnel, Pennsylvania** – Assisted in the management of 15,000 acres of active and abandoned mine lands in Schuylkill County, Pennsylvania for Rausch Creek Land. The management activities included thousands of acres of abandoned mine lands as well as a dozen active surface and underground mine permits. As part of this effort, a wet mine seal was designed for the Porter Tunnel as well as two conventional mine seals at associated air shaft and access points to the mine. The **wet seal including a 54 inch steel pipe extending 500 feet into the mine opening**. The mine opening was accessed from the surface using a drill and a flowable fly ash/Portland cement mixture was used to structurally strengthen the mine opening below State Route 209. The project also included the design of an active treatment system for the discharge.

**Blackleggs Creek, Pennsylvania** – Evaluated AMD treatment alternatives and designed treatment systems in Indiana County under a contract with Blackleggs Creek Watershed Association. Four treatment systems were designed: Kolb; Big Run #2; Big Run #7; and Big Run #8. Treatment systems included the **design of four wet mine seals at portal locations**, one at each treatment system. Flow rates from the portals ranged from hundreds of gallons per minute (gpm) to several thousand gpm. The design effort included: wet mine seals; developing provisions for unexpected blowout of the mine pool; conveyance pipes, culverts, and channels; treatment ponds; regrading; and revegetation. The Kolb system was constructed in the early 2000's, followed by Big Run #2, Big Run #7, and Big Run #8 which is scheduled for completion in 2009. Construction activities have been completed each construction season in a logical and sequential manner with construction supervision completed by Skelly and Loy.

**Cold Stream, Pennsylvania** - On behalf of the Woodduck Chapter of Trout Unlimited with funding provided by Pennsylvania's Growing Greener program, Mr. Schmidt managed the design and construction of an acid mine drainage treatment system. Based on a **thorough evaluation of site conditions and water quality data**, he designed a Vertical Flow Reactor (VFR) to treat the main AMD seep known as "Chiller Seep". Components of

**TERRY W. SCHMIDT, P.E.**  
Vice President, Engineering  
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the system include a layer of compost to strip oxygen followed by contact with limestone to impart alkalinity. The net alkaline water is then routed through pond and wetland cells for precipitation of metals. The system also includes a passive flushing technology for removal of aluminum.

**Hubler Run, Pennsylvania** - Evaluated AMD treatment alternatives for this tributary to the Susquehanna River under a contract with The Freshwater Institute, an arm of The Conservation Fund. Project activities included **comprehensive field investigations, data evaluations,** and engineering design package preparation. Engineered a passive, periodic flushing system that maintains the hydraulic conductivity and treatment performance of an open limestone pond system. The treatment system consists of independent open limestone cells for alkalinity addition and two wetland cells in series for settling precipitated metals.

**Friedline Mine Site, Pennsylvania** - Currently directing the assessment and rehabilitation of an operating **passive AMD treatment system.** Managing the evaluation of water quality data, review of SAPS engineering drawings, and coordination with regulatory agencies. Supervising system restoration to include installation of an aluminum recovery loop, removal and replacement of iron/compost layer, inspection of limestone layer and replacement if necessary, upgrade of flushing system, and lining the outflow channel with limestone. Developed a plan to capture newly formed seeps and direct them to a new open limestone pond.

**Raccoon Creek, Pennsylvania** - Completed a **Watershed Abandoned Mine Drainage (AMD) Survey** and Preliminary Restoration Plan for the Raccoon Creek watershed located in western Pennsylvania. Working closely with local groups, concerned citizens and government agencies, Mr. Schmidt identified significant AMD discharge sources and quantified impacts to the watershed. As a result, remediation methods were identified and cost estimates were developed for future remediation actions for the seven highest prioritized AMD discharges.

**Keyser's Ridge, Maryland** - Rehabilitated two leachate treatment systems that had been installed to treat highway runoff and groundwater discharge from the embankment of U.S. Route 68. Responsibilities included evaluation of systems operations, **analyses of water quality data,** development of rehabilitation and operation and maintenance plans, supervision of construction, preparation of as-built drawings, and long-term monitoring of systems performance.

**Private Client, Pennsylvania** - **Investigated 42 water discharge locations** from a large graphite producer which discharges a combination of acid mine drainage, industrial process wastewater, stormwater, and various other flows which enter the site. Conducted dye tests, performed flow measurements, implemented a sampling and testing program, prepared reports of findings, prepared an Industrial Process Wastewater NPDES Permit, and attended negotiation meetings with the State regulatory agency.

**Private Client, Tennessee** - Served as Principal Investigator in an **acid mine drainage assessment** in Tennessee. Conducted laboratory and on-site treatability studies to define effective chemical treatment approaches and assisted in the design of passive treatment systems. Defined and mapped groundwater basin recharge areas and evaluated the impacts of pumping activities on the regional groundwater flow. Evaluated the hydrologic impacts of the surface coal mine reclamation activities on the receiving streams.

**Private Client, Alabama** - Served as Principal Investigator in an **evaluation of chemical and passive treatment systems** for mine drainage in Alabama. Evaluated current treatment systems and suggested potential cost-effective improvements to existing and planned treatment systems. Conducted treatment studies for fluoride reduction in mine reclamation area runoff water. Two methods of fluoride reduction were studied in the laboratory: ion exchange and uptake by soil materials. Assisted in the design of the full scale treatment system using uptake by soil materials.

**Surface Mine Operator, Pennsylvania** - Managed and operated surface coal mines for W. Schmidt Coal Company in Pennsylvania for over four years. Responsible for all aspects of the day-to-day surface mining activities from property evaluation through job completion. As the mine operator, his duties included

**TERRY W. SCHMIDT, P.E.**  
**Vice President, Engineering**  
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implementation of drilling programs; permitting; erosion and sediment control planning; environmental compliance; mine planning; and reclamation. Also negotiated the sale of active permit areas as well as equipment rental and purchase agreements.

**Graduate Studies** - While working towards an M.S. in Mining Engineering at Penn State University, assisted in the development of the software package "REMINE." Responsible for writing the Basic computer code and associated user's manual sections for one module. "REMINE" is a commercially available software package used for Best Professional Judgment Analysis required by the Federal Clean Water Act to obtain a surface mining permit for remining of abandoned mine lands with pre-existing pollutional discharges. "REMINE" was developed under the cooperation of the Environmental Protection Agency, the Pennsylvania Department of Environmental Resources, and Penn State University.

