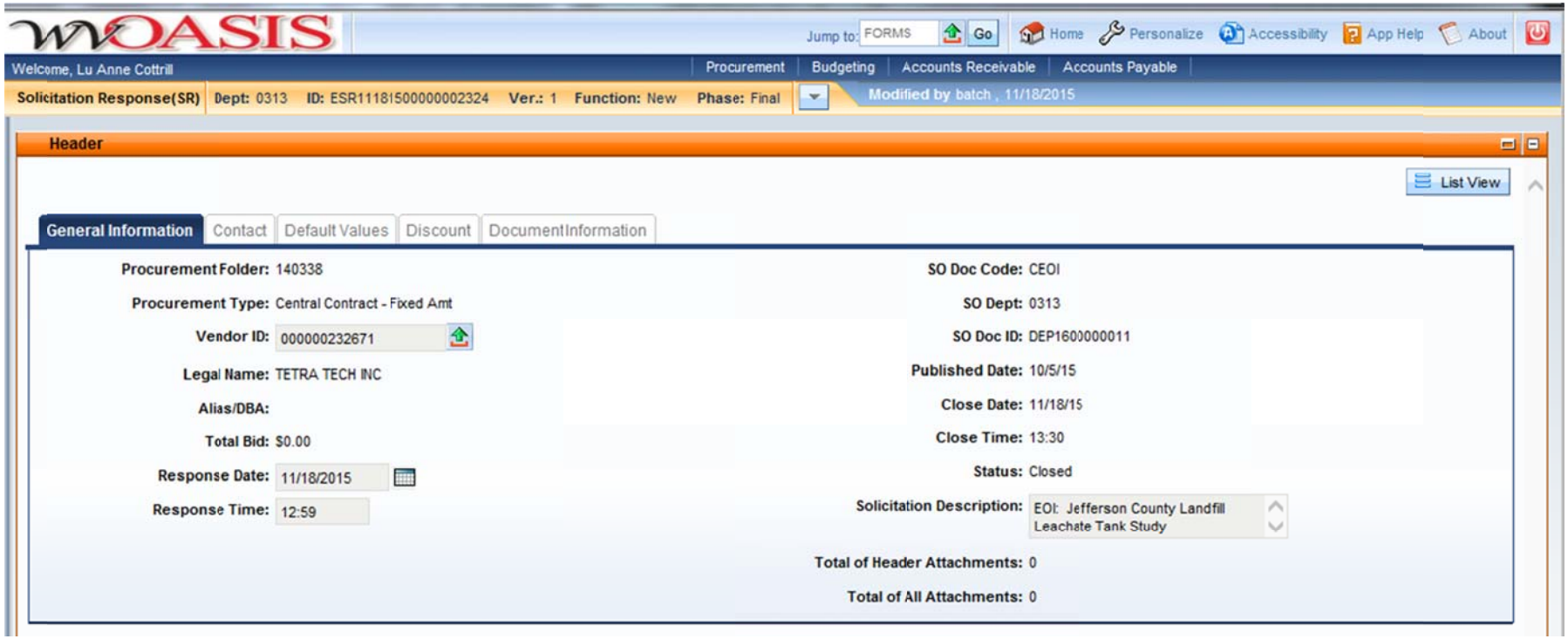
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.


WVOASIS
Jump to: FORMS Go
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About
Welcome, Lu Anne Cottrill
Procurement
Budgeting
Accounts Receivable
Accounts Payable
Solicitation Response(SR) Dept: 0313 ID: ESR11181500000002324 Ver.: 1 Function: New Phase: Final
Modified by batch , 11/18/2015
Header
List View
General Information
Contact
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Document Information
Procurement Folder: 140338
Procurement Type: Central Contract - Fixed Amt
Vendor ID: 000000232671
Legal Name: TETRA TECH INC
Alias/DBA:
Total Bid: $0.00
Response Date: 11/18/2015
Response Time: 12:59
SO Doc Code: CEOI
SO Dept: 0313
SO Doc ID: DEP1600000011
Published Date: 10/5/15
Close Date: 11/18/15
Close Time: 13:30
Status: Closed
Solicitation Description: EOI: Jefferson County Landfill Leachate Tank Study
Total of Header Attachments: 0
Total of All Attachments: 0

Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Solicitation Response

Proc Folder : 140338

Solicitation Description : EOI: Jefferson County Landfill Leachate Tank Study

Proc Type : Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation No	Version
	2015-11-18 13:30:00	SR 0313 ESR11181500000002324	1

VENDOR

000000232671

TETRA TECH INC

FOR INFORMATION CONTACT THE BUYER

Beth Collins

(304) 558-2157
beth.a.collins@wv.gov

Signature X **FEIN #** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Leachate Holding Tank Study,				$0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description : Leachate Holding Tank Study, Recommendation and Construction QA/QC for the Jefferson County Landfill per the attached specifications, bid requirements, and terms and conditions, incorporated here by reference and made a part hereof.

Expression of Interest

WV Department of Environmental Protection

Request for Qualifications: DNR1600000011

Leachate Holding Tank Study, Recommendations and Construction QA/QC for Jefferson County Landfill

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Tetra Tech, Inc.
(Company)

Mark P. Speranza
(Authorized Signature)

Mark P. Speranza, Operations Manager
(Representative Name, Title)

412-921-8916 412-921-4040
(Phone Number) (Fax Number)

11/18/2015
(Date)

TABLE OF CONTENTS

Section A: Cover Letter

November 18, 2015

Mr. Guy Nisbet
Department of Administration, Purchasing Division
2019 Washington Street East, Charleston, West Virginia 25305-0130

Dear Mr. Nisbet:

Tetra Tech is pleased to submit our qualifications to perform design services in reply to RFQ #DNR1600000011 for the State of West Virginia. As outlined in our proposal, Tetra Tech and its personnel have completed work on ***thousands of similar projects***.

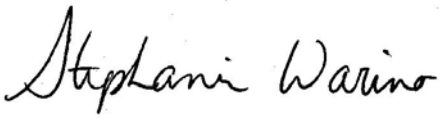
Based in Pasadena, CA, Tetra Tech is a full-service engineering and science firm with a substantial global presence. We help our clients conceptualize and execute innovative solutions to their most difficult problems. From front-end science and planning to design, construction management and operations, Tetra Tech's global service network, facilitated by our Initiatives program that coordinates resources for specific markets and provides best-in-class experts with worldwide project experience. They deliver a high level of integrated services for the full project life-cycle in five service areas: water, environment, infrastructure, resource management, and energy.

Tetra Tech has offices and operational infrastructure throughout the United States, Canada, and abroad. With 13,000 employees at 300 offices in more than 120 countries on six continents, Tetra Tech's technical knowledge and hands-on site work is broad and deep. Our staff is supported by a uniform administrative and management system that project teams can access immediately to ensure work is completed effectively.

Our experienced team is led by Mr. Tim Miller, PE. Mr. Tim Miller, PE has more than 30 years of experience and has managed or supported numerous landfill and tank-related projects. The proposed project team has significant landfill and leachate tank design and construction experience. **As a firm, Tetra Tech also has significant experience working for the State of West Virginia – for the WV DEP, WV DCH, and WV DOC.**

As requested by the RFP we have uploaded an electronic copy of our EOI onto the West Virginia Oasis website. We appreciate this opportunity to provide this proposal, and look forward to answering any questions you may have. If you should require any additional information, please contact Ms. Warino at (304) 534-4021.

Sincerely,



Ms. Stephanie Warino, WV LRS, PG
Fairmont, WV Operations Manager

Section B: Completed CQQ

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
CONSULTANT QUALIFICATION QUESTIONAIRE

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
Leachate Holding Tank Study, Recommendation and Construction QA/QC for Jefferson County Landfill	18, November, 2015	954660169

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
Tetra Tech, Inc.	Foster Plaza 7, 661 Andersen Drive Pittsburgh, Pennsylvania 15220	NUS Corporation NUS Environmental Corporation Brown & Root Environmental

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP INDIVIDUAL, CORPORATION, PARTNERSHIP, JOINT-VENTURE	6A. WV REGISTERED DBE (DISAVANTAGED BUSINESS ENTERPRISE)
(304)534-4021	1960	Corporation	NO

7. PRIMARY OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. (name particular type) PERSONNEL EACH OFFICE

Foster Plaza 7, 661 Andersen Drive, Pittsburgh, PA 15220 / (412) 921-7090 / Mr. Mark Speranza, PE / 186

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER-OTHER PRINCIPALS
Mr. Mark Perry, PE – President	Mr. Mark Speranza, PE – Vice President (412)921-8916

9. NUMBER OF PERSONNEL BY DISPLINE **(Bold Lettering Indicates Minimum Design Team Members)**
Detailed information On Team To Be Included

1066 ADNIMSIRATIVE	78 ECOLOGISTS	_ LANDSCAPE ARCHITECTS	_STRUCTURAL ENGINEERS
_ ARCHITECTS	_ ECONOMISTS	407 MECHANICAL ENGINEERS	56 **SURVEYORS**
416 **BIOLOGIST**	46 ELECTRICAL ENGINEERS	260 MINING ENGINEERS	7,629_OTHER
159 **CADD OPERATORS**	305 ENVIRONMENTALISTS	_ PHOTOGRAMMETRISTS	
318 CHEMICAL ENGINEERS	104 **ESTIMATORS**	_ PLANNERS: URBAN/REGIONAL	12,904 TOTAL PERSONNEL
465 **CIVIL ENGINEERS**	293 **GEOLOGIST**	_ SANITARY ENGINEERS	
528 **CONSTRUCTION INSPECTORS**	40 HISTORIANS	212 **SIOLS ENGINEERS**	
_ **DESIGNERS**	_ **HYDROLOGISTS**	_ SPECIFICATION WRITERS	
_ DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE:
4_____
***RPEs other than Civil must provide supporting documentation that qualifies them to supervise and perform this type of work.**

10. If submittal is by joint venture, list participating firms & outline specific areas of responsibility (including administrative, technical, & financial) for each firm. Each participating firm must complete a "Consultant Confidential Qualification Questionnaire".

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

11. OUTSIDE KEY CONSULTANTS/ SUB-CONSULTANTS ANTICIPATED TO BE USED.		
NAME AND ADDRESS: Triad Engineering 219 Hartman Run Rd Morgantown, WV 26505	SPECIALTY: Drilling/Surveying	WORKED WITH BEFORE YES
NAME AND ADDRESS: Geotechnics 544 Braddock Avenue Pittsburgh, PA 15112	SPECIALTY: Geotechnical Laboratory	WORKED WITH BEFORE Team members have in their work experience with other firms
NAME AND ADDRESS: Severn Trent Services 1746 Irwin Sportsman Rd. Manor, PA 15665	SPECIALTY: Analytical Laboratory	WORKED WITH BEFORE YES
NAME AND ADDRESS: Keddal Aerial Mapping 1121 Boyce Rd, Ste. 3100 Pittsburgh, PA 15241	SPECIALTY: Aerial Mapping	WORKED WITH BEFORE Team members have in their work experience with other firms
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE □YES □NO
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE □YES □NO
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE □YES □NO
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE □YES □NO
NAMEAND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE □YES □NO

12. A. Is your firm experienced in solid waste landfill leachate storage design?
YES Description and Number of Projects:
Tim Miller, the proposed Project Manager, has managed the design, installation, modification and erection of 10 large collections tanks in excess of 250,000 gallons. In addition, he managed the design of four landfill collection tank and aeration system redesigns. The tanks have all been either field erected steel tanks or steel bolted with glass liners.

B. Is your firm experienced in solid waste landfill leachate capacity assessment?
YES Description and Number of Projects:
Tim Miller has managed the generation and storage of leachate from a large solid waste landfill on a daily basis for 10 years. Tetra Tech Inc has also evaluated the generation of leachate from 8 different landfills to determine treatment efficiencies, storage capacities, collection system sizing.

C. Is your firm experienced in solid waste landfill closure construction inspection?
YES Description and Number of Projects:
Jay Santa, Tetra Tech's Construction Manager, Larry Deutsch, construction QA/QC, and Charles Warino, Construction QA/QC have experience with landfills and landfill closure construction inspection and will manage this aspect of the project. In addition, team members also routinely provide technical review of construction submittals and variance requests in conjunction with landfill closure projects. Tetra Tech has experience at **over 20 landfill** closures at which QA/QC following design approval was performed.

D. Is your firm experienced in aerial photography and the development of contour mapping?
YES Description and Number of Projects:
Tetra Tech routinely hires subcontractors for aerial photography to develop contour maps. In most cases the contour mapping was developed through aerial photography and ground truthing but on some projects land surveyors were used for mapping. Tetra tech employs six GIS/CADD operators in the Pittsburgh office and has all necessary GIS/CADD software for map development, at **over 15 landfills**.

E. Is your firm familiar with the requirements of 33CSR1, the ground-water protection act, under-ground and above-ground storage tank rules?
YES Description and Number of Projects:
Tetra Tech has performed **hundreds** of environmental site investigations and has evaluated groundwater contamination at approximately **90% of these sites**. Tetra Tech employs chemists who routinely perform validation of groundwater data. Tetra Tech has also performed hydrogeologic modeling, as appropriate, for site evaluation and closure design. In addition, team member Stephanie Warino, WV LRS, PG, has performed hydrogeologic evaluations of groundwater monitoring systems for a significant number of sites.

F. Is your firm experienced in solid waste landfill closure cost estimating?
YES Description and Number of Projects:
Tetra Tech has performed conceptual design cost estimates including capital costs, operation and maintenance costs, and present worth analyses, for **over 50 sites** to assist in determining the best-value solution. In addition, detailed cost estimates are prepared to serve as the owners engineer's estimate based on the final landfill closure design.

13. PERSONAL HISTORY STATMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE DESIGN (describe project)** (Furnish Complete data but keep to essentials)

NAME& TITLE (Last, first, Middle Int.) Miller, Timothy, J. Proposed Project Manager	YEARS OR EXPERIENCE Mr. Miller has over 30 years of experience in environmental, engineering and operational experience in regards to leachate and wastewater generation.		
	YEARS OF (type) EXPERIENCE: 30 years – Chemical & Environmental Engineering	YEARS OF (type) EXPERIENCE 10 years of leachate collection system design	YEARS OF (name type) EXPREIENCE: 9 year of landfill operation and evaluation

Brief Explanation of Responsibilities:

- Responsible as the managing partner for the day-to-day operation of the closed landfill.
- Primary responsibility was the collection, treatment and discharge of treated leachate.
- Responsible for the cleaning and modification of three 250,000 bbl waste collection tanks
- Responsible for the installation of multiple leachate and collection tanks for railroad operations
- Managed the installation of multiple API 650 tanks for the storage of products and waste

EDUCATION (DEGREE, YEAR, SPECIALIZATION) B.S., M.S. Chemical Engineering – University of Pittsburgh	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS: N/A	REGISTRATION (Type, Year, State) Professional Engineer, 1996, PA

13a.PERSONAL HISTORY STATMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE DESIGN (name type of design or work)** (Furnish complete data but keep to essentials) See resumes provided in Attachment

NAME & TITLE (Last, First, Middle Int.) Baker, Bob., PE Project Manager	YEARS OF EXPEIRENCE		
	YEARS OF EXPEIRCENE (ENGINEERING): 21	YEARS OF EXPEIRENCE (LANDFILL CLOSURE): 21	YEARS OF EXPEIRENCE (LANDFILL CONSTRUCTION MONITORING): 5

Mr. Baker specializes in geoenvironmental engineering and geosynthetic applications and design, with an emphasis in residual, industrial, and municipal solid waste (MSW) management facilities. During his 21 year career, he's served as the Design Engineer, Lead Engineer, and Project Manager for the planning, siting, design, and permitting of multiple coal combustion residual (CCR), MSW, and coal mine refuse landfills and disposal impoundments; leachate and stormwater management impoundments; and other associated geoenvironmental and civil engineering facilities. Mr. Baker also has extensive field construction experience and has served as the Resident Engineer, Project Manager, and Construction Quality Assurance (CQA) Certifying Engineer for over 20 CCR and MSW landfill cells and ancillary works including stormwater and erosion and sedimentation controls (channels, culverts, ponds, and other BMP's); leachate storage impoundments and above-ground tanks; pump stations; force mains; haul roads.

EDUCATION (Degree, Year, Specialization) MS, 1993, Civil Engineering, West Virginia University BS, 1991, Civil Engineering, West Virginia University	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS North American Geosynthetics Society, Member International Geosynthetics Society, Member	REGISTRATION (Type, Year, State) Professional Engineer, 2001, PA Professional Engineer, 1998, NC (Inactive)

13b. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE QA/QC** (Furnish complete data but keep to essentials)

NAME & TITLE (last, first, middle Int.)	YEARS OF EXPEIRENCE		
	YEARS OF EXPERIENCE (ENGINEERING):	YEARS OF EXPEIRENCE (name type):	YEARS OR EXPEIRENCE (name type):
Gesk, Mike, PE Deputy Project Manager	9		

Brief Explanation of Responsibilities:

Mr. Gesk is a Professional Engineer registered in Pennsylvania with over 9 years of experience specializing in geoenvironmental and civil engineering with an emphasis on Coal Combustion Residual (CCR) disposal facilities. Mr. Gesk has provided engineering support primarily to the electric generation sector with experience in engineering, design, permitting, construction management, construction quality assurance/certification, and project management. Mr. Gesk has extensive field construction experience and has served in technical support, field advisory, and Resident Engineer capacities for the construction of several CCR landfill cells and ancillary facilities such as haul roads and leachate, process water, and stormwater impoundments as well as other major civil engineering projects. His technical responsibilities have included planning, coordinating, and directing subsurface investigations, soil resource evaluations, and geosynthetic and geotechnical testing programs; facility layouts, grading plans and details; performing geosynthetic liner and leachate collection and conveyance system design; performing slope stability and settlement analyses; reviewing contractor submittals, RFIs, schedules and pay requests; and preparation of permit applications and supporting documentation for regulatory review and approval. Other responsibilities have included developing project work scopes and budgets; assembling, coordinating, and directing multidisciplinary office and field investigation teams; communicating and meeting with local, county, and state planning and regulatory agencies; and tracking and reporting project progress and budget status.

EDUCATION (Degree, Year, Specialization)

BS, 2005, Civil & Environmental Engineering, University of Pittsburgh
BA, Physics, 2005, Duquesne University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	Professional Engineer, 2009, PA GCI Certified CQA Geosynthestic Materials and Compacted Clay Liner Inspector, 2009

13c. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **REPONSIBLE FOR HEAVY EARTH WORK CONSTRUCTION PROJECTS** (Furnish complete data but keep to essentials)

NAME & TITLE (last, first, middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF EXPERIENCE (CONSTRUCTION AND HEAVY EARTHWORK)	YEARS OF EXPERIENCE (name type)	YEARS OF EXPERIENCE (name type)
Santa, Jay Construction Manager	20		

Brief Explanation of Responsibilities

Mr. Santa has more than 20 years of experience performing construction project and site management, the last three years for Marcellus Shale projects. His experience includes large earth moving projects, superfund site remediation, landfill construction and closure, utility installation and pipe work, soil remediation, water management and groundwater barrier construction.

EDUCATION (Degree, Year, Specialization)

BS, Earth and Mineral Sciences

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
N/A	N/A

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE THIS PROJECT (name project)
Microsoft Office Professional (includes Excel and Word)
Microsoft Project
Photoshop
Adobe Acrobat Version 8.0
AutoCAD Map 3D 2008 / AutoCAD 2008
AutoDesk Civil 3D 2007
ESRI ArcGIS 9.2
ESRI ArcView 3.3
Bentley PondPack (Haestad Methods) Version 9.0
Bentley Flow Master (Haestad Methods)
Bentley HEC-Pack
STABL5M
Hydrologic Evaluation of Landfill Performance (HELP)
Groundwater Vistas Version 3.5 (MODFLOW based 3D finite difference model, including MT3D, RT3D, MODPATH, MODFLOWT, and SWIFT components)
GMS (MODFLOW based 3D finite difference model, including MT3D, RT3D, MODPATH and 3-D spatial analysis components)
Visual MODFLOW (MODFLOW based 3D finite difference model, including MODPATH)
SWANFLOW (3D finite difference model specializing in 3-phase fluid flow in porous media – water, NAPL, air)
Several analytical-based software packages including BIOCHLOR, BIOSCREEN, and SESOIL

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD ASSOCIATED WITH OR RELATING TO LANDFILL CLOSURE OR CONSTRUCTION.				
PROJECT NAME,TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESOPNSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Environmental Review, Due Diligence, and Post-Closure Services, Pinelands Park Landfill (Closed)	Atlantic County Utilities Authority 6700 Delilah Road, Egg Harbor Township, New Jersey	Environmental Review and Due Diligence, Post-Closure Cost Estimates, Monitoring and Reporting, and Financial Plan Updates	Confidential	75%
Remediation and Closure Services, Tantalo Waste Disposal Site	IESI – Seneca Meadows, Inc. 1786 Salcman Road, Waterloo, New York	Focused RI/FS, Fractured Rock Aquifer/Tracer Test, Remedial Design, Remedial Construction, Natural Attenuation Demonstration, Operation, Maintenance, and Monitoring Services	Confidential	75%
Post Closure Monitoring Annual Engineer's Report and Cost Estimating, Eastern, Central, and C&D Landfills, New York	Montgomery-Otsego-Schoharie Solid Waste Management Authority (MOSA) South Route 7, Howes Cave, New York	Post closure monitoring and annual reporting. Post closure cost estimates for 30 year post closure term, Engineering evaluations landfill and leachate management systems	Confidential	75%
Landfill Closure/Brownfield Redevelopment and Post-Closure Monitoring, Stafford Township Landfills, New Jersey	Walter's Homes 246 Stafford Park Blvd, Manahawkin, New Jersey	Landfill closure Geomembrane final cover Development of yard waste compost facility Major waste disruption, Excavation and beneficial reuse of waste materials Brownfield redevelopment Post-closure monitoring and maintenance	Confidential	75%
TOTAL NUMBER OF PROJECTS: #4		TOTAL ESTIMATED CONSTUCTION COSTS: Confidential		

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONSULTANT TO OTHERS RELATING TO LANDFILL CLOSURE AND CONSTRUCTION.					
PROJECT NAME, TYPE, AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTURCTION COST:	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
N/A					

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD (List 5 to 7)				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
New Asset Facility Planning, Design, and Permitting, Confidential Project, Pennsylvania	Confidential Client	Confidential	Currently Ongoing Start: 2009	No
Pollution Control Financing, Pennsauken Sanitary Landfill	Authority of Camden County (PFCA) 9600 River Road Pennsauken, New Jersey	Confidential	Currently Ongoing Start: 2010	N/A
Engineering Services and Environmental Services (Groundwater and Landfill Gas Migration, emissions permitting, and stormwater pollution prevention monitoring), MAC Landfill	MAC Sanitary Landfill Route 41 Deptford, New Jersey	Confidential	Currently Ongoing Start: 2006	N/A
Wetland Leachate Treatment for Haley Pike Solid Waste Landfill Closure, Fayette County, Kentucky	Lexington-Fayette Urban County Government 4216 Hedger Lane, Lexington, Kentucky	$900,000	2006 - 2011	Yes
LFG System Development Plans, Keystone Sanitary Landfill Expansion, Scranton, Pennsylvania	Keystone Sanitary Landfill, Inc. 249 Dunham Drive, Scranton, Pennsylvania	Confidential	2001 - 2009	Yes

18. COMPLETED WORK WITHIN LAST 5 YEARS IN WHICHYOUR FIRM HAS BEEN A SUBCONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK WHICH YOUR FIRM WAS RESPONSIBLE) LIST 5 TO 7.					
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
N/A					

19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the WV Department of Environmental Protection.

Tetra Tech is a recognized engineering company with an extensive pool of resources. In addition to the approximately 200 people in our Pittsburgh office, our firm has the ability to utilize the skills of over 10,000 Tetra Tech employees across 275+ offices worldwide in the United States, France, Germany, India, South Korea, Philippines, Republic of Panama, and United Arab Emirates. Tetra Tech has over 750 registered Professional Engineers and Professional Geologists and in 2008, had sales totaling over $2 billion. The firm's federal government clients have included the US Environmental Protection Agency, the Army, Navy, Air Force, US Department of Homeland Security, NASA, US Department of Energy, and the US Postal Service.

While this project would be managed out of our Pittsburgh office, Tetra Tech also has an office location in Charleston, West Virginia, which can support the project. Tetra Tech has been dedicated to the state of West Virginia and The WV Department of Environmental Protection is our Charleston office's largest client. In addition, our subconsultant, Triad Engineering, is located in Morgantown, West Virginia.

The skill of Tetra Tech is evidenced by the firm's 2008 Engineering News Record (ENR) rankings, which include **#1 rankings** in Solid Waste. The firm is also ranked in the **top ten companies** for site assessment and compliance, chemical and soil remediation, environmental science, environmental management, and consulting/studies. Tetra Tech is ranked as the **6th largest** environmental firm and the 8th largest design firm.

The U.S. Navy has noted Tetra Tech's quality work with landfills. On the White Oak Sites 1 & 2 Landfill projects, the Navy commented ***"Tetra Tech exhibited knowledge, good experience and professionalism throughout t he de sign stages"*** while offering several 'Outstanding' ratings on various aspects of the project.

20. The foregoing is a statement of facts Signature: Stephanie Warino Title: Fairmont, WV Operations Manager Printed Name: Stephanie Warino	Date: November 18, 2015

Section C: Team Member Qualifications

Over the next several pages, we have included full-page resumes of our project team's key personnel to supplement our proposal. Our project team is led by Mr. Tim Miller, PE, a registered Professional Engineer. Mr. Miller has more than 30 years of experience and has supported a significant number of landfill cap closures and designs.

Tetra Tech possesses the resources and necessary expertise to self-perform all services for an environmental study of the Leachate Holding Tank Study for Jefferson County landfill. We provide the following range of services to our clients in support of their landfill projects. The ability to provide these services, coupled with our financial strength and corporate resources, qualifies us as a low risk/performance based contractor in the landfill services industry. Tetra Tech understands that construction is not a part of this scope of work, but we have provided a brief summary of our construction capabilities, to provide DEP with the depth and breadth of our landfill services. Tetra Tech is cognizant of ensuring that our landfill cap engineering and design is practical, implementable, and cost-effective during construction.

1. Initial Evaluation

- Site assessment
- Regulatory review
- Records search
- Risk assessment
- Feasibility studies
- Environmental impact assessment, including NEPA documentation

2. Design Services

- Alternatives analysis
- Regulatory negotiations
- Closure system permitting and design
- Gas collection system design
- Gas-to-energy/cogeneration system design
- Bid specification preparation

3. Permitting

- Air
- NPDES
- Construction
- Quarterly/monthly reporting

4. Construction Services

- Design/build
- Bid process management
- Construction management
- Excavation, grading, cell construction
- Waste management/relocation
- Soil conditioning/screening
- Gas probe and well installation
- Geosynthetic liner installation
- Leachate collection/treatment systems
- Active/passive gas collection systems
- Source containment, slurry walls, horizontal curtains
- Stormwater and erosion controls
- Wetland and ecological area restoration
- Closure report
- Commissioning

5. Operation and Maintenance

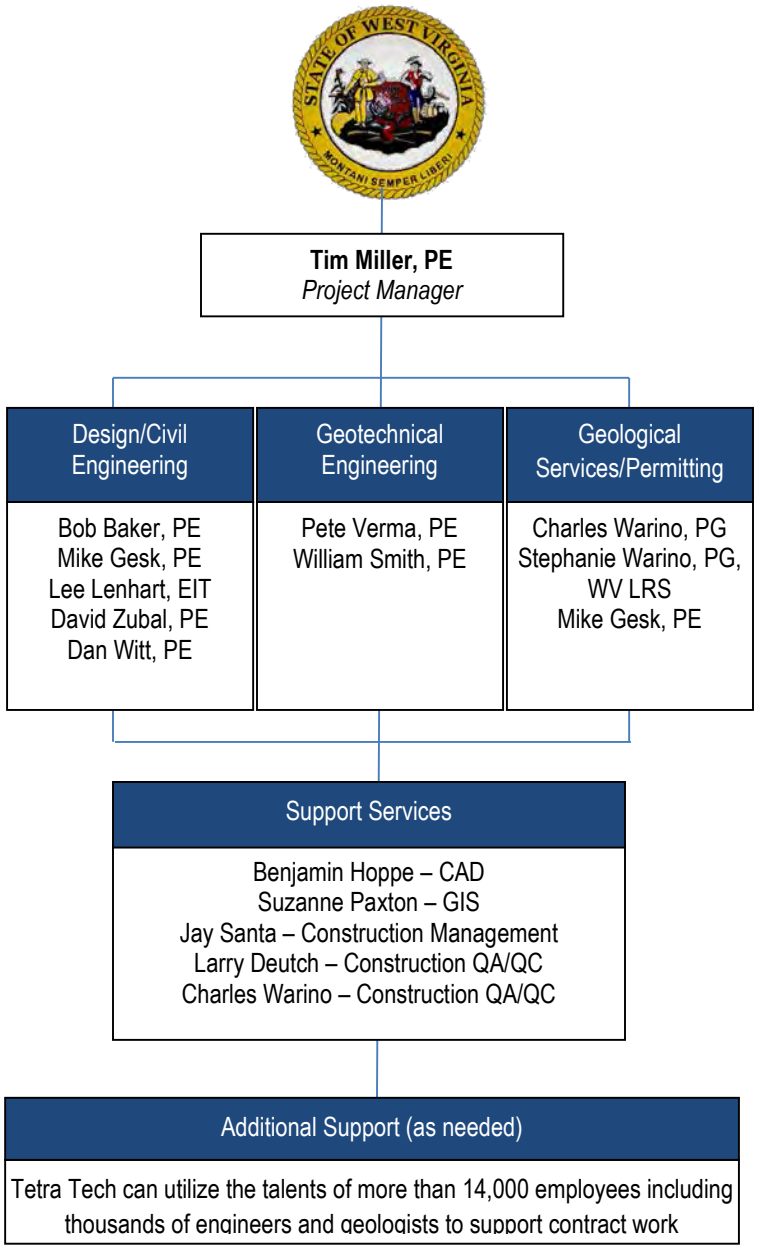
- Sampling and analysis
- Waste placement
- Cap maintenance
- Gas monitoring and statistical analysis

6. Environmental Services

Tetra Tech has a reputation for quickly responding to c lient r equests f or e nvironmental s ervices regardless of j ob s ize. We pr ovide s pecialized discipline s ervices as s eparate or i ntegrated services. Tetra Tech has the ability to draw on staff in our of fices a nd a dditional r esources both nationally and internationally through our corporate affiliates. Our pr oject ex perience i ncludes preparation of numerous bas eline environmental investigations, l icensing s tudies, environmental reports, a nd N EPA E As and E ISs. O ur s ervices include:

- **Environmental / E ngineering** – expertise in a br oad s pectrum of env ironmental engineering di sciplines an d ex perience at balancing env ironmental engineering requirements with other project objectives, such as s atisfying t he a esthetic des ign concerns of local planning authorities.
- **Regulatory C ompliance a nd P ermitting** – innovative a nd pr actical s olutions t o development a nd env ironmental management i ssues w ith f ocus on managing and pr eparing N EPA environmental as sessments (EAs) an d environmental i mpact s tatements (EISs), risk assessments, and permit applications.
- **Air S ervices** – comprehensive ai r qual ity and m eteorological s ervices i ncluding air pollution c ontrol, ai r per mitting, am bient and emissions m onitoring, di spersion modeling, ai r t oxics s ampling/reporting, special studies, sampling and monitoring.
- **Water an d W astewater Engineering** – complete c onceptual and detailed des ign for various types of water and wastewater treatment s cenario i ncluding s upport through t he start-up phase t o e nsure smooth and efficient operation.
- **Water resource S tudies -** watershed management, r esource pl anning, s urface water a nd groundwater s ervices, w ater systems and climate change modeling.
- **Ecological S tudies** – terrestrial, a quatic, wetland, a nd other ec ological investigations for ev aluating t he effects of physical an d c hemical i mpacts on t he environment.
- **Geoscience S tudies** – geophysical a nd geological i nvestigations, aquifer t esting, groundwater m odeling, and s oil g as investigations.
- **Economic, S ocial, a nd Cultural Services** – socioeconomic an alyses, l and use/recreation pl anning, c ultural r esource management, v isual/aesthetic i mpact assessment, and publ ic participation/community relations.
- **Occupational S afety a nd Health** – evaluations a nd au dits, environmental/health and s afety pr ogram integration, c ustomized t raining pr ograms, exposure as sessment, a nd lead and asbestos abatement.