**PROFESSIONAL AFFILIATIONS:**

The Society of Mining Engineers of America - Institute of Mining Engineers  
The American Society for Surface Mining and Reclamation  
American Institute of Mining Engineers  
Penn Anthracite American Institute of Mining Engineers  
Acid Drainage Technology Initiative (ADTI)

**PUBLICATIONS**

"Evaluating Successes in Passive Treatment at Sequatchie Valley Coal Corporation in East Central Tennessee", presented at the 2001 National Meeting of the American Society for Surface Mining and Reclamation, Albuquerque, New Mexico, (principal author)

"Passive, Periodic Flushing Technology for Mine Drainage Treatment Systems", presented at the 2001 National Meeting of the American Society for Surface Mining and Reclamation, Albuquerque, New Mexico, (co-author)

"Prediction of Water Quality at Surface Coal Mines", published by National Mine Land Reclamation Center, Morgantown, West Virginia, 2001, (co-author)

"Assessment of the Applicability of an Anoxic Limestone Drain for a Surface Mine in East Central Tennessee", presented at the 1996 National Meeting of the American Society for Surface Mining and Reclamation, Knoxville, Tennessee, (principal author and presenter).

"Coal Remining Analysis for Maximum Resource Recovery and Environmental Improvement", Master of Science Thesis, The Pennsylvania State University, 1994.

"Remine: A Computer Program for the Analysis of Abandoned Mine Lands Projects in the United States": presented at the Surface Coal Mining and Reclamation Symposium in Alberta, Canada, 1988 (coauthor).





## Robert Pinciotti

*Principal Geotechnical Engineer*

### Areas of Expertise

- Geotechnical Engineering
- Dam Engineering
- Design and Construction

### Years of Experience

With URS: 15 Years

With Other Firms: [13 Years

### Education

MS/Civil and Geotechnical Engineering/1988/Northeastern University

BS/Civil and Geotechnical Engineering/1979/Lehigh University

### Registration/Certification

1984/Professional Engineer/  
PA/33916-E

1995/Professional Engineer/  
MD/21984

1995/Professional Engineer/  
VA/31182

1995/Professional Engineer/  
DC/10422

1995/Professional Engineer/  
SC/18061

1988/Professional Engineer/  
NJ/36804 (inactive)

### Overview

During his career of over 25 years, Mr. Pinciotti has been responsible for preparing and managing geotechnical investigations of numerous dams, industrial, commercial, and institutional projects throughout the Mid-Atlantic region. The investigations have included soil borings, rock coring, CPTU testing, in-situ vane shear testing, and geophysical testing in a wide variety of geologic settings. Mr. Pinciotti has also provided geotechnical services related to design phase activities, construction phase activities, and forensic evaluations for building as well as slope and dam structures. Sites have ranged from those with deep soil deposits (coastal plain) to those with shallow bedrock. His project experience also included urban sites with significant amounts of fill ranging from construction rubble to steel slag, to soils contaminated with petroleum hydrocarbons.

Earlier in his career, Mr. Pinciotti was employed by the US Army Corps of Engineers. Responsibilities included: development and execution of geotechnical exploration programs in both soil and rock on land, soft dredge disposal areas, rivers, and sea; geotechnical analysis; long-term dredge disposal planning; design of disposal area dikes, as well as supervision and training in the District's soils laboratory. Mr. Pinciotti's experience on dam projects included: installation of piezometers, inclinometers, and weirs; collection of field data, summary of field data, dye testing for a leak in one of the dams, conduit inspections, and overseeing, coordinating and performing the periodic safety inspections for the five soil and rock filled dams of the district.

### Project Specific Experience

**Appalachian Corridor D, Parkersburg, WV.** Project Manager providing geotechnical review, consultation, and oversight of the design teams for the Project Management Team. Responsibilities include reviewing the geotechnical services provided by the design geotechnical engineers and interacting with the WVDOT geotechnical engineer and project manager. The Corridor D project is a 10 mile segment of highway near Parkersburg, West Virginia. In addition to the 10 miles of new highway, the project includes 20 bridge structures, including a 4,000 ft. long bridge over the Ohio River, the Blennerhassett Island Bridge. (2001-2004)

**I-81 over Route 45 and Route 901 over I-81, Martinsburg, WV.** Project Manager for geotechnical investigations and analysis for two bridges near Martinsburg, West Virginia. Route 901 is a widening of the bridge and the approach roadway. Route 45 is a lengthening of the bridge. Foundations will consist of steel H-piles bearing on the limestone and dolomite bedrock.

**Millville Quarry, Millville, WV.** Senior Geotechnical Engineer provided on-going peer review of hydro-geologic study to determine the flow mechanism and path of water entering the quarry from the



Shannondoah River. Also provided recommendations for additional studies to determine the most cost effective and practical solutions for slowing and/or stopping the flow, as well as mean to minimize the risk of future flooding during the quarrying operations.

**Principal Geotechnical Engineer, Lake Linganore Dam, Frederick, MD.** Provided constructability review for designed modifications to the existing spillway and dam. Also assisted with preparation of final design drawings, specifications, bid documents, and bid evaluation. Provided project oversight during construction of the modifications, including: review of submittals, review of contractor's invoices, part time site monitoring of construction, oversight of others performing part time site monitoring of construction, conduct site meetings with owners and contractor, interaction with State Dam Safety, and consultation as required. (Ongoing)

**Mississinewa Dam, Peru, IN.** Senior Engineer provided geologic and grouting consultation to Bencor - Petrefond who was contracted by the U.S. Army Corps of Engineers to install a concrete cutoff wall at the Mississinewa Dam. The cutoff wall was designed to be 2600 feet long, along the crest of the dam and extending from the outlet works to the right abutment (looking downstream). Bencor-Petrafond experienced the sudden and complete loss of slurry during the hydromilling of the Liston Creek formation in the initial test section panels. Following our consultation and meetings with the Corps, the Corps choose to let a separate contract to grout the Liston Creek formation in advance of the construction of the concrete cutoff wall.

**Upper Merion Water Treatment and Pump Station, Upper Merion, PA.** Project manager for a Geotechnical investigation in carbonate rock formation. Recommendations included mat foundations for the in-ground tanks and pump vaults and oversize spread footings on structural fill to support the legs of the elevated tanks. Project also included design and construction of settling lagoons for the backwashing of the filters. Provided construction monitoring services. Provided on-site consultation for repair of a sinkhole which developed under one of the lagoons during construction.