In addition, an organization chart of our engineering team professionals has been provided below. All staff members are located in local West Virginia and Pennsylvania offices.



Timothy J Miller, PE

Director of Gas Field Operations and Development

Mr. Miller has over 30 years of experience managing and engineering over 50 wastewater treatment installations on both fixed locations and mobile locations. He has held positions of Director of Gas Field Operations for US Environmental, President Clean Streams LLC, General Manager of Rettew Flowback, Inc., President of Harrisburg Energy Alternatives, President of EPSYS Corporations. Mr. Miller holds technology licenses for flowback and production wastewater treatment and is a professional engineer.

EDUCATION

- MS, Chemical Engineering
- BS, Chemical Engineering

YEARS EXPERIENCE - 30

REGISTRATIONS & TRAINING

- Professional Engineer: PA

Relevant Landfill Experience:

- Dover Landfill – Owned by Waste Management. As the managing partner for EPSYS Corporation I was responsible for the day to day operation of the landfill. Major projects included the reworking of the leachate collection system and water remediation system.
- Bullet County Kentucky – Project Engineer for the leachate collection and treat system for the operating landfill.
- Harrisburg Landfill – Project Engineer for the closing of the landfill and the revitalization of the landfill under a brown field project for the placement of the PADEP Elmerton Avenue Office.

Relevant Tank Experience:

- Managed the design and installation of eight 250,000 gallon collection tanks for refining operation in Harrisburg Pennsylvania
- On-site manager for the removal of over 50 AST and UST ranging in size from 100 gallons to 50,000 gallons for a venture capitalist for the facility renovation operation in Harrisburg Pennsylvania.
- Design and installation of six 50,000 gallons API 650 tanks for a Chemical Manufacturing Company in Reading Pennsylvania.
- Coordination of tank refurbishment of 250,000 gallon AST for a refinery operation in Pennsylvania.
- As the President of EPSYS Corporation, we managed the removal and installation of over 2000 tanks from 1996 through 2006.

Relevant Oil & Gas Shale Play Project Experience:

- Operations Manager for a 2500 bbl per day WMGR 123 facility in Williamsport, Pennsylvania.
- Operations Manager for a solid dewatering facility in Williamsport, Pennsylvania.
- Project Manager/General Manager for the development of mobile treatment system for oil and gas producers in the Northern Tier of Pennsylvania and Southeastern Ohio.
- Project Manager/consultant for the design (including standards and specifications) and permitting of several flowback and produced water treatment and recycle facilities.
- Project Manager for developing deep well injection systems in the northeastern Pennsylvania.
- Produced water manager for various oil and gas companies in Pennsylvania Northern Tier.

ROBERT C. BAKER, P.E.

Senior Geoenvironmental Engineering Manager

EXPERIENCE SUMMARY

Mr. Baker specializes in geoenvironmental engineering and geosynthetic applications and design, with an emphasis in residual, industrial, and municipal solid waste (MSW) management facilities. During his 21 year career, he's served as the Design Engineer, Lead Engineer, and Project Manager for the planning, siting, design, and permitting of multiple coal combustion residual (CCR), MSW, and coal mine refuse landfills and disposal impoundments; ***leachate and stormwater management impoundments***; and other associated geoenvironmental and civil engineering facilities. Mr. Baker also has extensive field construction experience and has served as the Resident Engineer, Project Manager, and Construction Quality Assurance (CQA) Certifying Engineer for over 20 CCR and MSW landfill cells and ancillary works including stormwater and erosion and sedimentation controls (channels, culverts, ponds, and other BMP's); ***leachate storage impoundments and above-ground tanks***; pump stations; force mains; and haul roads.

Siting, Design, Permitting, and Construction Bid Package Preparation

Mr. Baker has served as the Lead Engineer and Project Manager for siting, design, permitting, and construction bid package preparation for several landfills, impoundments, and other geoenvironmental and civil engineering projects. His technical responsibilities have included planning, coordinating, and directing subsurface investigations, soil resource evaluations, and geotechnical testing programs; preparing facility layouts, grading plans and details; ***performing liner and leachate collection system design***, slope stability and settlement analyses; preparing CQAP lans and technical specifications; developing stabilization plans for abandoned underground mine workings; and assisting with seismic stability and liquefaction susceptibility evaluations of coal refuse disposal impoundments. Representative projects include:

- Residual Solid Waste and Section 404/Chapter 105 Joint Permit Application for a new 64 acre CCB landfill (Confidential Client, PA).
- Siting Study and Residual Solid Waste Permit Application for a new 140 acre CCB landfill (Confidential Client, OH).
- Solid Waste/NPDES Permit Application for a 244 acre lateral expansion of an existing CCB landfill (Confidential Client, WV).
- Residual Solid Waste and Section 404/Chapter 105 Joint Permit Application for a 108 acre lateral expansion of an existing CCB landfill (Confidential Client, PA).
- Reclamation/stabilization of a highwall adjacent to a church and school building and installation of an acid mine drainage (AMD) collection system (PaDEP BAMR, Monongahela, PA) - Received the OSM's 2006 Eastern Region Abandoned Mine Reclamation Award.

EDUCATION

M.S. Civil Engineering, 1993, West Virginia University

B.S. Civil Engineering, 1991, West Virginia University

REGISTRATIONS

Professional Engineer, PA, 2001, [redacted] PA

Professional Engineer, NC (Inactive), 1998, [redacted] NC

TRAINING/CERTIFICATIONS

30-Hour OSHA Construction Safety and Health Training, 2010

PSMJ Advanced Project Management Training, 2009

Troxler Nuclear Gauge Operator

YEARS OF EXPERIENCE

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Construction Monitoring/CQA/Certification

Mr. Baker has served as the Resident Engineer, Lead Engineer, Project Manager and CQA/Certifying Engineer for the construction of several CCB and MSW landfill cells and ancillary facilities such as ***leachate/stormwater impoundments and tanks***, pump stations, forcemains, and haul roads, as well as other major civil engineering projects for the electric generation sector such as material handling and conveyance systems, stormwater management controls, and switchyard equipment foundations. As a Resident Engineer his responsibilities have included verifying contractor layouts and reviewing survey data; performing and directing soil, aggregate, and rock CQA activities; performing and directing geosynthetic CQA activities; monitoring and inspecting the installation of HDPE and PVC piping systems, manholes, valves, pumps, and I/C systems; monitoring placement and performing and directing testing for cast-in-place concrete structures; ***monitoring erection of steel leachate storage tanks***; logging groundwater monitoring well decommissioning and new well installations; reviewing soil, aggregate, grout, concrete, and geosynthetic laboratory test data; and reviewing and approving contractor submittals, schedules and pay requests. Representative projects include:

- Disposal Site, Stages IIIA, IIIB, and IIIC - 54 acres of PA Class 1 liner system for a CCB landfill (Confidential Client, PA).
- YDSM Pond - 2 acres of modified PA Class 1 liner system and a pump station for a stormwater yard drain equalization pond (Confidential Client, PA).
- ***Alamance County Landfill, Cell 2A - 8.5 acre MSW landfill cell and 375,000 gallon leachate storage tank (County of Alamance, NC).***
- Wilder's Grove Landfill – 68 acre final cover system for an MSW landfill (City of Raleigh Department of Solid Waste Services, NC).
- Randolph County Landfill – 21 acre final cover system for an MSW landfill (Randolph County Public Works Department, NC).

As a Lead Engineer, Project Manager, and CQA/Certifying Engineer, Mr. Baker's responsibilities have included developing project worksopes and budgets; assembling, coordinating, and directing multidisciplinary office and field teams; attending construction progress and problem resolution meetings; planning, coordinating, and directing contractor submittal review, RFI response, and laboratory sampling/testing programs; and issuing construction certification reports and supporting documentation for regulatory review and approval. Representative projects include:

- CCB Landfill, Phase 3, Step 1, 2, and 3 landfill cells, ***Leachate Storage Impoundment***, and Haul Road – 63 acres of PA Class 1 liner system and approximately 1 mile of new concrete haul road for a CCB landfill (Confidential Client, PA).
- CCB Landfill, Haul Road Stormwater Management Improvements and Settling/Equalization Pond – 2 acre lined impoundment for settling/equalization of haul road runoff and resurfacing of approximately 2 miles of gravel haul road for a CCB landfill (Confidential Client, WV).
- New CCB Landfill Facility, Stage 1A and 1B landfill cells ***and South Leachate Pond*** – 18 acres of PA Class 1 liner system and approximately 0.5 miles of gravel haul road (Confidential Client, PA).

MICHAEL A. GESK, P.E.

Geoenvironmental Engineering Project Manager

EXPERIENCE SUMMARY

Mr. Gesk has extensive field construction experience and has served in technical support, field advisory, and Resident Engineer capacities for the construction of several CCR landfill cells and ***ancillary facilities such as haul roads and leachate***, process water, and stormwater impoundments as well as other major civil engineering projects. His technical responsibilities have included planning, coordinating, and directing subsurface investigations, soil resource evaluations, and geosynthetic and geotechnical testing programs; facility layouts, grading plans and details; performing ***liner and leachate collection and conveyance system design***; performing slope stability and settlement analyses; reviewing contractor submittals, RFIs, schedules and pay requests; and preparation of permit applications and supporting documentation for regulatory review and approval. Other responsibilities have included developing project work scopes and budgets; assembling, coordinating, and directing multidisciplinary office and field investigation teams; communicating and meeting with local, county, and state planning and regulatory agencies; and tracking and reporting project progress and budget status.

RELEVANT EXPERIENCE

Confidential Client Solid Waste Landfill Permit Application (2007-2008); Clinch River Power Station; Carbo, Virginia. Engineer responsible for providing slope stability analyses, ***leachate collection system design***, hydrological evaluation using EPA HELP modeling software, geosynthetic liner system components (HDPE geomembrane, GCL, GDN, and woven and non-woven geotextiles), ***leachate storage sump***, conveyance gravity pipeline, and material volume and site life analyses submitted with the permit application for construction of the new facility.

Confidential Client Residual Solid Waste Landfill Permit Application (2006-2007); Power Station; Conesville, Ohio. Engineer responsible for providing slope stability analyses, ***leachate collection system design***, hydrological evaluation using EPA HELP modeling software, and material volume and site life analyses submitted with the permit application for construction of the new facility.

Confidential Client Residual Solid Waste Landfill Permit Application (2006); IGC CP Iant; Meigs County, Ohio. Engineer responsible for providing ***leachate collection system design***, hydrological evaluation using EPA HELP modeling software, and final closure cost estimate submitted with the permit application for construction of the new facility.

Confidential Client – Disposal Site Improvements and Cost Projections Evaluation (2010); Generating Station; Indiana County, Pennsylvania. Lead Engineer responsible for providing cost projections for the development of the West Valley disposal site, designing ***improvements to the leak***

EDUCATION

B.S. Civil and Environmental Engineering, 2005, University of Pittsburgh

B.A. Physics, 2005, Duquesne University

REGISTRATIONS

Professional Engineer, PA, PE [redacted]

GCI Certified CQA Geosynthetic Materials and Compacted Clay Liner Inspector; 2009

TRAINING/CERTIFICATIONS

Advanced Project Management Training; 2013

Risk Management Training; 2011

OSHA 30-Hour Construction Health and Safety; 2010

OSHA 10-Hour Construction Health and Safety; 2007

OSHA Fall Protection; 2007

Troxler Nuclear Gauge Operator

YEARS OF EXPERIENCE

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detection system and leachate collection conveyance and cleaning structures, phase sequencing and ultimate pile development, and evaluation of existing facility permit modification impacts.

Confidential Client – CCB Disposal Site Improvements Evaluation (2009); Generating Station; Indiana County, Pennsylvania. Senior Engineer *responsible for evaluating the leachate collection system and leachate chemistry and providing design and operation improvement alternatives* for the existing East and West Valley CCB disposal sites. Also performed a site development/phasing analysis and pile grading layout.

Confidential Client – CCR Landfill Expansion and Haul Road, Leachate Storage Impoundment and Phase 3 Steps 1 and 2 (2009, 2010, and 2011); Power Station; Masontown, Pennsylvania. Lead Engineer responsible for performing and *supporting CQA monitoring of soil, aggregate and rock and 45 acres of PA Class 1 geosynthetic liner components installed for the Leachate Storage Impoundment (5 acres), Phase 3, Step 1* Expansion (17 Acres), and Phase 3, Step 2 Expansion (23 Acres). Other duties include providing office engineering support, contractor submittal review, laboratory conformance test setup and data review, and assisting with the preparation of the Construction Report submitted to the Pennsylvania Department of Environmental Protection.

Confidential Client – New CCR Landfill Facility, South Leachate Pond (2005); Power Station; Indiana County, Pennsylvania. *Engineer performing CQA monitoring of the installation of 5 acres of PA Class 1 geosynthetic liner components installed in the new leachate pond*. Other tasks included assisting with preparation of Construction Certification Report for the Pennsylvania Department of Environmental Protection.

LEE G. LENHART, E.I.T.

Civil Engineering Project Manager

EXPERIENCE SUMMARY

Mr. Lenhart specializes in design and construction of Coal Combustion Residual (CCR) landfills and ponds with focus on task management, construction quality assurance, investigations, analyses, and civil design for power generation facilities, mining sites, landfills, ponds, and haul roads.

RELEVANT EXPERIENCE

Project Coordinator; LG&E/KU; Ghent Phase 1A Landfill; Ghent, KY; 5/2012 to 3/2013. ***New construction of a 50-acre landfill and 1-acre leachate pond with a single geomembrane liner system, leachate force-main and pump station***, perimeter channels, and new haul road. Mr. Lenhart represented the design engineer during construction by coordinating and assisting in the review of RFI's, submittals, and design modification addendums.

Lead Liner Technician; Confidential Client; CCB Landfill Expansion Leachate Storage Impoundment; Masontown, PA; 9/2009 to 12/2009. ***New construction of a 5-acre leachate pond with a 6-inch soil subbase, a Class 1 liner system, and fabricform or flowable fill protective cover***. Mr. Lenhart was responsible for CQA of the liner system, supervising up to two field technicians, resolving design-construction conflicts.

Resident Engineer/Soils Technician; Confidential Client; New CCB Landfill South Pond and Stage 1A; Adrian, PA; 5/2005 to 12/2005 and 5/2006 to 12/2006. ***New construction of a 1+ acre leachate pond and 10-acre landfill with a Class 1 liner system*** over a 6-inch thick compacted clay liner, new discharge and conveyance pipelines, sampling chambers, access/haul roads, fabricform protective cover and channel lining, mining of soil subbase, and soft subgrade repair. Mr. Lenhart assisted with submittal review, and CQA sampling and testing of geosynthetic materials.

Lead Engineer; Confidential Client; Old Landfill Drainage Evaluation; Maidsville, WV; 2012. This project ***involved evaluation of existing leachate ponds and forcemain operations***, landfill regrading to control site drainage, elimination of an NPDES outfall by rerouting stormwater, consolidating various site drainage features onto one complete map, and designing a gravity discharge line for and existing pond.

Lead Engineer; Confidential Client; Stage 3 Disposal Site; Shelocta, PA; 2010. Responsible for monitoring inspection of piping cleanouts and redesign of cleanout orientation and access for a major permit modification ***and installing leachate level indicators***.

Sr. Engineer; Confidential Client; Landfill Pipe Inspections; Harrison County, WV; 2008. Planned, coordinated, monitored and reported on pipe inspection and cleaning work, was responsible for coordinating the cleaning company, ***monitoring inspection of leachate collection and detection / underdrain piping, and preparation of final*** report and procedure manual.

EDUCATION

B.S. Civil Engineering Technology, 1999, University of Pittsburgh

REGISTRATIONS

Engineer-In-Training, Pennsylvania, 1998

Certified ACI Concrete Field Testing Technician, Grade I, Renewed 2013

Troxler Certified Nuclear Gauge Operator, Renewed 2013

TRAINING/CERTIFICATIONS

OSHA 30-Hour Construction Safety Training, 2010

OSHA 10-Hour Construction Safety Training, 2006

YEARS OF EXPERIENCE

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DAVID P. ZUBAL, P.E. CPESC

Assistant Civil and Environmental Engineering Department Manager

EXPERIENCE SUMMARY

Mr. Zubal specializes in civil and environmental engineering project management, including overseeing development of environmental permits including erosion and sedimentation control and stormwater site development plans. He is a Professional Engineer in six states including Pennsylvania, Ohio, West Virginia, Connecticut, Iowa and Nebraska. He has experience with Federal Energy Regulatory Commission (FERC) projects, both large and small scale. He also has field experience including pipeline installation, meter station installation, landfill liner installation, earthwork development monitoring, roadway construction monitoring, material sampling and monitoring, erosion and sedimentation control monitoring and planning, and materials analysis. He is experienced using Global Positioning System (GPS) applications and other field surveying equipment.