**Project Manager, King's Grant Recharge Basins, Evesham, NJ.** Senior engineer for the geotechnical and groundwater investigations of two existing recharge basins, adjacent to wetlands, to determine the infiltration capacity of the existing basins and the potential infiltration of additional adjacent basins. Responsibilities included installation of test borings/monitoring wells, a large scale drawdown test of one of the basins, groundwater modeling of the entire system using MODFLOW, and stability analysis of the existing dikes. Also assisted the client by reviewing the groundwater modeling provided by the developer of some adjacent housing.



## **John J. Smelko**

*Office Manager and Environmental Staff Scientist*

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### **Areas of Expertise**

Decontamination and demolition  
Construction quality assurance  
Site management  
Environmental health and safety

### **Years of Experience**

With URS: 13 Years  
With Other Firms: 7 Years

### **Education**

BS/Applied  
Mathematics/University of  
Pittsburgh/1989

### **Overview**

Mr. Smelko is currently serving a dual role for URS. He is Office Manager of the Charleston, WV office and also Project Manager and Environmental Staff Scientist specializing in decontamination and demolition projects. He has a very strong background in Construction Quality Assurance (CQA) work and associated Site Management, Environmental Field Sampling/Chemistry Work, Environmental Health and Safety, Technical Writing, and Organic/Inorganic Data Validation. He has been in the environmental field for 20 years and has managed and trained employees in the key performance areas listed below.

### **Project Specific Experience**

#### **URS Charleston, WV Office Manager**

Currently managing a staff of transportation and environmental engineers. In addition to managing environmental projects, office employees report both functionally and administratively through Mr. Smelko. Primary duties include office sustainability through quality workmanship and local/regional market development with the intent to grow the office both in size and revenue.

#### **Environmental Science Experience:**

- Assistant Project Manager and Site Manager on a multi-million dollar decontamination and demolition project for a major chemical manufacturing corporation. Specifically providing technical support on scoping activities and acting environmental health and safety leader for the project.
- Hazardous Waste Site Work – Site Manager and Project Chemist on numerous hazardous waste projects including work for PA Department of Environmental Protection: Tri-State Wholesale Oil Company Site, Mattes Sandblasting Site, and Superior Dry Cleaning Site. Primary work involved hazardous waste characterization and disposal as well as general site clean-up in order to mitigate potential threats to human health and the environment.
- Health and Safety Officer for a US Army Corps of Engineers Demolition Project (\$17-18 Million Project) – Managed a multi-lingual work force of 150, managed Lock-Out/Tag-Out and Hot Work Programs, interfaced with the client, conducted health and safety meetings, developed work practice modifications as necessary, and performed general health and safety oversight.
- Oil Industry Client – Provided construction quality assurance oversight of geosynthetic liner system installation for a stormwater treatment pond and wrote the associated certification report.



### **Specialized Training**

Hazardous Waste Operations and Emergency Response Training  
HAZWOPER 8-Hour Refresher Training  
Troxler Nuclear Density Gauge Safety Training  
Niton XRF Safety Training  
Confined Space Entry Training  
CPR/First Aid Training  
Winning Proposal Workshop  
Asbestos Abatement Supervisor – WV License  
Apollo Root Cause Investigation Training

### **Chronology**

1993-Present: URS Corporation, Charleston, WV  
1986-1993: Keystone Environmental Resources, Inc.

### **Contact Information**

URS Corporation  
#4 Mission Way, Suite 201  
Scott Depot, WV 25560  
Phone: 304.757.6642 ext. 103  
Fax: 304.757.1677  
Email: john\_smelko@urscorp.com



## **V. Marcus Lowery, P.E., P.L.S.**

*Senior Engineer and Lead Surveyor*

### **Areas of Expertise**

Roadway & Drainage Design,  
Civil/Site Development Design  
Route Location Surveys  
Property & R/W Surveys

### **Years of Experience**

With URS: 1 Year  
With Public Entities: 8 Years  
With Private Firms: 6 Years

### **Education**

BS/Civil Engineering/1993/North  
Carolina State University

### **Registration/Certification**

1999/PLS/NC/PLS#: L-4002  
2002/PE/NC/PE#: 27418  
2007/PE/PA/PE074797  
2007/PLS/PA/002015(Temp.)

### **Overview**

Mr. Lowery has over 14 years of experience in the Transportation/Highway & Civil/Site Engineering fields. Mr. Lowery has worked for both the public and private sectors performing Project Management and Design Engineering. Mr. Lowery served as Project Manager/Senior Engineer for NCDOT, municipal, railroad, and private clients. Mr. Lowery is responsible for establishing and maintaining budgets and schedules, preparing and sealing final construction plans, engineer's estimates, project special provisions, and final survey plats. Mr. Lowery was also involved in client relations through scoping and negotiating for new projects.

### **Project Specific Experience**

**Dithridge Street Waterline Improvements, Pittsburgh Water & Sewer Authority (PWSA), Pittsburgh, PA.** Survey Project Manager for route-location surveys for a major waterline replacement project running approximately 2000 linear feet and covering 9 acres from the Pump Station at Dithridge St. and Center Ave. to the Herron Hill Reservoir at the top of Herron Hill. Mr. Lowery worked as the Survey Project Manager for the project, performing the duties of field survey and CADD fee estimates, overseer of all field survey work, office computations, and CADD work.

**Mon-Fayette Expressway, Pennsylvania Turnpike Commission, Pittsburgh, PA.** Senior Technical Reviewer with other consultants to design this complicated I-376 and Mon-Fayette Expressway interchange in Oakland. URS has been tasked, among other things, with structure design, geotechnical design, utility conflict design, and storm drainage design. Mr. Lowery served as Senior Technical Reviewer for the drainage design for Design Field View plan submission. He also performed preliminary cost estimates for drainage quantities.

**Hallelujah Acres Site (Mixed Use Development), Hallelujah Communities, LLC, Shelby, NC.** Project Manager/Senior Design Engineer for the project team consisting of an Architect, Landscape Architect/Land Planner, Structural Engineer, Mechanical Engineer, Electrical Engineer, Construction Manager, and Interior Designer. Mr. Lowery was the primary point of contact for TGS Engineers (his former employer). Prior to leaving the firm, Mr. Lowery was involved in project planning, contract negotiations, boundary and topographic surveys, preliminary horizontal, vertical, and grading design, and the public agency review and buy-in process.

**Park Crossing Subdivision, WNC Holdings, LLC, Rutherfordton, NC.** Worked as the Land Planner, Civil Engineer, and Land Surveyor of



record on a project team consisting of the Owner/Developer, Home Builder, Grading Contractor, and Real Estate Agency. Mr. Lowery was the primary point of contact for TGS Engineers (his former employer). Prior to leaving the firm, Mr. Lowery was the key player in the boundary and topographic surveys, subdivision layout and design, mass-grading and erosion control plans, waterline plans, sanitary sewer plans, and the public agency review and buy-in process.

**Magnolia Plantation (Mixed Use - Planned Unit Development), Magnolia Partners, LLC, Shelby, NC.** Worked as the Land Planner, Civil Engineer, and Land Surveyor of record on a project team consisting of the Owner/Developer, Home Builder, Grading Contractor, and Real Estate Agency. Mr. Lowery was the primary point of contact for TGS Engineers (his former employer). Prior to leaving the firm, Mr. Lowery was the key player in the boundary and topographic surveys, subdivision layout and design, mass-grading and erosion control plans, waterline plans, sanitary sewer plans, and the public agency review and buy-in process.

**TIP#: I-3819 (I-40 & I-77 Interchange), North Carolina Department of Transportation, Statesville, NC.** TGS Engineers performed Hydrographic & Drainage Surveys on 13 miles of Interstate/Side Roads for a project planned to re-work a major interstate interchange. Mr. Lowery served as Survey Project Manager for this project responsible for scoping and negotiating man-hours, providing bi-weekly progress reports, overseeing project mapping, and project deliverables.

**TIP#: I-4411 (Intersection of I-77 & SR 1102), North Carolina Department of Transportation, Mooresville, NC.** TGS Engineers performed Condemnation Surveys for nine (9) parcels affected by this proposed interchange project. Mr. Lowery served as the Record Surveyor for this project responsible for Condemnation Survey Exhibits for court proceedings.

**TIP#: U-3812 (NC 88 from NC 194 to US 221), North Carolina Department of Transportation, West Jefferson, NC.** TGS Engineers performed complete Route Location/Existing Conditions Surveys for 2 miles of two-lane roadway to be re-aligned and widened. Mr. Lowery served as Survey Project Manager for this project responsible for scoping and negotiating man-hours, providing bi-weekly progress reports, overseeing project mapping, and project deliverables.

**TIP#: R-2233AA&AB (US 221 from SC State Line to US Hwy 74 ), North Carolina Department of Transportation, Rutherford County, NC.** TGS Engineers performed complete Route Location/Existing Conditions Surveys for 9 miles of two-lane roadway to be re-aligned and widened. Mr. Lowery served as Survey Project Manager for this project responsible for scoping and negotiating man-hours, providing bi-weekly progress reports, overseeing project mapping, and project deliverables.



## Romaine K. Kesecker, RLA, ASLA

Senior Landscape Architect

### Areas of Expertise

Landscape Architecture  
Streetscaping  
Multimodal Transportation  
Environmental Impacts  
Environmental Mitigation  
Recreation Planning  
Neighborhood Conservation  
Visualization and Aesthetics  
Construction Documentation  
Construction Period Services

### Years of Experience

URS: 9 years  
Other Firms: 21 years

### Education

BSLA/1978/ cum laude/  
Landscape Architecture/  
West Virginia University

- Bicycle and Pedestrian Planning and Design
- Context Sensitive Design for Highways
- Mike Lin Graphics
- ASLA Annual Meetings
- State licensure continuing education

### Registration/Certification

- 1984/Landscape Architect/  
Virginia Certified, No. 192
- 1989/Landscape Architect/  
Maryland Registered, No. 886
- 1999/Landscape Architect/  
Pennsylvania Registered, No. 1594
- 2001/Landscape Architect/  
Delaware Registered,  
No. S1-0000300

### Overview

Mr. Kesecker's responsibilities as a Senior Landscape Architect include project management, master and site planning, site-specific design, construction documentation, cost estimation, environmental mitigation and restoration, and other design and construction period services. He is involved in all aspects of transportation-related projects, traffic calming, recreation and park design, multi-use trails, and site development. Project types include military, federal, state, and local governmental, commercial, large-scale residential, transportation, and more. His designs integrate pedestrian, bicycle, and vehicular facilities into the design for benefit to motorists, transit users, pedestrians, bicyclists, and for accessibility.

A registered Landscape Architect since 1984, Mr. Kesecker has significant expertise in all phases of design services and has successfully completed numerous projects that required planning, design, development, landscape strategies, neighborhood conservation, public presentations, visualization renderings, value analysis, and natural resource planning, and aesthetics. He has proven experience in construction document preparation, including hardscapes, roadway, structures and bridges, utility coordination, landscape design, ADA, specifications and cost estimation. He is involved in coordinating environmental permits and forest conservation and other requirements related to environmental impacts of a proposed design. He is experienced in management and oversight of technical activities for projects including quality, schedules, budgets, and client liaison; management of staff and maintenance of group utilization; and coordination with other disciplines and subconsultants.

### Project Specific Experience

**John's River Stream, Town of Whitefield, New Hampshire.** Landscape architect for design and technical stream bank stabilization and NH DES review for Dredge and fill 20,000 SF (impacting approximately 846 linear feet) within the bed and banks of the John's River to partially remove an existing deteriorated dam, remove contaminated sediment, construct a rock ramp, and to stabilize eroding banks. Planting plan included native upland species (non-hydrophytes) on the middle and upper bank, willow species along the lower bank and stream, and the landscape plan provided ornamental and native plant materials on adjacent property. Design: 2004/Construction: 2006.

**Hebardville Wetland Mitigation and Stream relocation, Hebardville, Ohio.** Wetland mitigation construction documents for creation of 4.9 acres of new Scrub Shrub, Obligate Emergent and FACW Emergent wetland, and stream restoration including rechannelization, wetland creation, and bank stabilization. Included grading and layout, planting of wetland, stream bank, and flood plain, and cost estimation. Design: 2003/Construction: 2004.



**SR 6220, Centre County, PA.** Landscape design for phase one of a new addition to I-99. Included berm planting design for over 2,500' of screen berm adjacent to a residential area and landscape design for a wildlife crossing tunnel of 200' in length to allow deer to pass under the highway. Provided design for landscape screening design for the Matternville Elementary School. Design: 2004/Construction: 2006.

**SR 0202-Sections 403, 404 and 405, King of Prussia, PA.** Amenity design for various phases of roadway improvements for Pennsylvania Dept. of Transportation (PennDOT) in Chester and Montgomery Counties. Landscape plans included bid tabulation, construction documents, cost estimates and revisions per PennDOT review. Design: 2003/Construction: 2006.