RELEVANT EXPERIENCE

Engineer-In-Training; American Electric Power. Hydrology and Hydraulics (H&H) analysis for American Electric Power Glen Lyn and Amos landfill sites. Assisted with hydrologic and hydraulic engineering for site drainage design. Also assisted with lifecycle cost analysis of facility.

Engineer-In-Training; Allegheny Power. Allegheny Power Doubs-Aqueduct-Dickerson 230 kV Transmission Line Upgrade Project. Assisted with grading plan design and construction permitting associated with new towers and the stringing of new overhead power lines.

Senior Engineer-In-Training; Allegheny County. North Park Lake Aquatic Ecosystem Restoration Project in Pennsylvania's Allegheny County is a habitat restoration and mitigation design project. Involved with stormwater and erosion control permitting for a landfill area associated with lake dredging to remove sediment.

Senior Project Engineer-In-Training; Duquesne Light Company. Multiple on-site Erosion and Sedimentation Control Plan (E&SCP) for the Duquesne Light Company in the Pittsburgh area. The projects involved removal and replacement of underground electric conduits and lines. E&SCPs were prepared for on-site use to comply with local and state regulations.

Lead Engineer-In-Training; Ralph A. Falbo, Inc. Responsible for engineering support for site development associated with the new Kane Regional Center building. Foundation placement was of particular concern to have a uniform material that footers were placed on. Other duties included verification of testing reports from a third party testing firm.

EDUCATION

B.S. Civil and Environmental Engineering, 2006, University of Pittsburgh

REGISTRATIONS

Professional Engineer, Pennsylvania, 2012-Present

Professional Engineer, West Virginia, Ohio, Connecticut, Iowa, and Nebraska, 2014

Certified Professional in Erosion and Sediment Control, 2011-Present

ACI Field Testing Technician, Grade I, 2006-Present

Erosion and Sediment Control Certification, Maryland, 2006-Present

TRAINING/CERTIFICATIONS

Risk Management Training, GAI Consultants, Inc., May 2012

24-hour Mine Safety and Health Administration Training, U.S. Department of Labor, January 2012

FERC Environmental Review and Compliance for Natural Gas Facilities Training, Chicago, IL. August 2011.

Chapter 102 Update Training for the Regulated Community, PaDEP, February 2011

PennDOT Basic Construction Inspection Part 1, PennDOT, July 2009 Confined Space Awareness Training, GAI Consultants, Inc., March 2009 High Performance Management Training, GAI Consultants, Inc., October 2008

Geosynthetic Best Management Practices for Stormwater Management, ACF Environmental, May 2008

OSHA 10-hour Safety Training, 2007

YEARS OF EXPERIENCE

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Engineer-In-Training; Dominion Cove Point, LNG. Dominion Cove Point Expansion Project Field Monitoring. Conducted field monitoring of erosion and sedimentation control construction and maintenance of a Phase III archeological site located in Waldorf, Maryland.

Engineer-In-Training; Dominion Cove Point, LNG. Construction Quality Assurance Plan for Dominion Sedimentation Pond Construction. Performed soil sampling of materials used during construction of sedimentation pond and identified materials unsuitable for construction. Tested density and moisture content of compacted materials with the Troxler moisture/density gauge and observed pond construction to assure the quality of the final product.

Senior Engineer-In-Training; Allegheny Energy. Allegheny Energy Hatfield's Ferry Station. Construction monitoring of a landfill, sedimentation pond, and haul road to comply with environmental regulations for a new scrubber system that was installed at the power plant. Duties included Quality Assurance monitoring for all phases of the project.

Engineer-In-Training; Reliant Energy. Low Permeability Cementitous (LPC) Material Grouting for Reliant Energy at the Cheswick Power Station, Scrubber Project. Performed tests to determine content and consistency of mix and transported samples.

Senior Engineer-In-Training; Reliant Energy. Concrete Field Testing at Reliant Energy Keystone Power Station for the Flue Gas Desulphurization (FGD) Systems Project. Performed concrete testing on mass pours (1,000 to 2,700 cubic yards) for the project, and field testing on mass pours for Shaw, Stone, and Webster. Tests performed included slump, air-content, unit weight, and temperature in accordance with ASTM C94 and molding 6-inch by 12-inch cylindrical specimens in accordance with ASTM C31.

Senior Engineer-In-Training; Allegheny Power. Spill Prevention Control and Countermeasure Retrofit for Allegheny Power Substations in West Virginia, Pennsylvania and Maryland. Involved with design and construction from start to finish for 61 substation projects.

DANIEL C. WITT, P.E.
PROJECT MANAGER/CIVIL ENGINEER

EDUCATION: B.S., Civil Engineering, The Pennsylvania State University, 1987

Graduate Courses toward M.S., Water Resources, Civil Engineering, University of Pittsburgh, 1990 – 1991

CERTIFICATIONS/REGISTRATIONS: Professional Engineer, Pennsylvania, 1993

EXPERIENCE SU MMARY: Mr. Witt is a project manager/project engineer with 26 years of environmental and civil engineering experience. Mr. Witt has managed work assignments to provide final design packages, investigative studies, construction oversight, remedial pilot studies, third party remedial design/remedial action oversight, and public meeting support. Several of the Sites that Mr. Witt has been involved with contained or potentially contained unexploded ordnance (UXO). As project manager Mr. Witt has supervised junior engineers, support staff, managed subcontracts, and coordinated staffing needs within and between offices. Mr. Witt has been responsible for preparing cost proposals, schedules, negotiation of contracts, and management of budgets. Mr. Witt has served as the primary point of contact between the company and client as well as representing the client to regulatory agencies and the public. Mr. Witt has coordinated the design and construction of water pipelines to support natural gas drilling operations. Mr. Witt has prepared Feasibility Studies and assisted to the preparation of Remedial Investigations and Site Investigations. As project engineer/modeling specialist, Mr. Witt has contributed expertise to hydrologic and hydraulic studies, surface water and groundwater fate and transport computer modeling studies. As project manager, Mr. Witt was responsible for the final design of four landfill caps/covers, four soil removal actions, and one air sparging/soil vapor extraction system at a Naval facility in Virginia. Served as the project manager for two work assignments from the USEPA to provide oversight assistance for the remedial design, construction, and long-term monitoring at a Superfund site in Pennsylvania. The remedial action included the construction of a multilayer landfill cap which was opened to the public as a sports complex following remediation and development. Mr. Witt has also managed projects involved in the preparation of Design/Build request for proposal, associated pre-design studies, and cost estimates.

As project engineer, Mr. Witt coordinated and supervised the production of construction drawings, specifications, cost estimates, and contract documents for landfill closure and highway design projects. Prepared value engineering/feasibility study for a coal fired power plant in Virginia. The feasibility study for the power plant included evaluation of several methods to achieve discharge limits from runoff from the plants coal combustion byproducts (CCB) landfills including piping the water via several routes. Served as technical lead and coordinator of numerous landfill cap designs. Responsible for geometric design of highways, hydrologic and hydraulic design of bridges and culverts, and design and analysis of storm-water control facilities. Performed backwater and scour analyses from bridges and culverts in various states.

Mr. Witt served as task lead for surface water and infiltration fate and transport modeling at a large Department of Energy facility in Ohio. Mr. Witt performed fate and transport modeling accounting for biodegradation at a government facility in Texas. Mr. Witt conducted a hydrologic and hydraulic analysis for a Superfund site including design of flood retention basin

and associated spillways and levees. Mr. Witt conducted slope stability analyses at several sites. Mr. Witt designed storm-water controls and facilities for remediation activities at several closed uncontrolled landfills on the National Priority List.

Lead Engineer; Design Documents, Landfill Cap – Naval Station Annapolis, Annapolis Maryland; February 2009 through November 2012. Coordinated the development of design packages to close this 38 acres site that includes an operating Naval Commissary and Exchange. The project involves capping and consolidation of an approximately 9 acre landfill. Portions of the landfill are located beneath the parking areas associated with the naval exchange and other areas are located in a steep ravine. The project also includes rehabilitation of a berm impounding a 8 acre lagoon at the base of the landfill. The berm separates the lagoon from the Severn River. The project included wetland delineation, geotechnical field investigation, site work (including paving design, and utility replacement). Work also included offsetting an increase in paved area of the parking lots by incorporating environmental site design (ESD) into the design using non-rooftop disconnection to treat runoff from a portion of the parking lot. Provided support during construction including engineering associated with the discovery of additional areas to be capped and asbestos in the landfill.

Project Engineer; Landfill Gas Migration Mitigation Plan; Site 17 Naval Support Facility Dahlgren, Virginia; July 2006 – March 2008. Prepared a landfill gas migration mitigation plan for this closed landfill. The mitigation plan included compiling and a summarizing years of landfill gas investigations results, evaluating gas migration pathways and proposing gas mitigation measures. The report made recommendations for a permanent passive gas collection trench, installation of real time monitors in adjacent buildings, and installation of additional permanent gas monitoring points.

Project Engineer; Naval Weapons Station Earle, Landfill Cap Design for Sites 4 and 5, U.S. Navy, Colts Neck, NJ, March 1997 to January 1998. Coordinated the final design of two landfill caps including pre-design investigations, preparation of drawings, specifications, cost estimates, Design Basis report, Environmental Permits report, and Erosion and Sediment Control Plan and Report. Coordinated design work for a project manager located in separate office including writing the cost proposal, scheduling, assigning project staff and acting as liaison to various departments within the company. Design included multilayer landfill caps at two sites. The design for one of the landfill caps included the design of a Skeet Range facility on top the landfill cap including associated utilities, walkways, parking areas, and provisions for a clubhouse.

Engineer; Area A Landfill Design, New London Naval Submarine Base, U.S. Navy, Groton CT, February 1995 to June 1995. Performed stability analyses for the construction of a low permeability cap on an existing landfill. Analyses involved infinite slope calculations, deep circular and sliding block analyses using the computer code PCSTABL5M. Both effective and total stress analyses were performed.

PRABHA S. (PETE) VERMA, P.E.

DIRECTOR – GEOTECHNICAL STRUCTURES AND ENGINEERING

EDUCATION: M.S., Civil Engineering, University of Pittsburgh, 1994

M.S., Mining Engineering, Pennsylvania State University, 1980

B.S. Honors, Integrated Engineering and Mining Engineering, Indian Institute of Technology (IIT-BHU), 1976

CERTIFICATIONS/

REGISTRATIONS: Professional Engineer, Pennsylvania, [redacted], 1989

Professional Engineer, Maryland, [redacted] 2003

Professional Engineer, Virginia, [redacted] 2003

EXPERIENCE SUM MARY: Mr. Verma has over 30 years of diversified experience in geotechnical and civil design for infrastructure, environmental and power plant projects. He has extensive experience in the areas of geotechnical engineering, municipal, hazardous and residual waste landfill designs, materials handling, surface water hydrology, hydrogeological analysis, general civil and concrete design, subsurface investigation, foundations design, retaining walls, sheet pile design, cellular structures and cofferdam design, slurry walls, MSE walls, groundwater analysis and dewatering, materials processing, site work, pipeline/gas industry related grading plans and E&S plans, and construction support.

Mr. Verma is uniquely qualified with a blend of experience in design, construction as well as research projects. He developed a process for extracting magnetite from fly ash which became the basis of the first magnetite extraction plant by TVA. He also developed a technical procedure to analyze multiple pumps feeding into a common force main.

Mr. Verma has worked on engineering designs and supported construction for diversified array of projects, ranging from commercial projects as small as $4,000 to large projects up to $26 million dollars in value. His commercial clients include Exxon-Mobil Corporation, International Paper Corporation, Ashland Oil Corporation, Arco Chemicals, and International Fuel Harvester, while the government clients include the Department of Energy, Department of the Navy, U. S. Army Corps of Engineers, and Department of the Interior.

He has prepared design packages for general civil (hydrology, grading plans, site work, pumps/piping and others) and geotechnical structures projects, permit application, erosion and sediment control plans, storm water management plans, specifications, bid packages and proposals.

Senior Project Engineer/Consultant; U. S. Department of the Navy, NAVFAC Washington; LANTDIV REC – Several Projects; Project Value: >$1000 million; Several Sites in Maryland, Virginia, N ew E ngland S tates, N . C arolina and C anada; 1994 -2011. Reviewed and coordinated design for construction of more than 80 environmental projects that included landfill caps, grading plans, drainage and hydrological designs, geotechnical designs, erosion control structures, and permitting over a period of 15 years. Provided alternate designs to improve

technical effectiveness, constructability and costs. Conducted forensic analysis of seven failed landfills and dams, and proposed unique and workable remedial solutions. The some of the scope of work is highlighted in the following. Lead engineer for more than 12 design-build contracts that included landfills, deep excavations and redesigned repairs.

Lead engineer (1994-95) for the preparation of erosion and sediment control plan to secure MDE permit for a landfill at Naval Training Center, Bainbridge, Maryland. The scope included seven sediment basins and traps, several channel designs, and diversions. The cap that was designed by others in 1995 which failed in 1998 in despite of 5H:1V slopes and apparently credible cap design. Mr. Verma performed forensic analysis (with a well-known national expert and USACE-Omaha) and developed design criteria for new construction (Redesign and reconstruction cost: $9 million).

Resident Technical Consultant (1998) for the construction of ocean-front McAllister Landfill, Rhode Island. The project involved cap construction, armor wall construction, and portable dam in order to provide a clean dry work area against the tidal height of up to 10 feet. Mr Verma worked directly with the Navy in order to work out design simplifications and task eliminations to expedite the project. Designed and supervised the construction of a 600-foot long gabion wall retaining structure that supported a slope and adjacent roadway above.

Senior engineer (1997) for geotechnical investigations and testing for deep and shallow foundation designs for the treatment facility and other structures at Camp Allan, Virginia. The deep foundation included the design of 96 tapered driven piles and associated pile cap with a tolerable settlement potential to support the loadings inside the building under conditions of high water table and poor soil conditions. The shallow foundations in the post design phase during construction encountered difficulties in compaction due to rolling soils. Developed protocol for handling construction on rolling soils.

Designed a 1800-foot long sheet pile wall, breakwater structure, and a leachate collection system for the remediation of an ocean-front landfill at Argentia Naval Base, Newfoundland, Canada (1996). Developed grading plans and cap design for the 12-acre landfill. Monitored construction at site during critical phases. The challenges included up to 15 ft high waves and high winds. Prepared construction drawings, specification, work plans and developed quantity estimates.

Senior engineer (1998) for the ***complete redesign of a cap system, grading plans, surface and infiltration water system design, deep leachate collection trenches, and gas collection and flare system***. The cap redesign was to accommodate the availability of the materials locally and also limited available work space. The redesign effort and subsequent construction saved the client $1.5 million. The landfill slopes, cap and water handling systems performed impeccably during a 500-year storm event two years after the construction.

Senior consultant (2003) for the redesign of a cap that was built in 2001 and had failed in one portion of the 10-acre MCB-2 landfill at Marine Corps Base, Quantico, Virginia. The portions of the landfill (designed and built by others) failed at three other locations in years 2004 through 2010, which were rebuilt using the initial (2001) design concepts and procedures. The challenges included 2.6H:1V slopes and limited availability of the suitable construction materials.

Senior Consultant; US Army Corps of Engineers; Landfill Nos. 1 and 6; Project Value: $6.5 million; Fort Chaffee, Arkansas; 06/2000 to 12/2002. Lead designer for two projects at an old U.S. Army base facility. The project included the closure of a 6-acre landfill with multilayer cap and the closure of a 36-acre landfill with clay cap. An extensive borrow area investigation and

characterization was necessary prior to the construction. Operational performance parameters were established for the clay cap installation using Daniel's window and test pad construction, so that the desired permeability criteria of the clay cap construction could be assured with a minimum field testing during the actual clay cap installation. Designed drainage system, and infiltration gallery for the disposal of on-site contaminated water.