**SR 222-001, Lehigh County, PA.** Landscape, planting, and reforestation design associated with environmental and screening issues related to the Breinig Historic Property adjacent to Pennsylvania Dept. of Transportation's proposed overpass of SR 100 at SR 222, and the Sarah Stettler Historic Property in the same corridor. Design: 2002/Construction: 2006.

**Landscape Maintenance Manual, MD 140 at I-695 and Beltway Widening Projects, SHA, Baltimore, MD.** Prepared the first Landscape Maintenance Manuals for State Highway Administration's (SHA) Landscape Architecture and Landscape Operations Divisions. The manual's purpose is to provide design continuity in the future, after Plant Establishment Period by the contractor, for SHA to budget for and provide the commitment to the maintenance as originally intended. The manual assisted the SHA by documenting details of the design, recommended maintenance practices such as mowing limits, time for fertilization and pruning, and additional watering. Cost estimation for this 5-year plan assisted SHA to budget for success. Design: 2002/Construction: 2005.

**Value Engineering for U.S. Dept. of State.** Team member providing site planning and design and landscape architectural value engineering services for proposed embassies in Mali, Panama, Ecuador, Serbia, Tajikistan and others. Participated in constructability reviews of design drawings and specifications, and assisted OBO/PE/DE with value engineering analyses during their preparation, and participated in value engineering studies and attended Architectural Advisory Board design presentations. Performed studies of each site regarding all aspects of construction design, layout, and perimeter and force protection design. The value engineering incorporated and addressed cost issues, including recommendations for possible design revisions to implement the design and reduce construction costs. Design: ongoing/Construction: ongoing.

**Rocky Pen Run Reservoir, Stafford County, VA.** Landscape design for new areas of pump stations, including reforestation plantings, bioretention, and stormwater management facility treatments. Considered aesthetic treatments and views from river (for canoeists). Design: 2006/Construction: TBD.





## **Eric L. Nilson, P.E.**

*Senior Engineer*

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### **Areas of Expertise**

- Engineering Feasibility Studies;
- Conceptual design of industrial water, cooling, wastewater treatment facilities;
- Process Design Engineering including process flow diagrams, heat and material balances, equipment sizing and selection, P&IDs, instrumentation design & analysis, operation & maintenance manuals and trouble shooting of existing treatment systems.
- Pumping system/piping system design, and hydraulic analysis for pressure and gravity systems.
- Stormwater Management, hydrology, computer modeling, storm sewer design, treatment.

### **Education**

B.S./1970/Biology /Juniata College

M.S./1976/Environmental Pollution Control/  
B.S./1978/Environmental Engineering/Penn State University/

### **Overview**

Mr. Nilson has more than 30 years of engineering consulting experience focusing on industrial and municipal water and wastewater engineering, air quality, and solid waste management. Mr. Nilson has extensive experience in the entire range of engineering activities, encompassing feasibility studies, field surveys and characterizations, and bench/pilot scale treatability studies. Process design experience includes: development of process flow diagrams, with computerized heat and material balances, equipment selection and sizing, P&IDs, instrumentation design and analysis and preparation of operation and maintenance manuals, in addition to trouble-shooting of existing treatment facilities.

### **Summary of Career Project Experience**

**Longview Power, Madsville, WV** – Design of potable water, stormwater and process wastewater treatment facilities for new coal-fired power plant.

**Allegheny Energy Pleasants Station** – Process evaluation for modernization of makeup water treatment system for boiler water facility. Process design for treatment of plant stormwater and cooling tower blowdown to meet new, tightened NPDES effluent limitation.

**BP Petroleum** – Detailed design of Isoc oxygen injection system for groundwater remediation. System was hardened to allow location under a state highway.

**PaDEP** - Process evaluation of disposal options for process fluids and wastewater at the abandoned Westfield Tannery site.

**Siemens Government Services** – Stormwater management update for a large US Government facility. Hydrologic modeling of entire site to determine stormwater management changes after a large building program. Erosion and sediment pollution control planning for site expansion. Process design of emergency water system at same site.

**Double Eagle Steel Coating Company** - Process evaluation and design, supervision of detailed engineering and construction supervision for an electrolyte filtration system at the world's largest electro-galvanizing plant.

Evaluation and corrective action plan for plant wastewater treatment systems. This work involved treatability studies and development of improved pH control systems.

**Borough of Tarentum** - Complete rehabilitation of water treatment plant with an upgraded process to reduce soluble aluminum, new high pressure pumping system and new plant controls.



**Municipality of Monroeville** – Completed numerous infiltration & inflow studies on sanitary sewer systems. Completed development of rehabilitation plans as required.

Additional project work was done to eliminate sanitary sewer overflow structures.

Conducted review and approval of all storm water management and erosion and sedimentation plans submitted to the Municipality and Planning Commission by developers.

Developed the Municipal Separate Storm Sewer (MS4) program for the Municipality including: writing the current MS4 Ordinance, preparing the NPDES storm water permit application, and developing the storm water management monitoring program.

**Upper Allegheny Sanitary Authority** - Design and installation of new belt filter press.

Completed correction of flow distribution imbalance for secondary clarifiers, and also made various control improvements.

**PPG Industries, Inc.** - Groundwater treatment project at Circleville plant. Various process alternatives were explored for treatment of groundwater contaminated with organic materials, which could not be treated by conventional biological technology.

**Davy-McKee Environmental** - Process design for groundwater remediation system for the LaSalle Electric Utilities site. This included all process flow sheets, P&IDs, equipment sizing and preliminary layouts.

Completed the review and critique of the groundwater treatment system at the Helen Kramer, NJ superfund site.



## Timothy King, PG

*Department Head*

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### Areas of Expertise

- Engineering Geophysics
- Engineering Geology
- Remedial Investigations
- Unexploded Ordnance Detection
- Instrumentation
- Tunnels
- Landfills

### Years of Experience

With URS: 19 Years

With Other Firms: 2 Years

### Education

BS/Geology/1988/University of Maryland

### Registration/Certification

1995/Professional Geologist/PA (PG001254-G)

### Overview

Mr. King has built and is the leader of a geophysical services team in the Gaithersburg, Maryland office. The team consists of three staff ranging with experience levels ranging from junior to senior-level. As team leader Mr. King's management responsibilities include hiring, mentoring, technical oversight, scheduling and performance reviews. Mr. King's experience includes engineering geology, engineering geophysics, and hydrogeology applied to site investigations to evaluate subsurface conditions related to dams, landfills, buildings, hazardous waste sites, highways, mines, tunnels, and waste disposal facilities. He has been responsible for technical and management aspects of investigations at more than 200 sites across the United States. Mr. King has expertise in the application of geophysics to engineering and environmental problems. Geophysical methods he routinely utilizes include microgravity, electromagnetics, seismic refraction, resistivity, ground penetration radar, geophysical borehole logging, and downhole seismic surveying.