Senior Consultant; Pennsylvania Department of Environmental Protection; Landfill Slope Repair & Landfill Cap Design and Construction – American Fuel Harvester; Project Value: $0.75 million; East Bangor, Pennsylvania; 05/2002 to 10/2003. Signs of cracking in the utility road threatened the stability of the road and the landfill located above. Analyzed the stability of 80-foot high slope that supported the utility road. Provided design recommendations and specifications. Coordinated with construction to successfully achieve project objectives and site stability. Developed grading plans, drainage plans including channels, diversions and sediment traps, and HDPE cap configuration for the containment of the 7-acre landfill that had a significant amount of woody material buried in it and was undergoing spontaneous combustion. The other concern in addition to spontaneous combustion included long term settlements. The remedy involving excavation, quenching and replacement was prohibitively expensive. A unique simple solution was implemented so that the air supply to the spontaneous combustion would be cut off, and at the same time would not allow gas pressure to build up. The system appeared to have worked successfully and the spontaneous combustion issue was controlled.

Senior Consultant; International Paper Corp.; Masonite Wood Fiber Facility Capping; Project Value: $0.40 million; Central Pennsylvania; 2/1998 to 8/1998. The project involved capping a 13-acre above ground wood fiber pile with an exposed geosynthetics liner. The design incorporated many innovative aspects, including features against uplift due to high winds, surface water management and underground disposal, and liner selection to withstand weather extremes and environmental stress. The surface water runoff handling faced the situation of low time of concentration and resulting high peak runoffs, topography surrounded by high hills, high groundwater and the requirement of no visible features on the ground for surface water storage. The completed project design was awarded a top performance rating by the client that led to subsequent project construction award to the design company.

Technical Manager; Confidential Client; Martha Landfill; Project Value: $0.6 million; Ashland, Kentucky; 2/2002 – 11/2002. Managed the design and construction for the remediation of a failing slope located immediately below the low level radioactive waste landfill cell. The scope included site investigation, design, and preparation of construction documents for the remediation measures in order to prevent the progress of the slope failure. Supervised quality control and provided technical support during construction on this design-build project. Installed inclinometers and monitored the movement over a period of 6 months.

Lead Engineer/Project Manager; Waste Management of Ohio, Inc.; Countywide Landfill; Project Value (design only): $1.5 million; East Sparta, Stark County, Ohio; 1991-1992. Project manager and lead design engineer for the design of a 90-acre municipal waste landfill in Ohio. The project involved geotechnical and hydrogeological testing and analysis, development of grading plans, leachate management systems design, phase development plans, liner system design, surface water management design, and gas extraction systems design. Led a team of nine professionals to prepare construction level permit drawings and systems design for this 15-million cubic yard landfill. Developed plans, specifications and bid documents for the first 12-acre cell construction of the landfill, and coordinated construction.

As a part of the leachate management systems design for the above project, Mr. Verma developed a pump network analysis system to analyze the performance of pumps where two or more pumps feed into a common force main.

Design Manager; Mostoller Landfill; Project Value (design only): $0.4 million; Somerset County, Pennsylvania; 1993-94. Managed major modifications in the design of a 100-acre landfill in western Pennsylvania to accept both residual and municipal wastes. The design modifications pertained to regulatory compliance of both residual and municipal landfill regulations, constructability issues and increasing the capacity of the landfill.

Principal Engineer; Waste Management of Ohio, Inc.; Landfill Siting and Borrow Source Characterization, and Gas Extraction Systems Design; Project Value (design only): $1.8 million; Southeastern Ohio; 1992-1994. A 250-acre landfill was proposed at a location that had been mined. Landfill siting included an extensive and sophisticated array of geotechnical instrumentation, methods and analysis, including settlement pad/tubes, in-situ shear testing and in-situ unit weight. The borrow source evaluation included soil borings, test pits and vertical/horizontal delineation of the clay source that was very tightly specified in the State regulations. During design phase, designed an active gas management system which included 140 extraction wells, 18 horizontal wells and 9 header loops.

Senior Engineer/Project Manager; Municipal Authority of Westmoreland County; Westmoreland County, Pennsylvania; 3/1991 – 9/1991. Designed a 30-cfs active gas management system as a part of the 12-acre cell closure. Developed bid documents and administered the bid process. Monitored construction of the gas collection system. Managed the preparation of a liner system design and QA/QC documents for this landfill in Pennsylvania.

Senior Engineer/Project Manager; Landfill Design; Puerto Rico; 3/1991 - 9/1991. Coordinated geotechnical testing program, performed liner design calculations, settlement analysis and developed grading plans for the landfill.

Section Manager; Federal Emergency Management Agency (FEMA); **Total Project Value – $10 million/year; 1986 - 1991;** Section Manager in charge of geotechnical evaluations of design calculations, construction plans and specifications of all flood control projects including dams, levees, flood/retaining walls etc in the Western USA for a period of five years.

WILLIAM C. SMITH, P.E.

SENIOR PROJECT MANAGER

EDUCATION: Masters of Public Management (Concentration in Information System Management and Finance), Carnegie Mellon University, Heinz School of Public Policy and Management

B.S., Civil Engineering (Geotechnical Concentration), University of Pittsburgh, 1982

TRAINING: OSHA 29 CFR 1910.120 HAZWOPER Health and Safety Training

SafeLand Training

CERTIFICATIONS/ REGISTRATIONS: Professional Engineer, Pennsylvania, U.S. Virgin Islands

Mr. Smith has more than 30 years of engineering experience, including managing the design and construction of multi-million dollar construction projects. His remediation expertise includes engineering design and permitting of site construction and environmental remediation projects. He has served as a construction contractor and project manager for site development and environmental remediation projects. Mr. Smith's experience also includes various pipeline projects and other support for E&P clients operating in the Appalachian Basin Shale Plays. He has served as a construction contractor and project manager for site development and environmental remediation projects.

Project Manager; Fly Ash Impoundment Closure; AEP; West Virginia. Managed the investigation and design for the closure of an 80 acre fly ash impoundment and a 12 acre bottom ash impoundment. Project included identification and investigation of nearby borrow areas.

Project Manager; Sludge Impoundment Capping for RCRA Corrective Action; Confidential Client; Ashtabula, OH; $6,000,000. Construction of 30-foot deep groundwater/DNAPL collection trenches using bio-polymer slurry trenching techniques, waste relocation, 70,000 CY of earthwork using onsite borrow area, wick drain installation and geogrids for ground stabilization, and geosynthetic capping of five areas (two sludge impoundments and three disposal areas) totaling 22 acres using GCL, smooth and textured LLDPE, and single- and double-sided geocomposite.

Project Manager; Seep Collection System Construction; Confidential Energy Client. Project included new access roads, multiple seep collection drains, fusion weld two-inch through ten-inch HDPE pipe, installation of eight pumps, three collection vaults, and one combined flow manhole. Mr. Smith prepared the budgetary construction estimate for an additional pipeline and collection system planned as a future capital project.

Project Manager; New Kensington Treatment Facility Excavation and Underground Piping; New Kensington Sanitary Authority; New Kensington, PA. Excavation and underground piping for a new pump station at the New Kensington Sanitary Authority treatment facility. Excavation included a 55-foot deep, 110-foot diameter cofferdam; installation of 48-inch ductile iron piping at a depth of 35 feet; 4,000 lf of intra-unit piping; and dewatering.

Senior Project Manager and Project Coordinator; Geosynthetic Landfill Cap Construction Management; B&E Landfill PRP Group; Circleville, OH. Design, contractor procurement, and construction management of a 22-acre geosynthetic landfill cap, value engineering, borrow area identification and development, and phytoremediation of groundwater seeps. Negotiated technical issues with EPA and performed budget control and forecasting cost to completion.

Senior Project Manager; Design and Construction Management; CBS Corporation. Design and construction management for a 118-acre facility with two landfill caps, two groundwater treatment systems, a SCADA system, polychlorinated biphenyl (PCB)-impacted soil removal, and paving as an engineered barrier to create additional leasable property.

Senior Project Manager; Landfill Gas Pipeline Design; Confidential Client; Pine Grove, PA. Design of a one-mile low pressure landfill gas pipeline from a landfill gas collection system to a local manufacturing facility.

Senior Project Manager; Landfill Closure Design and Construction and Subaqueous Cap O&M; Indiana Steel & Wire, Muncie, IN. Designed the closure for two landfills in the flood plain of the White River, waste consolidation, XRF screening, and construction monitoring during capping. For the quarry pond sludge, performed bathymetric surveys and subbottom profiling to document the construction of a subaqueous cap over the soft sediment. Routine bathymetric surveys and sediment pore water sampling were performed as part of annual monitoring of the subaqueous cap condition and performance.

Senior Project Manager; Blosenski Landfill Superfund Site Design and Construction Support; Blosenski Landfill PRP Group. Design and construction support included value engineering of an existing EPA design; remedial design; capping an eight-acre hillside landfill; excavation, characterization, and disposal of over 500 buried drums; and field construction monitoring.

Project Engineer; Multi-Layer Synthetic Cap; New Castle, DE. 52-acre, multi-layer synthetic cap, associated E&S control structures, and approximately 350,000 cy of engineered fill.

Project Engineer; Superfund Site Cap and Slurry Wall; New Castle, DE. Design of geosynthetic cap and slurry wall at a top ten Superfund site.

Project Engineer; Sanitary Landfill Expansion Project; Confidential Client. Site characterization, design, and permitting for a proposed 300-acre sanitary landfill expansion project.

Project Engineer; Landfill Conceptual Design and Cost Estimating; Confidential Client; Puerto Rico. Performed conceptual design and construction cost estimating services for two landfills in Puerto Rico.

Charles Warino, P.G.

GEOSCIENTIST IV

EDUCATION: BS, Geology, Youngstown State University, 2003
MS, Geology, University of Akron, 2008

CERTIFICATIONS/REGISTRATIONS: Pennsylvania, [redacted], 2010
Alabama, PG No. [redacted], 2013

EXPERIENCE SU MMARY: Mr. Warino has ten years of experience specializing in environmental and geotechnical site assessment, remediation, construction management, and project management. During this time, he has provided data collection, analysis, testing, reporting, and project and task management services on large U.S. Government contracts; as well as, smaller commercial projects involving investigation and remediation at hazardous waste, retail petroleum (UST and pipeline), midstream natural gas, and mining operation sites. He has experience in collecting water, soil, soil gas, and air samples; monitoring well and soil boring installation; exploration and geotechnical boring installation; bedrock coring and overburden logging; UST excavation oversight, pipeline construction oversight, and remedial system installation and operation and maintenance. Mr. Warino has also conducted remedial system pilot tests, pumping tests, high pressure injection tests, and slug tests. He also has experience conducting geophysical surveys using ground penetrating radar, electrical resistivity, and electromagnetic techniques. He has been involved in the analysis and reporting of hydrogeologic, geophysical, geotechnical, geochemical, and remediation data for site characterization, site status, and site monitoring reports. Mr. Warino also has experience conducting field reconnaissance, deed searches, and reporting for phase I and Phase II environmental assessments.

PROJECT EXPERIENCE:

Geoscientist/Project Manager; AST inspection and certification; Confidential Client; West Virginia; 2014. Project manager/Field Operations Leader for West Virginia AST inspections and certifications, and production of Spilll Prevention and Response Plans and Spill Prevention Control and Countermeasure Plans to comply with recently passed legislation.

Geoscientist; AST inspection and certification; Confidential Client; West Virginia; 2014. Field Operations Leader for West Virginia AST inspections and certifications, and production of Spilll Prevention and Response Plans.

Geoscientist; AST inspection and certification; Confidential Client; West Virginia; 2014. Field Operations Leader for West Virginia AST inspections and certifications.

Geoscientist; Pipeline construction oversight; Confidential Client; West Virginia; 2014. Provided construction oversight and E&S inspection for the installation of PE water lines for natural gas production. Responsible for insuring pipeline was constructed as designed, and oversight of pigging and testing for leaks before operation.

Geoscientist; Geotechnical Investigation for natural gas compressor station pad; Confidential Client; West Virginia; November 2013. Led a geotechnical investigation for placement of natural gas compressor station pad, access road, and determination of slope stability. Conducted drilling oversight and borehole logging, and drafted geotechnical summary reports detailing results.

Geoscientist; Geotechnical Investigations for several natural gas well pads; Stone Energy; West Virginia; May - July 2013. Led geotechnical investigations for placement of natural gas well pads, access roads, and determination of slope stability. Conducted drilling oversight and borehole logging, and drafted geotechnical summary reports detailing results.

Geoscientist; Pipeline Route Field Proofing; Confidential Client; Eastern Ohio and Western Pennsylvania; December 2013 - January 2014. Assisted in locating areas of concern through aerial photography and field proofing to adjust pipeline route. Also assisted in reviewing road crossings and recommending the type of crossing to be used in the design.

Geoscientist; Excavation oversight; Confidential Client; Southwest Pennsylvania; Spring 2013. Excavation oversight for the installation of a new pipeline and pig launcher at a compressor station, including management of any contaminated material encountered during the excavation.

Geoscientist; Geotechnical Investigation for Frac Water Treatment Facility; Confidential Client; Southwestern Pennsylvania; January 2013. Led a geotechnical investigation for placement of water storage tanks and slope stability. Conducted drilling oversight and borehole logging, and drafted geotechnical summary report detailing results.

Geoscientist; Flowback water sampling; Multiple Clients; Pennsylvania, West Virginia, and Ohio; November 2009 to December 2012. Collecting water samples from different stages in the fracking process for characterization purposes.

Geoscientist; Staff Gauge Installation; Multiple Clients; Southwestern Pennsylvania; September 2009 to January 2013. Responsible for installing staff gauges and collecting water velocity readings at several surface water sources in support of water management plans for natural gas well locations throughout southwestern Pennsylvania.

Geoscientist; Injectivity Testing; Atlas Energy; Southwestern Pennsylvania; September 2009 to January 2010. Responsible for overseeing injectivity tests at several natural gas wells throughout southwestern Pennsylvania. Responsible for coordinating field crew and collecting pressure and flow readings, along with samples of the injection brine. Also responsible for keeping injection tests within constraints set by the EPA, Atlas, and Tetra Tech NUS, INC.

Geoscientist; Natural Gas Well Pre-Drill Sampling; Marathon Oil; Southwestern Pennsylvania and Northern West Virginia; April 2009 to October 2009. Was responsible for collecting pre-drill baseline soil, surface water, and groundwater samples at several future natural gas well locations. Acted as Field operations leader for sampling events, contacting property owners and relaying information to Marathon Oil.

Geoscientist III; UST closure in-place and soil excavation; PADEP IRRSC; Former service station in Bulger, Pennsylvania; March 2013. Served as field operations leader and oversight for soil excavation and UST closure in-place, and drafted the closure report.

Geoscientist III; UST Sites 9 & 13 Marine Corps Air Station Beaufort; Navy; Beaufort, South Carolina; April 2010 to March 2013. Served as project manager for an LNAPL recovery and long term groundwater monitoring project at MCAS Beaufort for the Navy spanning two

storage tank facilities. Formulated a UFP-SAP to monitor the LNAPL levels and recovery efforts, and to monitor the selected remedy of natural attenuation at the sites, and produced semi-annual monitoring reports describing the progress of the monitoring activities.

Geoscientist III; Greys Reef Light Station; Coast Guard; Emmet County, Michigan; July 2008 to August 2012. Was responsible for investigating free product located within light station foundation. Was involved in formulating several remediation solutions and drafted the Site Assessment Summary report. Acted as field operations leader during a subsequent site visit to further investigate the extent of contamination. Was responsible for overseeing a dive crew and remediation subcontractor during the site visit.

Geoscientist II; NWIRP Bethpage; Navy; Bethpage, New York; January 2009. Was responsible for installing extraction wells, installing a dual blower vapor extraction system, and running pilot scale soil vapor extraction tests at varying extraction rates.

Geoscientist III; Commercial Clients, Pennsylvania; July 2010 through October 2012. Conducted site characterization investigations for Phase II environmental investigation reports. Drilling oversight, including soil borings and monitoring well installations. Drafted the Phase II reports.

Geoscientist III; Commercial Clients, Pennsylvania; July 2010 through April 2012. Assisted in the field reconnaissance, file review, and reporting for phase I environmental assessments.

Geoscientist III; NSA Mechanicsburg; Navy; Mechanicsburg, Pennsylvania; July 2010 through April 2012. Was responsible for installing deep bedrock monitoring wells in fractured limestone to assess the vertical mobility of contamination in groundwater. Water bearing fractures were identified and isolated for sampling, and monitoring wells were set according to analytical results. Also conducted bedrock coring and matrix sampling.