Mr. King has extensive experience with numerous engineering geology investigation tools, including geologic mapping, soil and rock core sampling and logging, pressuremeter testing, test pit studies, permeability testing, site reconnaissance, monitoring well installation, aquifer pumping tests, stream gauging, and soil gas studies. He also has extensive experience in underground construction and geotechnical instrumentation.

### Project Specific Experience

**Field Geologist, Graybull Dam Design Study, Graybull Irrigation Authority, Wyoming.** As part of a siting and design study for an irrigation water supply reservoir dam, conducted investigations to evaluate subsurface conditions including soil borings, rock corings, pressuremeter testing, test pits, geologic mapping, and seismic refraction surveying.

**Project Geologist, Aligidir Irrigation Reservoir Design Investigation, Eritrea, Africa.** As part of the design study of a large off-stream storage irrigation reservoir that included a diversion dam, sediment trap, and extensive canal and embankments conducted geologic mapping and intrusive investigations to characterize geologic/geotechnical conditions.

**Project Manager, I-70 Geophysical Investigation, Maryland State Highway Administration, Frederick, Maryland (2004).** Conducted extensive electrical imaging surveys to delineate subsurface features indicative of sinkhole formation and land subsidence beneath existing and proposed highway structures.

**Project Geophysicist, Remedial Investigation, Indiana Army Ammunition Plant, U.S. Army Corps of Engineers, Indiana.** Designed and managed electrical resistivity imaging surveys to characterize subsurface conditions and identify preferential pathways for migration of contaminated ground water. Project responsibilities



included data collection, processing, and interpretation.

**Project Geophysicist, Geiger Field Remedial Investigation, Spokane, Washington.** Designed and conducted extensive electromagnetic surveys to detect and delineate buried wastes, and underground storage tanks and associated piping systems.

**Project Geophysicist, Environmental/Geologic Assessment, CBC Industrial Facility, Hagerstown, Maryland.** As part of a Remedial Investigation of a large industrial facility located in karst terrain, designed and conducted a geophysical feasibility study to evaluate subsurface conditions related to groundwater contamination. Geophysical methods utilized included electromagnetics, resistivity, ground penetrating radar and magnetics. The investigations successfully detected and delineated a solution lineament suspected to be a preferred pathway for migration of contaminated groundwater.

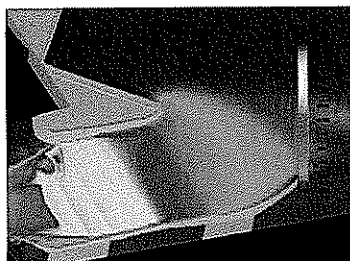
**Project Geologist, Lake Sedimentation Study, Maryland National Park and Planning Commission, Lakes Needwood and Frank, Montgomery County, Maryland.** Designed and conducted bathymetric and intrusive investigations to evaluate the extent and physical characteristics of sediments accumulating in two relatively large flood control/recreational use lakes. The results of the investigation were used to estimate the life expectancies of the lakes and to develop dredging and spoils disposal alternatives.

**Field Geologist, Smith Lake Dam Design Study, Stafford County Government, Virginia.** As part of the design for the retrofit and raise of an earthen dam, conducted investigations to evaluate subsurface conditions, including soil borings, pressuremeter testing, test pits, geologic mapping, wetland evaluation, and seismic refraction surveying.

**Project Geophysicist, Power Generating Facility Siting and Feasibility Study, Confidential Client, Flint Hill, Tennessee.** Designed and managed an extensive electrical resistivity imaging survey to delineate subsurface features indicative of sinkhole formation and land subsidence at a proposed power facility underlain by karstic limestone bedrock.

**Project Geologist, I-270 Tunnel Crossing for Monocacy Interceptor, Frederick, Maryland (1994).** Geotechnical investigation and tunnel construction methods analysis in connection with a differing site condition claim for a 72-inch diameter tunnel in soft ground crossing beneath I-270 near the Monocacy River.

**Project Geophysicist, Aberdeen Proving Grounds Hydrogeologic Investigation, U.S. Army Corps of Engineers, Baltimore District, Aberdeen, Maryland.** As part of a groundwater contamination investigation, conducted borehole geophysical logging to provide information relative to stratigraphy and to aid in design of monitoring wells. Borehole methods utilized included downhole seismic (compression and shear wave), resistivity, natural gamma, self potential, caliper, conductance, and temperature.



FLOW-3D uniform flow

## South River 25 (Tom's Branch) Dam Modifications, NRCS

### Project Description

South River 25 project was constructed in 1957 as a PL 566 NRCS structure for the purpose of protecting downstream lands from flooding. The project consists of an earth dam with a height of 60 feet (ft), and crest length of 1,110 ft. The principal spillway consists of a standard square one-stage baffle riser with a height of about 14 ft high and a 371 foot long, 24 inch diameter reinforced concrete pipe (RCP) conduit. The auxiliary spillway is located along the dam's left abutment with a width of 200 feet. The auxiliary spillway is capable of managing 60 percent of the Probable Maximum Flood (PMF).

South River 25 was constructed as a low hazard dam, however, since 1957 the dam has been reclassified to high hazard structure due to construction of houses and businesses built in the breach zone after construction of the dam. Due to this change in hazard classification, South River 25 no longer meets the dam safety and performance standards of NRCS and the Virginia Department of Conservation and Recreation (DCR) Division of Dam Safety.

Under an indefinite delivery indefinite quantity (IDIQ) contract with the NRCS in Richmond Virginia, URS was tasked to prepare final design drawings and specifications for dam rehabilitation. URS performed site soils and geotechnical investigations and field surveys. Seven alternative designs were evaluated for increasing the auxiliary spillway capacity to pass the PMF flood event. The alternatives analysis was submitted on a 35% final design plans and accompanying design folder. The selected alternative involved raising the dam 2 feet, widening the earthen spillway to 300 feet and using Turf Reinforcement Mats (TRM) to line the spillway.