Geoscientist III; Former Naval Construction Battalion Center (NCBC) Davisville; Navy; North Kingstown, Rhode Island; December 2009 to March 2012. Was responsible for drafting the 2008/2009 and 2010/2011 annual reports pertaining to groundwater monitoring and sediment sampling at Calf Pasture Point (Site 07). Responsible for creating geologic cross sections, vertical and horizontal flow nets, and contaminant plume migration mapping.

Geoscientist II; Portsmouth Naval Shipyard OU2; Navy; Portsmouth, NH; November 2007 to May 2008. Was responsible for installing monitoring wells and soil borings, soil logging, field screening, and collecting soil and groundwater samples. Also responsible for drafting the geologic sections of the draft RI report.

Geoscientist II; Marine Recruit Depot; Navy; Parris Island, South Carolina; August 2008. Was responsible for installing monitoring wells and soil borings, soil logging, field screening, and collecting soil and groundwater samples. Also responsible for drafting the geologic sections of the draft RI report.

STEPHANIE WARINO, P.G., WV LRS

OPERATIONS MANAGER

EDUCATION: B.A.; Geology; The University of Akron, Akron, Ohio; December 2002

M.S.; Geology; The University of Akron; Akron, Ohio; December 2004

CERTIFICATIONS/

REGISTRATIONS: Professional Geologist [Pennsylvania; [redacted]; 2010]

Licensed Remediation Specialist [West Virginia; [redacted] 2014]

EXPERIENCE SUMMARY: Ms. Warino is the Operations Manager for the Fairmont, WV office. Her responsibilities include resource allocation, budgeting, project oversight, and business development. She has nearly 10 years of experience specializing in environmental site assessment, remediation, and project management. During this time, she has managed and supported projects for oil & gas, mining, commercial, and government sectors, and has been responsible for identifying and conducting work in accordance with the various regulatory programs and guidance governing them. She has experience providing geologic and hydrogeologic technical support including data analysis, interpretation and statistical analyses, and has experience in collecting water, waste, sediment, soil, and air samples, as well as experience in overburden and rock logging and well installation oversight. Ms. Warino leads project planning efforts, including proposals, budgeting, design and execution of field sampling events, and management of subcontractors. Ms. Warino currently manages projects for Oil & Gas clients in West Virginia, and also manages projects for the United States Navy, including underground storage tank (UST) sites, waste disposal (RCRA) sites, and Superfund (CERCLA) sites.

PROJECT EXPERIENCE:

AST inspection and certification; Confidential Client; West Virginia; 2014-2015; $750,000. Program manager for West Virginia AST inspections and certifications, and production of SPRP and SPCC plans to comply with recently passed legislation.

AST Inspection and certification, Confidential Client; West Virginia, 2014-2015; $15,000. Project manager for West Virginia AST inspections and certifications, and production of SPR plans to comply with recently passed legislation.

AST Inspection and certification, Confidential Client; West Virginia, 2014-2015; $2,500. Project manager for West Virginia AST inspections and certifications, and production of SPR plans to comply with recently passed legislation.

Geotechnical Investigations for natural gas well pads; Confidential Client; West Virginia; 2013. Evaluated geotechnical boring logs installed for placement of natural gas well pads, access roads, and determination of slope stability. Reviewed geotechnical summary reports detailing results.

Water Management Planning; Multiple Clients; Southwestern Pennsylvania; 2013. Responsible collecting water velocity readings at several surface water sources in support of water management plans for natural gas well locations throughout southwestern Pennsylvania.

Project Manager; Long Term Monitoring for UST Sites 3, 9, 11, 13 and SWMU 8 at MCAS Beaufort, Beaufort South Carolina. $338,000; May 2011 to present. Responsible for producing planning documents, oversight of field investigations related to potential groundwater contamination, and reporting.

Project Manager; Well Installation and Sampling for Laurel Bay Military Housing Marine Corps Air Station Beaufort, Beaufort, South Carolina; $250, 000; June 2009 to present. Responsible for producing planning documents, oversight of field investigations related to potential groundwater contamination, and reporting for a large UST site at Marine Corps Air Station Beaufot, South Carolina.

Project Manager; Groundwater Monitoring and Reporting for Site 7, Former Burn Pit at U.S. Coast Guard YARD, Baltimore, Maryland; 2011 to present. Manage technical execution for this fixed-price task order to perform quarterly groundwater monitoring and reporting and prepare draft and final reports for each site and each sampling event. Evaluate USCG requirements to properly allocate project resources (Tetra Tech and subcontractors); direct fieldwork activities; direct report preparation and resolve technical issues impacting project success. Evaluated site data to recommend cost-effective reductions in the sampling program, which was approved by regulatory agencies. These changes resulted in significant cost savings to USCG.

Project Manager; Groundwater Monitoring and Reporting for Former Navy Dispensary and Barracks Release Site (FNDBRS) at U.S. Coast Guard Support Center Elizabeth City (SCEC) Elizabeth City, North Carolina; $150,000; 2008 to 2011. Manage all aspects of technical execution and administration for this fixed-price task order to perform semi-annual groundwater monitoring and reporting and prepare draft and final reports for each site and each sampling event. Evaluate USCG requirements to properly allocate project resources (Tetra Tech and subcontractors); direct fieldwork activities; direct report preparation; and resolve technical issues impacting project success. Ms. Warino recently evaluated historic and current site data to determine appropriate reduction in sampling frequency and analytical program, which was approved by regulatory agencies, resulting in significant cost savings to USCG.

Project Manager; Operation, Maintenance, and Monitoring Program for Operable Unit 3, U.S. Navy, EFANE/CLEAN; Portsmouth Naval Shipyard, Kittery, Maine; $450,000; 2008 to present. Ms. Warino serves as project manager for Post-remedial Operation, Maintenance, and Monitoring (OM&M) for a closed landfill at PNS in USEPA Region I and is responsible for allocation of project resources (Tetra Tech and subcontractors), direction of field activities, and preparation of technical reports. Ms. Warino is responsible for the update to the OM&M Plan data quality objectives, which impact long-term optimization of the sampling plan, and responsible for the update to the O&M Manual. The project also involves the data evaluation, reporting, and recommendation for long-term optimization based on the first nine rounds of monitoring.

Larry N. Deutsch

Construction Superintendent

EXPERIENCE SUMMARY

Mr. Deutsch has spent more than 41 years working in the geotechnical, civil, environmental and steel industries. His areas of expertise include engineering, construction, mining and trades, energy/utilities, environmental services, project/program management, QA, and health and safety.

EDUCATION

Coursework; Advanced Mathematics; University of Pittsburgh; 1980 – 1981

YEARS EXPERIENCE

41-Geotech & Environmental Engineering Fields Combined

11-Geotech & Environmental Drilling

4-Steel Industry

REGISTRATIONS & TRAINING

- OSHA 30-Hr. Construction Safety and Health Training
- OSHA 40-Hr. HAZWOPER
- Excavation-Competent Person Certification
- SafeLand USA Certified
- 2015 Noble Energy Safety
- MSHA 24-hour
- 2015 CNX Safety-ENV & GAS

Construction Superintendent; RCRA Landfill Remediation, Bayer MaterialScience, New Martinsville, WV 2011 -2012. Serving as the lead Construction Superintendent through design and implementation of an 8-acre RCRA Landfill Capping System, this project started design in 2011 with the construction of the approved remedy completed in April of 2012. The project consisted of approximately 14,000 cubic yards of waste excavation and consolidation, slurry stabilization using Calciment and the installation of a 40 mil textured HDPE liner system including geotextile and geocomposite layers; and a groundwater extraction and recovery well system. The 8-acre site closure was comprised of four (4) solid waste management units (SMWU's) including a 4-acre Landfill (SWMU 1), 2-acre Sludge Lagoon (SWMU 2), the 24 ft. by 36 ft. concrete Hydro Blasting Station (SWMU 3), and 1-acre Ash Lagoon (SWMU 4). During the design phase of the project, I assisted the Project Engineer with design and the Construction Manager with contract negotiations and subcontracting. Authored the Construction Completion Report for submittal to WVDEP, USDEP and the USACE.

Construction Manager; Washington's Landing, Herr's Island, Urban Redevelopment Authority, Pittsburgh, PA. Responsible for the management, oversight and coordination of ICF Kaiser's on-site staff and contractors. ***Monitored and inspected the installation of a double-lined synthetic RCRA encapsulation cell with leachate collection and leak detection systems to meet requirements*** as set forth by the Pennsylvania Department of Environmental Resources (PADER). This cell consisted of approximately 90,000 sq. ft. of high density polyethylene (HDPE), which was designed to hold an estimated 15,000 cubic yards of PCB-contaminated soils and building debris that was later modified to accept an additional 3,000 cy. Guided the contractor in the excavation and removal of 18,000 cy of these contaminated soils and debris that were then placed into the cell. Other responsibilities included assisting the client in conducting weekly progress meetings and the preparation of the contractor's monthly payment applications. This project was completed in the spring of 1990 and since its completion, the site has been developed with condominiums, tennis courts and equipment manufacturing, parks recreational boating wharfs and offices, which include the PADER.

C. JAY SANTA

Construction Manager

EXPERIENCE SUMMARY

Mr. Santa has more than 20 years of experience performing construction project and site management, the last three years for Marcellus Shale projects. His experience includes large earth moving projects, superfund site remediation, landfill construction and closure, utility installation and pipe work, soil remediation, water management and groundwater barrier construction.

EDUCATION

- BS, Earth and Mineral Science

YEARS EXPERIENCE

20

REGISTRATIONS & TRAINING

- USACE Construction Quality Management Training
- OSHA 30-Hr. Construction Safety and Health Training

RELEVANT PROJECT EXPERIENCE

Construction Manager; Marcellus Shale Well Pad Permitting, Design and Construction Services; Confidential Client; North Central, PA. Evaluating constructability of existing terrain and designs for five drill pad sites and 15 million gallon impoundment. Review including wetlands delineation, constructabiltiy, access roads, transportation review and permitting, well pad permitting, ESCGP-1 planning and permitting.

Construction Manager; Marcellus Shale Well Pad Design and Construction Services; Confidential Client; Southwestern, PA. Evaluating constructability of existing E&S plans and designs for four drill pad sites. As a result of this evaluation we were able to make revisions to save substantial cost and reduce schedule through cut/fill balancing, material selection and other modifications. Interaction with PADEP staff on behalf of client regarding field adjustments and expedited approvals. Development of bid documents associated with drill pad construction and recommending contractors based on bid evaluation. Oversight of construction at four drill pad sites for erosion and sediment controls installation, mass earthwork and grading, installation of surface drainage, installation of infrastructure, onsite aggregate evaluation, and revegetation restoration to meet DEP standards.

Business Development Manager; Remediation and Construction Services. Responsibilities include marketing and business development for existing client base and identifying and marketing new clients. Acts as client, project or program manager for new opportunities based on client requests. Executes projects from cradle to grave with safety and performance in mind. Identifies new opportunities, prepares technical scopes and detailed cost proposals, manages all aspects of construction projects including fiscal and technical requirements. Interacts with client from inception to project closeout to ensure project is being conducted to meet client goals.

Construction Manager; New Martinsville Design Build Landfill Closure; Bayer; New Martinsville WV. Key member of the team to successfully and competitively bid the design build of an 8-acre soil cap to close and hazardous waste landfill and ash pond. Project consists of mass earthwork, geomembrane cap, cover soil, dewatering, and miscellaneous groundwater management and collection.

Construction Manager; Building Demolition; Confidential Client; Boston, MA. Demolition of a 5800 sf light industrial building and remediation of subsurface soils. Awarded several modifications to contract based on exemplary performance of field activities.

Section D: History of Projects

Our capacity encompasses more than 80 disciplines with sufficient engineers, scientists, and support staff to fulfill a contract in any of its five service areas: water, infrastructure, the environment, energy, and natural resources. For those disciplines outside of Tetra Tech's capacity, the firm maintains excellent relationships with an extensive network of sub-contractors, including six to 12 mentor-protégé firms. Tetra Tech has additional projects, but for the sake of brevity, we have included only a sampling of recent work. Our firm has completed thousands of landfill-related projects nationwide. Summaries of tetra Tech's recent acquisition, Cornerstone Environmental, are also included.

Steel Industry Coke Plant – State-of-the-Art Wastewater Treatment Facility

Pennsylvania

CLIENT:

ArcelorMittal, Monessen, PA

PROJECT HIGHLIGHTS:

- State-of-Art Industrial Wastewater Treatment Facility
- Several wastewater storage tanks designed and constructed

Tetra Tech and GE Water and Process Technologies came together as a team to provide an EPC estimate to ArcelorMittal for the upgrade of their wastewater treatment plant. This plant, that produces 1,000 tons/day of coke, had been closed in 2009 until the owner could meet Effluent Limitation Guidelines under 40CFR Part 420 for the iron and steel making industry. There were eleven such "teams" invited to this bid opportunity.

NUS prepared the initial general arrangement drawings and the process flow diagrams for the entire project which were included in the EPC estimate for the pre-treatment system. Tetra Tech with GE provided the EPC estimate for the end-of-pipe system. We verified that the locations for the new equipment would fit in the available space at the Monessen Coke Plant.

After four months of successful testing of the GE process at the owner's Warren Coke Plant, we were awarded the engineering, design and procurement of equipment.

Tetra Tech and GE provided the engineering for the end-of-pipe system. Tetra Tech also provided the engineering for the pre-treatment system which includes:

- The replacement of two 300,000 gallon Waste Ammonia Liquor Tanks and replacing them with two 350,000 gallon tanks with the identical footprint.
- The addition of a new 300,000 gallon Equalization Tank.
- The design engineering for two new tar/oil separation tanks. These two tanks are the "keystone" for this process to be successful. We have designed a system that will separate the oil from the tar from the liquor, creating three side streams for further treatment. The major side stream is subsequently treated for ammonia removal and biological treatment in the state-the-art GE membrane system.
- The relocation and repurposing of two existing heat exchangers.
- The creation of eight Piping and Instrument Diagrams.
- The creation of twenty five piping design drawings together with pipe supports.
- The creation of ten apparatus drawings that included four tanks.
- The creation of three General Arrangement drawings.
- Ten site visits to field measure existing equipment and locations for placing equipment in the existing coke plant.

Northern Panhandle Landfill Closure Design

Northern Panhandle, WV

Client Name
Confidential Industrial Client

Project Highlights

- *Landfill closure work plan including drawings and specifications*
- *Evaluation of remedial alternatives*
- *Permitting*
- *Design of erosion and sedimentation controls*
- *Annual Groundwater Monitoring Report*

Project Cost
$200,000

Tetra Tech was retained by a confidential client to perform an evaluation and prepare a design and Remedial Action Work Plan for the closure of a landfill located along the Ohio River in West Virginia. The 5-acre landfill contained wastes from past disposal operations at the client's plant that, based on previous investigation, were impacting groundwater.

Tetra Tech:

- Performed a site characterization
- Prepared technical and economic evaluations of various options and recommended a preferred solution
- Designed a landfill cap consisting of a multi-layer system that included a geomembrane and geocomposite drainage layer
- Prepared a Remedial Action Work Plan for submittal to USEPA and the West Virginia Department of Environmental Protection (WVDEP)
- Designed stormwater management and sedimentation and erosion control facilities, including a basin to serve both functions
- Prepared a work plan for the installation of a recovery well and conveyance system for groundwater extraction and containment
- Prepared design drawings and technical specifications for bidding and construction of the closure system
- Prepared and submitted a Site Registration Application Form - Construction Storm Water - WV/NPDES General Permit
- Ongoing annual reporting of groundwater monitoring

East Mount Zion Landfill Design and Closure Activities

York County, PA

Client Name
U.S. EPA Region 3

Project Highlights

- *Design for an impermeable cap for the landfill*
- *Landfill closure activities*
- *Technical support to the EPA and regulatory compliance*

Tetra Tech was authorized by the U.S. EPA to perform Remedial Design for an impermeable cap for a 10-acre landfill in central Pennsylvania. The design services included evaluation and selection of suitable construction materials for a flexible membrane liner. Landfill closure activities included deed restrictions, collection and venting of landfill gases, and stormwater management. Trichlorethylene, benzene, and dichlorobenzene were causes of contamination on the site. Tetra Tech provided technical support to the EPA for all of the following tasks:

- Site survey
- Wetlands study
- Groundwater sampling and analysis
- Preparation of Quality Assurance, Health and Safety, and Field Sampling Plans
- Design plans and specifications for:
    - a multi-layer, impermeable cap
    - a passive gas vent system with capability for odor control
    - an appropriate contour for surface water control/site drainage;
    - access roads for movement of construction vehicles, and
    - a groundwater monitoring program to evaluate the effectiveness of the remedy through the post closure period
- Detailed operation and maintenance plan
- Bid and contract documents for remedial construction
- Compliance with all applicable requirements and regulations

Haley Pike Landfill Closure Design

Fayette County, KY

Client Name
Lexington-Fayette Urban County Government

Project Highlights

- *Largest landfill closure to-date in the state of Kentucky*
- *Use of synthetic materials in the closure cap reduces the client's cost by 25%*
- *Provided construction quality assurance and certification services*
- *Leachate management*

Project Cost
$9.4 Million

This innovative closure plan is for a 105-acre landfill, **making it the largest landfill closure to-date in Kentucky.** The closure design met the newest and most stringent landfill regulations for municipal solid waste landfills. Although the landfill had operated historically as a municipal solid waste landfill, a portion of the area on top of the fill remains in use as a construction debris (CD/D) landfill.

Key features of the proposed closure are:

- Use of synthetic materials in the closure cap eliminates the need to purchase and transport large volumes of expensive gravel and clay and **reduces cost by about 25%.**
- Design of an equalization basin and man-made wetlands to treat large quantities of leachate during the post-closure life of the facility. This system replaces the practice of pumping leachate from 30 manholes and hauling it 20 miles to LFUCG's treatment plant, **resulting in significant savings** over the post-closure life of the facility.
- Development of an incremental closure approach, allowing the continued operation of the CD/D disposal cell for four additional years. The incremental closure spreads costs over a five-year period and provides a continuing revenue stream from the CD/D operation.
- Initial Tier I calculations indicated that the landfill would require an active methane collection system. Tetra Tech performed Tier II testing, which showed that gas generation has peaked and is at a level that allows the use of a passive versus active methane collection system.

Tetra Tech provided construction quality assurance and certification services for constructing nearly 42 acres of closure cap, as well as the leachate handling and treatment system.

Wetland Leachate Treatment for Haley Pike Solid Waste Landfill Closure

Fayette County, KY

Client Name
Lexington-Fayette Urban County Government

Project Highlights

- *Largest landfill closure to-date in the state of Kentucky*
- *Use of a natural system to treat landfill leachate reduced disposal and treatment costs and conventional pollutants – this technique could be used and result in significant savings*
- *Provided construction quality assurance and certification services*

Project Cost
$900,000

Tetra Tech provided engineering and environmental science consulting services for the largest landfill closure to date in the Commonwealth of Kentucky. This project is the multi-phase closure of Lexington's 105-acre Haley Pike Solid Waste Landfill.

Tetra Tech prepared engineering plans and specifications suitable for bidding and in addition to managing the large size of the project. Tetra Tech's regulatory specialists guided the incremental closure concept through the state's regulatory program. The concept is to close the landfill in roughly equal increments over a five-year period, spreading the closure expense over time, while continuing to operate the construction/demolition debris (C/DD) landfill located on a portion of the closure site.

Closure planning and design addressed the various environmental requirements of the Kentucky Division of Waste Management and Air Quality, including:

- Leachate collection and treatment
- Tier 2 gas monitoring
- Methane gas collection system
- Groundwater assessment and monitoring plan

Because of the long term cost consequences of transporting and treating leachate, Tetra Tech conducted a further investigation into the use of constructed wetlands for wastewater treatment. Use of a natural system to treat landfill leachate reduces disposal and treatment costs and reduces conventional pollutants in the landfill property. The investigation concluded that this technique could be used and would result in significant savings.

Kim Stan Landfill Closure Site Design and Construction

Selma, Allegheny County, VA

Client Name
U. S. EPA Region III

Project Highlights

- *Investigation, study, design, permitting, and construction of landfill closure*
- *Remedial design includes a landfill cap, leachate collection trench, leachate pipeline, sanitary sewer line upgrades, new pump stations and treatment plant upgrades*
- *Managed 10 subcontractors who all met schedule, cost and technical requirements*
- *Interfaced with federal, state, and county officials, utility companies, a local organization, and residents*

Project Cost
$1.3 Million

Tetra Tech performed the site investigation, feasibility study, remedial design, and remedial action at the Kim-Stan Landfill. This National Priorities List site in southwestern Virginia operated as a sanitary/industrial waste landfill and reportedly received 865,000 tons of waste between 1972 and 1990. Waste included PCB-contaminated oils, medical waste, and aluminum sludges.

Tetra Tech developed a cost-effective solution, including:

- A 26.5-acre, multi-layer landfill cap
- 45,250 square feet of leachate collection trench, installed using an innovative biopolymer slurry
- A comprehensive stormwater management system
- Native plant landscaping to blend the cap with surrounding terrain
- Engineered subsurface wetlands system for leachate pre-treatment
- Over 4,600 feet of force main sewers and upgrading over 3,000 feet of sanitary sewer
- Three new major pump stations and upgrading an existing pump station
- Upgrading 250,000-gallon sequence batch reactor at the Publicly Owned Treatment Works

The management approach of dividing the work into three separate designs (landfill; leachate pipeline/sewer upgrade; POTW upgrade) contributed to meeting technical requirements on an accelerated schedule.

EPA noted that the remedial design was *"an overwhelming success … this was a very critical project that was accomplished in an extremely expedited time frame, 6 months, that led to a final design being submitted on-time and under budget."*

Disposal/Burn Area Landfill and Marsh Cap Closure Design

Naval Support Facility, Dahlgren, VA

Client Name
Naval Facilities Engineering Command

Project Highlights

- *3-D groundwater and contaminant transport modeling to optimize remedy and achieve remediation goals*
- *Minimized potential for migration of contamination to adjacent tributary*
- *Remedy used cost-effective passive approach*

Project Cost
$2.7 Million

Tetra Tech provided groundwater and contaminant transport modeling, remedial design, and engineering support and oversight for closure of an uncontrolled landfill located at a naval facility. The Disposal/Burn Area is a 12 acre inactive landfill located adjacent to a tidally influenced tributary of the Potomac River and wetlands. Historic information indicated that the area was used as a sanitary landfill from the early 1940s until 1984 for disposal of approximately 100,000 cubic yards of chemical, municipal, and miscellaneous waste.

Tetra Tech performed modeling to simulate pre-remediation and post-remediation scenarios, including capping the landfill, covering the marsh and back channel area, and installing an upgradient cut-off wall. The goal of the modeling was to determine the remedy that minimized long-term groundwater impacts to the tributary, protected ecological receptors, and achieved remediation goals. Tetra Tech:

- Completed a remedial investigation, feasibility study, pre-design investigation, and remedial design and provided continuous oversight during remediation.
- Designed a 6-acre multilayered cap over the landfill. The multilayered cap consisted of vegetative soil cover, separation geotextile, gravel drainage layer, cushion geotextile, 60-mil LLDPE geomembrane, geosynthetic clay liner, and bedding/gas venting layer.
- Designed a soil cover for the contiguous marsh (2 acres) and tributary back channel area (1 acre), and shoreline protection. The design incorporated geogrid, high strength stabilization geotextile, riprap, and gabions.
- Designed a passive gas management system.
- Designed a large basin as a borrow source for the landfill cap materials, as a sediment pond for erosion control during construction, and finally as a high marsh wetland to offset wetland losses from capping.
- Dug a continuous test pit to determine the limit of waste adjacent to the cut-off wall alignment.
- Planned and supervised the drilling of soil borings to determine the location and depth of a 640-foot long soil-bentonite cut-off wall.

City of Manistique Landfill Waste Delineation and Closure Design

Schoolcraft County, MI

Client Name
City of Manistique

Project Highlights

- *Use of state-of-the-art multi-port wells and dedicated sampling equipment to analyze groundwater samples from various depths from single monitoring wells*
- *Work Plans developed for each phase of hydrogeological investigation received MDEQ approval*
- *Design of cost-effective closure cap*

The Manistique Landfill is a Type II landfill that was used by local townships, industry and the City of Manistique.

Tetra Tech performed initial hydrogeological studies and identified environmental contamination consisting of groundwater impacted by volatile and semivolatile organic compounds and metals. The contaminants percolated as dissolved phase leachate to the groundwater surface and appear to have migrated to the bedrock surface below the permeable sand. Bedrock depth varies from 110 to 150 feet below grade.

As an unlined landfill, Tetra Tech's initial tasks included determining whether any leachate was leaving the site. The hydrogeological investigation indicated that leachate had migrated off-site and was impacting local, private property. Tetra Tech completed a Work Plan for each subsequent phase of the hydrogeological investigation. Each received MDEQ review and approval.

Because the chlorinated organic compounds, dissolved metals and volatile organic compounds are near bedrock, Tetra Tech used state-of-the-art multi-port wells and dedicated sampling equipment to collect and analyze groundwater samples from various depths from single monitoring wells. Soil sampling and lithological evaluation was conducted during well installation.

Tetra Tech also excavated around the perimeter of the landfill to determine the outer limits of the buried waste. Using a backhoe, the debris limits were delineated through excavation and visual confirmation, then flagged for later surveying and mapping. This information was used to develop a design to cap the landfill. Tetra Tech sought to design the most cost-effective closure cap possible. Tetra Tech evaluated three options: imported clay, a PVC cap, and a cap constructed of a composite liner.

Landfill Closure Design Using Soil Cover with Phytoremediation

Naval Support Facility, Dahlgren, VA

Client Name
Naval Facilities Engineering Command

Project Highlights

- *Soil cover coupled with phytoremediation was functionally equivalent to State closure standards at a lower cost*
- *Created 1 acre of additional wetland*
- *Consolidated the landfill footprint and made 1.5 acres available for future development*

Project Cost
$1.7 Million

Tetra Tech provided site investigation, feasibility study, pre-design investigation, remedial design, and consulting services during construction for the 1400 Area Landfill. This site was a sand and gravel borrow pit, bordered on two sides by wetlands, that was filled with municipal waste during the 1970s. This 5-acre landfill is underlain by a sand layer and a laterally persistent clay layer.

The design addressed risks associated with semi-volatile organic compounds, PCBs, pesticides, and metals at concentrations that were generally below industrial screening levels. Contaminated wetland area sediments were excavated and disposed offsite due to unacceptable ecological risk. Based on client preference, landfill waste was consolidated into a smaller area, providing 1.5 acres for future development. The waste was capped with a 2-foot thick soil cover which was planted with hybrid poplar trees. The soil cover, coupled with phytoremediation, was designed to provide the functional equivalence of a Virginia sanitary landfill cap. The trees on and around the soil cover also serve to reduce off-site migration of mercury in groundwater by reducing the hydraulic gradient and associated discharge of groundwater to surface water.

Tetra Tech prepared calculations to: 1) demonstrate that the 2-foot soil cover with phytoremediation would be hydraulically equivalent to a Virginia sanitary landfill cap; 2) determine the number and spacing of trees to achieve hydraulic equivalence to a Virginia sanitary landfill cap; and 3) determine the number and spacing of trees required to reduce the hydraulic gradient beneath the site and associated groundwater-to-surface water flow.

Client Name
U.S. EPA Region 7

Project Highlights

- *Oversight of closure activities of the landfill*
- *Project fulfilled all of the RCRA closure requirements*
- *Regular site visits to deal with complications caused by weather*

TETRA TECH

Project Cost
$26,000

Black Hawk County Landfill Closure Oversight

Blackhawk County, IA

The Black Hawk County Landfill is a municipal landfill, which is managed by the Black Hawk County Solid Waste Management Commission. This landfill previously accepted RCRA hazardous waste among its municipal and industrial refuse.

Tetra Tech was assigned to oversee closure activities at this landfill. Those activities included:

- placing 2 feet of compacted clay over the graded landfill
- installation of a PVC liner, Geonet, and Geotextile fabric over the compacted clay
- placing 3 feet of select fill on the synthetic liner
- placing a 6-inch layer of topsoil over the select fill.

During the closure, Tetra Tech sent personnel to the site 11 times to oversee closure activities. Several complications occurred during installation of the landfill cap. Wind, rain, cold temperatures and difficulties with compaction of the clay resulted in delays in completion of the project and in the need for daily coordination between Tetra Tech personnel and the EPA work assignment manager.

Also, when the cap was nearly completed, several Shelby tube samples of the clay cap failed the permeability tests. The liner in those areas then had to be removed, and the clay in those portions of the landfill had to be recompacted.

Tetra Tech's inspections, which were documented with photographs and trip reports, ultimately determined that the cap met all of the RCRA closure requirements.

Landfill Site Investigation, Evaluation, and Soil Cover Design

Naval Support Facility, Indian Head, MD

Client Name
Naval Facilities Engineering Command

Project Highlights
- *Negotiated variance to State landfill closure regulations*
- *Effective cap at a substantial cost savings*
- *Restored 0.4 acre wetland*

Project Cost
$938,600

Tetra Tech completed a site investigation, evaluation, and remedial design for the Town Gut Landfill. This 4-acre site was operated between 1968 and 1980 for the disposal of approximately 70,000 cubic yards of landscaping waste, fill material, and rubble. Unauthorized items reportedly dumped at the site included paints, varnishes, and other chemical wastes.

A pond bisects the northern and southern portions of the site, and a tidally-affected pond adjacent to the southern portion of the site governed the groundwater table at the landfill. The adjacent ponds were not affected by groundwater contamination from the landfill.

A variance to Maryland landfill closure regulations was successfully negotiated. The variance allowed the landfill to be closed with a 2-foot thick soil cover in lieu of an impervious cap. Construction of the soil cover greatly reduced the capital cost while conforming to State requirements. Contaminated soil and accumulated debris were removed from 0.4 acres of wetlands to allow the installation of the 2-foot thick soil cover. The original shoreline contours were maintained and the pre-existing habitat was restored.

Tetra Tech also provided general consulting services throughout construction, including reviewing contractor submittals and variance requests. Deed restrictions were prepared to prohibit residential development on the landfill and use of site groundwater as a source of drinking water.

Atlantic County Utilities Authority

Pinelands Park Landfill
Egg Harbor Township, NJ

Cornerstone provided environmental review and due diligence services to the Atlantic County Utilities Authority (ACUA) for the acquisition of the Pinelands Park Landfill, a closed municipal solid waste (MSW) landfill located in Atlantic County, New Jersey. The landfill is now a public golf course. Cornerstone continues to perform post-closure monitoring and regulatory reporting, including certification of cost submittals for withdrawals from the site's escrow funds, and biennial updates to the post-closure care financial plan. The work also includes preparation of independent estimate of post-closure maintenance and monitoring activities, with recommendations for approaches to maintain environmental compliance while reducing post-closure operations and maintenance cost.

Cornerstone landfill gas technicians manage the active landfill gas collection and control systems, operating the system to control fugitive emissions; and, maintenance of the system.

Cornerstone field technicians periodically collect groundwater, leachate, and stormwater samples in accordance with permit conditions. Cornerstone environmental scientists review analytical results for compliance and report results to the ACUA and regulatory agency.

Cornerstone is performing repair and replacement work to maintain operation and functionality of all environmental systems. Cornerstone is reviewing and recommending modification of permit conditions, to more effectively match environmental monitoring requirements to the environmental conditions. The modifications result in a reduced monitoring frequency and cost to the client.

Key Project Activities

- Environmental review and due diligence
- Post-closure cost estimates
- Post-closure monitoring and reporting
- Post-closure care financial plan updates

Project Manager:

Arie P. Kremen, PhD

Client Contact:

Brian Lefke

Tel # 609.272.6950

Start/End Date:

2010 – Ongoing

cornerstone environmental

Remediation and Closure Services

IESI - Seneca Meadows, Inc.

Tantalo Waste Disposal Site
Seneca Falls, NY

Cornerstone personnel provided remediation services to IESI Seneca Meadows, Inc. (SMI) at the Tantalo Waste Disposal Site, in the Town of Seneca Falls, NY on a 600-acre site occupied by the Part 360-permitted Seneca Meadows Landfill. The work included site investigation, feasibility study, design, construction services, and operation and maintenance activities. The site had been classified as a Class 2 inactive hazardous waste site by the NYSDEC, but as a result of the remediation efforts is now a Class 4 site.

The work started with a focused remedial investigation and feasibility study along with an aquifer/tracer test for further characterization of bedrock hydrogeology. This work was successful in identifying two distinct water-bearing zones that others had mapped as a single unit, explaining the site plume configuration and also providing data that was used to demonstrate that the extent of the plume is being naturally attenuated.