After authorization-to-proceed to 95% design plans, the NRCS and Sponsors requested two additional alternatives to shift the existing auxiliary spillway into the existing dam embankment footprint and to develop an advanced hydraulic model of the auxiliary spillway. The advanced hydraulic modeling was performed using the FLOW-3D model to eliminate the NRCS requirement of a splitter dike and to confirm the presence of uniform flow in the control section and exit channel. The FLOW-3D modeling resulted in the elimination of the splitter dike and led to design changes to the spillway geometry and training dikes.

URS prepared the 95% design plans in an accelerated 46 day schedule without requests for additional time to study the additional alternatives. The project is currently under review and URS is committed to delivery of 100% design plans and specifications within 14 days of receipt of comments. URS is scheduled to provide construction support services for this \$2M rehabilitation plan in 2009.

### Location

Augusta County, VA

### Services

Design, Alternatives Analysis,  
Permitting Support, Construction  
Drawings and Specifications,  
Construction Administration

### Client

Headwaters Soil and Water  
Conservation District

### Project Value

Total: \$2M  
URS Fee: \$324,000

### Project Duration

Construction anticipated 2009



## I-70 – Geotechnical Engineering

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### Project Description

The project site is located immediately south of the City of Frederick, Frederick County, Maryland. This project is part of a larger I-70 roadway improvements project that consisted of adjusting the vertical profile and adding new travel lanes along I-70 as well as incorporating frontage roads and interchange improvements. Within the two mile project corridor, I-70 is a divided, dual lane, limited access highway with a design year Average Daily Traffic (ADT) of 110,100 and frontage road ADT averaging 33,000. Sinkhole activity has occurred in the project area since 1970. In 1985, 13 sinkhole locations were identified and by 2001, 138 sinkholes were reported with approximately 70 percent of the sinkholes occurring within 1000-ft of I-70 and the associated frontage roads. Sinkholes along the project corridor are cover-collapse type and range from three feet to more than 50-ft in diameter. An aggressive sinkhole occurrence rate that averages approximately 8-sinkholes per year continues to threaten the existing roadway system.

A significant task in the geotechnical engineering efforts involved the control of stormwater runoff utilizing a geomembrane polymeric barrier material along drainage ditches and within three storm water management (SWM) ponds. The project utilized three SWM facility locations, designated as Pond A, Pond B and Pond C. In particular, Pond A is the largest known SWM facility in Maryland with a storage capacity of 159.6 acre-feet. Pond A required embankment to support the vertical profile of Monocacy Boulevard as well as to create the necessary water storage for Pond A. This embankment created a dam and classified the structure as a high-hazard dam, since if breached, the water would flow into the City of Frederick. Pond A combined with Pond B will store 185.2 acre-feet at overflow elevation. Pond A design incorporates substantial landscape features, including a wet pool, as part of a gateway feature to the City of Frederick. Extensive slope stability analyses were performed for the cover soils. Two pump stations pump the storm water through a 1.1-mile long force-main system and into an existing creek north of the project site.

### Location

City of Frederick, Maryland

### Services

Geotechnical Engineering, Dam Engineering, Geosynthetic Design

### Client

Maryland State Highway Administration

### Cost – Entire Project

\$35,000,000

### Cost – URS Portion

\$35,000,000

### Completion Date

2008

### Project Owner

Maryland State Highway Administration  
Office of Highway Development  
707 North Calvert Street, Mailstop C-102  
Baltimore, MD 21202

### Point(s) of Contact

Mr. Barry Kiedrowski, PE  
410.545.8769

### URS Project Staff/Office Location – Role

Hunt Valley – Civil and Geotechnical Engineering  
Pittsburgh – Geotechnical Engineering

**TERRY W. SCHMIDT, P.E.**  
Vice President, Engineering



**EDUCATION:**

M.S., Mining Engineering, 1994, The Pennsylvania State University  
B.S., Mining Engineering, 1985, The Pennsylvania State University

**PROFESSIONAL REGISTRATIONS:**

Professional Engineer, PA, NC, TN, VA, MD, OH

A leading authority on mine reclamation practices including the treatment of acid mine drainage (AMD), Mr. Schmidt has served as Engineer-In-Charge of many assessment and mitigation projects. Mr. Schmidt's responsibilities have included directing the development and implementation of comprehensive field investigations, managing the data evaluation process, determining Best Available Technologies (BAT), developing engineering design packages, obtaining necessary permits, supervising construction inspection activities, and overseeing long-term monitoring and system operation and maintenance requirements.

As a result of his extensive experience, Mr. Schmidt has developed a unique understanding of the interrelationships between active and abandoned mine complexes, water quality, particularly pH and elevated metal concentrations, local geology and hydrogeology, and flow rates and their impact on the selection of the most appropriate abandoned mine reclamation practices. In addition to his project responsibilities, Mr. Schmidt is a well-published author on AMD issues. He has presented his technical papers at professional conferences held throughout the United States.

**PROFESSIONAL EXPERIENCE**

**Valley Point #12, West Virginia** – Evaluated AMD treatment alternatives and designed treatment system in Preston County under a contract with Friends of Deckers Creek. The design effort included: capture of the discharges at the Portal Locations; developing provisions for unexpected blowout of the mine pool; **conveyance pipes, culverts, and channels**; treatment ponds; regrading; and revegetation. The system was constructed in 2008 under the construction supervision of West Virginia AML personnel with Skelly and Loy oversight.

**Porter Tunnel, Pennsylvania** – Assisted in the management of 15,000 acres of active and abandoned mine lands in Schuylkill County, Pennsylvania for Rausch Creek Land. The management activities included thousands of acres of abandoned mine lands as well as a dozen active surface and underground mine permits. As part of this effort, a wet mine seal was designed for the Porter Tunnel as well as two conventional mine seals at associated air shaft and access points to the mine. The **wet seal including a 54 inch steel pipe extending 500 feet into the mine opening**. The mine opening was accessed from the surface using a drill and a flowable fly ash/Portland cement mixture was used to structurally strengthen the mine opening below State Route 209. The project also included the design of an active treatment system for the discharge.

**Blackleggs Creek, Pennsylvania** – Evaluated AMD treatment alternatives and designed treatment systems in Indiana County under a contract with Blackleggs Creek Watershed Association. Four treatment systems were designed: Kolb; Big Run #2; Big Run #7; and Big Run #8. Treatment systems included the **design of four wet mine seals at portal locations**, one at each treatment system. Flow rates from the portals ranged from hundreds of gallons per minute (gpm) to several thousand gpm. The design effort included: wet mine seals; developing provisions for unexpected blowout of the mine pool; conveyance pipes, culverts, and channels; treatment ponds; regrading; and revegetation. The Kolb system was constructed in the early 2000's, followed by Big Run #2, Big Run #7, and Big Run #8 which is scheduled for completion in 2009. Construction activities have been completed each construction season in a logical and sequential manner with construction supervision completed by Skelly and Loy.

**Cold Stream, Pennsylvania** - On behalf of the Woodduck Chapter of Trout Unlimited with funding provided by Pennsylvania's Growing Greener program, Mr. Schmidt managed the design and construction of an acid mine drainage treatment system. Based on a **thorough evaluation of site conditions and water quality data**, he designed a Vertical Flow Reactor (VFR) to treat the main AMD seep known as "Chiller Seep". Components of

the system include a layer of compost to strip oxygen followed by contact with limestone to impart alkalinity. The net alkaline water is then routed through pond and wetland cells for precipitation of metals. The system also includes a passive flushing technology for removal of aluminum.

**Hubler Run, Pennsylvania** - Evaluated AMD treatment alternatives for this tributary to the Susquehanna River under a contract with The Freshwater Institute, an arm of The Conservation Fund. Project activities included **comprehensive field investigations, data evaluations**, and engineering design package preparation. Engineered a passive, periodic flushing system that maintains the hydraulic conductivity and treatment performance of an open limestone pond system. The treatment system consists of independent open limestone cells for alkalinity addition and two wetland cells in series for settling precipitated metals.

**Friedline Mine Site, Pennsylvania** - Currently directing the assessment and rehabilitation of an operating **passive AMD treatment system**. Managing the evaluation of water quality data, review of SAPS engineering drawings, and coordination with regulatory agencies. Supervising system restoration to include installation of an aluminum recovery loop, removal and replacement of iron/compost layer, inspection of limestone layer and replacement if necessary, upgrade of flushing system, and lining the outflow channel with limestone. Developed a plan to capture newly formed seeps and direct them to a new open limestone pond.

**Raccoon Creek, Pennsylvania** - Completed a **Watershed Abandoned Mine Drainage (AMD) Survey** and Preliminary Restoration Plan for the Raccoon Creek watershed located in western Pennsylvania. Working closely with local groups, concerned citizens and government agencies, Mr. Schmidt identified significant AMD discharge sources and quantified impacts to the watershed. As a result, remediation methods were identified and cost estimates were developed for future remediation actions for the seven highest prioritized AMD discharges.

**Keyser's Ridge, Maryland** - Rehabilitated two leachate treatment systems that had been installed to treat highway runoff and groundwater discharge from the embankment of U.S. Route 68. Responsibilities included evaluation of systems operations, **analyses of water quality data**, development of rehabilitation and operation and maintenance plans, supervision of construction, preparation of as-built drawings, and long-term monitoring of systems performance.

**Private Client, Pennsylvania** - Investigated **42 water discharge locations** from a large graphite producer which discharges a combination of acid mine drainage, industrial process wastewater, stormwater, and various other flows which enter the site. Conducted dye tests, performed flow measurements, implemented a sampling and testing program, prepared reports of findings, prepared an Industrial Process Wastewater NPDES Permit, and attended negotiation meetings with the State regulatory agency.

**Private Client, Tennessee** - Served as Principal Investigator in an **acid mine drainage assessment** in Tennessee. Conducted laboratory and on-site treatability studies to define effective chemical treatment approaches and assisted in the design of passive treatment systems. Defined and mapped groundwater basin recharge areas and evaluated the impacts of pumping activities on the regional groundwater flow. Evaluated the hydrologic impacts of the surface coal mine reclamation activities on the receiving streams.

**Private Client, Alabama** - Served as Principal Investigator in an **evaluation of chemical and passive treatment systems** for mine drainage in Alabama. Evaluated current treatment systems and suggested potential cost-effective improvements to existing and planned treatment systems. Conducted treatment studies for fluoride reduction in mine reclamation area runoff water. Two methods of fluoride reduction were studied in the laboratory: ion exchange and uptake by soil materials. Assisted in the design of the full scale treatment system using uptake by soil materials.

**Surface Mine Operator, Pennsylvania** - Managed and operated surface coal mines for W. Schmidt Coal Company in Pennsylvania for over four years. Responsible for all aspects of the day-to-day surface mining activities from property evaluation through job completion. As the mine operator, his duties included



**TERRY W. SCHMIDT, P.E.**  
**Vice President, Engineering**  
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implementation of drilling programs; permitting; erosion and sediment control planning; environmental compliance; mine planning; and reclamation. Also negotiated the sale of active permit areas as well as equipment rental and purchase agreements.

**Graduate Studies** - While working towards an M.S. in Mining Engineering at Penn State University, assisted in the development of the software package "REMINE." Responsible for writing the Basic computer code and associated user's manual sections for one module. "REMINE" is a commercially available software package used for Best Professional Judgment Analysis required by the Federal Clean Water Act to obtain a surface mining permit for remining of abandoned mine lands with pre-existing pollutorial discharges. "REMINE" was developed under the cooperation of the Environmental Protection Agency, the Pennsylvania Department of Environmental Resources, and Penn State University.

**PROFESSIONAL AFFILIATIONS:**

The Society of Mining Engineers of America - Institute of Mining Engineers  
The American Society for Surface Mining and Reclamation  
American Institute of Mining Engineers  
Penn Anthracite American Institute of Mining Engineers  
Acid Drainage Technology Initiative (ADTI)

**PUBLICATIONS**

"Evaluating Successes in Passive Treatment at Sequatchie Valley Coal Corporation in East Central Tennessee", presented at the 2001 National Meeting of the American Society for Surface Mining and Reclamation, Albuquerque, New Mexico, (principal author)

"Passive, Periodic Flushing Technology for Mine Drainage Treatment Systems", presented at the 2001 National Meeting of the American Society for Surface Mining and Reclamation, Albuquerque, New Mexico, (co-author)

"Prediction of Water Quality at Surface Coal Mines", published by National Mine Land Reclamation Center, Morgantown, West Virginia, 2001, (co-author)

"Assessment of the Applicability of an Anoxic Limestone Drain for a Surface Mine in East Central Tennessee", presented at the 1996 National Meeting of the American Society for Surface Mining and Reclamation, Knoxville, Tennessee, (principal author and presenter).

"Coal Remining Analysis for Maximum Resource Recovery and Environmental Improvement", Master of Science Thesis, The Pennsylvania State University, 1994.

"Remine: A Computer Program for the Analysis of Abandoned Mine Lands Projects in the United States": presented at the Surface Coal Mining and Reclamation Symposium in Alberta, Canada, 1988 (coauthor).