Cornerstone then developed a remedial design for the site's two operable units. For Operable Unit No. 1, site closure included a geocomposite cap, drainage controls, gas controls, a leachate collection system, waste pullback, a cutoff wall along adjacent Black Brook, and relocation of the site access road and scale. For this aspect of construction, the project utilized a new grading material termed comparable structural fill, which helped defray the costs of remediation. For Operable Unit No. 2, Cornerstone prepared the engineering design and all required documents for enhanced monitored natural attenuation (electron donor injection for enhanced reductive dechlorination of VOCs), which avoided a more costly pump and treat alternative originally preferred by state regulators.

During implementation, Cornerstone personnel provided construction observation and certification services and currently Cornerstone is continuing its work with operation, maintenance and monitoring services. Both remedies are performing as designed.

Key Project Activities

- Focused RI/FS
- Fractured rock aquifer/tracer test
- Remedial design
- Remedial construction
- Natural attenuation demonstration (reductive dechlorination)
- Operation, maintenance and monitoring services

Project Manager:

Robert Holmes, PE

Gary DiPippo, PE

Client Contact:

Thomas P. Hasek, Jr.

Tel # 315-539-5624

Start/End Date:

1999 – Ongoing

MAC Landfill

MAC Landfill
Deptford Township, New Jersey

Cornerstone provides a variety of environmental engineering and compliance services to MAC Landfill, a closed municipal solid waste (MSW) landfill located in Deptford Township, New Jersey. Services include environmental compliance support for groundwater, landfill gas migration, landfill emissions permitting, and stormwater pollution prevention monitoring.

The landfill accepted MSW from Gloucester County, New Jersey, and other surrounding communities. It ceased waste acceptance in 1977, and was finally certified closed in the 1980s. Cornerstone employees had previously been providing services at the site for past 30 years.

Each year Cornerstone performs a site inspection to document both post-closure landfill maintenance and stormwater pollution prevention monitoring. The results of this annual inspection are published in a site inspection report that is kept on file at the offices of United Environmental Services (UES). In accordance with the state-approved closure plan for the site, landfill gas migration monitoring is performed quarterly by UES. Cornerstone staff reviews the landfill gas monitoring results and transmit the findings to NJDEP.

MAC landfill has a system of passive landfill gas vents. Because of the quantity of landfill gas that is emitted, the landfill has an Air Pollution Control Operating Permit issued by NJDEP. This permit requires regular monitoring and reporting of the air emissions produced by the landfill gas vents.

Key Project Activities

- Engineering services
- Environmental compliance services, including groundwater, landfill gas migration, emissions permitting, and stormwater pollution prevention monitoring
- Annual site inspection report

Project Manager:

Mark Swyka

Client Contact:

Gary De Franco

Start/End Date:

February 2006 – Ongoing

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Post Closure Monitoring Annual Engineer's Report and Cost Estimating

Montgomery-Otsego-Schoharie Solid Waste Management Authority

Eastern Landfill, Central Landfill, C&D Landfill
NY

Cornerstone Engineering and Land Surveying, PLLC is providing Montgomery-Otsego-Schoharie Solid Waste Management Authority (MOSA) with landfill engineering services, including post-closure site visits and monitoring, engineering evaluation of existing systems, and annual reporting for 3 MOSA landfills, Eastern Landfill, located in the Town of Amsterdam, Central Landfill, located in the Town of Root, and the C&D landfill, located in the Town of Otsego.

Cornerstone prepared an Annual Engineer's Report (AER) for each site to meet Post Closure Monitoring and Maintenance Agreement requirements between MOSA and its member counties. The AER reports, prepared in accordance with the requirements of 6NYCRR Part 360-2.15 and the Post Closure Monitoring and Maintenance Agreement, will include:

- A review and summary of Monthly Inspection forms.
- Summary of maintenance that has been performed at each site during the past year.
- Summary of the leachate, groundwater, and gas sampling and monitoring that has been performed in the last year.
- Visual condition survey of the monitoring point network, cap system, surface drainage system, leachate and gas collection system (where present) and site access.
- Identification of any current or impending conditions at the Landfills which may require additional expenditures

The data, inspection, and maintenance summaries and visual condition survey are compiled into a narrative report and presented as the AER.

Key Project Activities

- Post closure monitoring and annual reporting
- Post closure cost estimates for 30 year post closure term
- Engineering evaluations landfill and leachate management systems

Project Manager:

Robert A. Holmes, PE

Client Contact:

Dennis Heaton

Tel # 917.669.334

Start/End Date:

2010 – Ongoing

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Engineering, Permitting, Air Compliance, and Environmental Monitoring

Ocean County Landfill Corporation

Ocean County Landfill
Manchester, NJ

Cornerstone's principals have worked with Ocean County Landfill Corporation on the Ocean County Landfill (OCLF) in Manchester, NJ, since the 1980s, providing environmental engineering and consulting services, including landfill design and systems analysis, civil and site work, permitting, air compliance, environmental monitoring services and general engineering oversight. OCLF consists of approximately 300-acres of landfill area and annually processes roughly 500,000 tons of municipal solid waste (MSW). The facility uses a double composite baseliner and collected leachate is directed to an onsite pre-treatment plant. Thirty-six groundwater monitoring wells surround the OCLF.

To control landfill gas (LFG) emissions, Cornerstone has developed a horizontal gas collection system to capture the LFG, which is delivered to two independent LFG-to-energy facilities where it is treated and used to produce electricity. Combined, the two facilities have the capacity to generate approximately 13.9 MW of electricity.

Cornerstone developed the facility's Title V operating permit renewal applications and prepared NSPS/NESHAP/Title V semi-annual reporting and annual emission statements for the past five years. Cornerstone has also participated in negotiations with NJDEP and USEPA on Prevention of Significant Deterioration (PSD)/Nonattainment New Source Review (NNSR). Air compliance work also included assisting OCLF to develop legal arguments regarding common control issues with regard to combining regulatory and liability issues between OCLF and the on-site LFG-to-energy facility.

OCLF conducts interim operations using temporary cell capping, which allows for future permitted overfilling. Cornerstone has developed a program that allows OCLF to install a leachate recirculation system within the temporary cap system. OCLF has installed leachate recirculation lines on more than 130 acres of the landfill.

Cornerstone designed and permitted an on-site transfer station to be used to handle municipal solid waste and construction and demolition debris, which is currently under construction.

Key Project Activities

- Engineering, design, and permitting
- Leachate recirculation design and evaluation
- Title V operating permit renewal applications
- NSPS/NESHAP/Title V reporting
- Environmental monitoring, including facility emissions
- GHG reduction reports
- Soil gas sampling and reporting, gas collection system monitoring
- Groundwater monitoring, statistical analysis, and reporting
- Stormwater analysis and reporting

Project Manager:

Prentiss Shaw, PE

Client Contact:

Martin L. Ryan, PE, VP

732.657.5100

Start/End Date:

February 2006 – Ongoing

Pollution Control Financing Authority of Camden County (PCFA)

Pennsauken Sanitary Landfill
Pennsauken Township, New Jersey

Cornerstone is completing the facility Master Plan for the Pollution Control Financing Authority of Camden County (PCFA)'s Pennsauken Landfill. The work is focused on assisting PCFA to derive the maximum benefit from the landfill.

Located in the town of Pennsauken, New Jersey along the Delaware River, the Pennsauken Landfill has been providing for the disposal needs of the local community for more than 30 years. The landfill was developed in discrete phases constructed within the available land area to meet the requirements of the regulations in effect at the time.

Cornerstone evaluated the existing landfill footprint and conditions at the site to identify practical, cost effective landfill expansion opportunities. Although lateral footprint expansion alternatives are limited, Cornerstone experts determined that selective height increases, coupled with the use of overliners and perimeter berms, can achieve adequate additional air-space well beyond the facility's current planning horizon.

To demonstrate the effect of various development approaches, Cornerstone prepared multiple grading plans, each of which demonstrated an incremental approach to landfill air-space addition. Each plan was also accompanied by an air-space volume calculation. Viewing the plans comparatively allowed for a clear graphic depiction of how to best utilize the available resources at the project site. The final development sequence is currently being incorporated into the final Master Plan for the facility.

To assist in selection of the appropriate development strategy, Cornerstone prepared engineering cost estimates for each option, including capital cost, closure cost, and long-term operation, maintenance and monitoring. Costs were identified as total present worth as well as unit of capacity.

Key Project Activities

- Alternative landfill grading plans
- Comparative landfill air-space calculations
- Evaluation to enhance air-space volume
- Comprehensive cost estimation
- Unit of capacity cost value determinations

Project Manager:

Mark A. Swyka, PE

Gary J. DiPippo, PE

Client Contact:

John Londres

856.663.2772

Start/End Date:

2010 – Ongoing

Town of Carmel, NY

Town of Carmel Landfill
Putnam County, NY

Cornerstone performed a variety of closure and post-closure services for the Town of Carmel Landfill, located in the Town of Carmel, Putnam County, New York. The work included a closure investigation, engineering design for closure, and construction quality assurance services in accordance with 6 NYCRR Part 360 regulations.

The site is a 14-acre inactive landfill facility co-located with the Town's recycling center. It began operation in 1946 as a site to dispose of ash waste from an on-site incinerator. In 1976, the Town ceased the regular placement of solid waste at the site and began accepting only land-clearing debris, yard waste, and construction and demolition debris. This continued until July 2001, when the Town ceased accepting waste at the landfill.

Per an Order on Consent issued by the New York State Department of Environmental Conservation (NYSDEC), present day Cornerstone staff prepared the following documents:

- *Closure Investigation Report*
- *Engineering Design Report*
- *Closure Plans for Town of Carmel Landfill*
- *Operations & Maintenance Manual*
- *Bid Documents and Technical Specifications*
- *Construction Quality Assurance and Construction Quality Control Plan*
- *Construction Contingency Plan*

Construction of the final closure began in 2005 and was completed in 2007. Cornerstone provided professional engineering services during construction, including contract administration, shop drawing review, construction observation, and engineering certification.

Key Project Activities

- Waste consolidation to reduce landfill footprint
- Design of final cover on 2H:1V landfill sideslopes
- Geogrid reinforced perimeter soil berm allowed waste placement within a reduced footprint
- Closure investigation services
- Engineering design services
- Construction quality assurance services
- Post-closure environmental monitoring and reporting

Project Manager:

Mark A. Swyka, PE

Client Contact:

Daniel J. Donahue

Start/End Date:

May 2006 - 2009

Walter's Homes

Stafford Township Landfills
Stafford Township, NJ

Current Cornerstone Environmental Group staff supported Walter's Homes on the closure of two inactive landfills in Stafford Township, New Jersey and subsequent redevelopment for commercial and residential uses. The work included waste and debris excavation and relocation, construction of final cover, and ongoing environmental monitoring.

The site, originally owned by Stafford Township, and located in the sensitive Pinelands region of New Jersey, included two separate areas where landfills had historically been operated. Closure included the complete excavation and relocation of the old, unlicensed landfill area and the regrading and capping of the newer, formerly licensed landfill area.

Cornerstone staff prepared the design plan and completed the permitting for the excavation, relocation, and beneficial reuse of 500,000 cubic yards of waste and debris from the unlicensed landfill, which was used to regrade and contour the formerly licensed landfill.

Closure of the licensed landfill included the construction of an impermeable final cover, which incorporated a polyethylene geomembrane, subsurface drainage layer, and a unique passive landfill gas venting system with provisions to simplify future conversion to active collection if desired. Post-closure use of the landfill includes open space, a Class B recycling center for yard and leaf compost, and a solar electric generating field.

Excavation of waste from the unlicensed landfill area paved the way for the commercial redevelopment of this portion of the site. The waste relocation was successful, and the site is performing as expected.

Cornerstone continues to provide environmental monitoring as a component of the post-closure care at the landfill facility.

Key Project Activities

- Landfill closure
- Geomembrane final cover
- Development of yard waste compost facility
- Major waste disruption
- Excavation and beneficial reuse of waste materials
- Brownfield redevelopment
- Post-closure monitoring and maintenance

Project Manager:

Mark Swyka, PE

Client Contact:

Joseph DelDuca

Tel # 859.258.2301

Start/End Date:

February 2006 – Ongoing

Section E: Certificate of Insurance

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 11/03/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Aon Risk Insurance Services West, Inc.
Los Angeles CA Office
707 Wilshire Boulevard
Suite 2600
Los Angeles CA 90017-0460 USA

CONTACT NAME:
PHONE (A/C. No. Ext): (866) 283-7122 **FAX (A/C. No.):** (800) 363-0105
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A:	National Union Fire Ins Co of Pittsburgh	19445
INSURER B:	The Insurance Co of the State of PA	19429
INSURER C:	AIG Europe Limited	AA1120841
INSURER D:	Lexington Insurance Company	19437
INSURER E:		
INSURER F:		

INSURED
Tetra Tech, Inc.
661 Andersen Drive
Pittsburgh, PA 15220 USA

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE / X OCCUR X Contractural Liability X X,C,U GEN'L AGGREGATE LIMIT APPLIES PER: POLICY / X PRO-JECT / X LOC OTHER:			GL3372258	10/01/2015	10/01/2016	EACH OCCURRENCE	$2,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$1,000,000
							MED EXP (Any one person)	$10,000
							PERSONAL & ADV INJURY	$2,000,000
							GENERAL AGGREGATE	$4,000,000
							PRODUCTS - COMP/OP AGG	$4,000,000
A	**AUTOMOBILE LIABILITY** X ANY AUTO ALL OWNED AUTOS / SCHEDULED AUTOS X HIRED AUTOS / X NON-OWNED AUTOS			CA3194397	10/01/2015	10/01/2016	COMBINED SINGLE LIMIT (Ea accident)	$2,000,000
							BODILY INJURY (Per person)	
							BODILY INJURY (Per accident)	
							PROPERTY DAMAGE (Per accident)	
C	X **UMBRELLA LIAB** / X OCCUR **EXCESS LIAB** / CLAIMS-MADE DED / RETENTION			TH1500079	10/01/2015	10/01/2016	EACH OCCURRENCE	$5,000,000
							AGGREGATE	$5,000,000
B	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N: N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WC014267906 WC014267907 WC014267908 WC014267912	10/01/2015 10/01/2015 10/01/2015 10/01/2015	10/01/2016 10/01/2016 10/01/2016 10/01/2016	X PER STATUTE / OTH-ER	
							E.L. EACH ACCIDENT	$1,000,000
							E.L. DISEASE-EA EMPLOYEE	$1,000,000
							E.L. DISEASE-POLICY LIMIT	$1,000,000
D	Professional Liability and Contractor's Pollution Liability			028182375	10/01/2015	10/01/2016	Each Claim Aggregate	$5,000,000 $5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required) Includes Stop Gap: OH, ND, WA, WY

CERTIFICATE HOLDER

Tetra Tech, Inc.
661 Andersen Drive
Pittburgh, PA 15220 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Insurance Services West, Inc.

ENDORSEMENT

This endorsement, effective 12:01 A.M. 10/01/2015 forms a part of

policy No. GL3372258

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

CONTRACTOR'S COMMERCIAL PRIME ENDORSEMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE FORM

Coverage afforded under this endorsement does not apply to any person or organization covered as an additional insured on any other endorsement now or hereafter attached to this Coverage Part.

I. ADDITIONAL INSUREDS

Section II - WHO IS AN INSURED, 1. is amended to include as an insured any person or organization described in paragraphs A through I below, whom you are required to add as an additional insured under a written contract or agreement. The written contract or agreement must be:

1. Currently in effect or becoming effective during the term of this policy; and
2 Executed prior to "bodily injury", "property damage," or "personal injury and advertising injury".

A. BY CONTRACT

Any person or organization to whom you become obligated to include as an additional insured under this policy, as a result of any contract or agreement you enter into which requires you to furnish insurance to that person or organization of the type provided by this policy, but only with respect to liability arising out of your operations or premises owned by or rented to you. However, the insurance provided will not exceed the lesser of:

1. The coverage and/or limits of this policy, or
2. The coverage and/or limits required by said contract or agreement.

B. CONTROLLING INTEREST

1. Any person or organization having a greater than a 50% interest in you, but only with respect to their liability arising out of:
   a. Their financial control of you; or
   b. Premises they own, maintain or control while you lease these premises.
2. The insurance afforded to these additional insureds under Paragraph I.B.1 does not apply to structural alterations, new construction or demolition operations performed by or for that person or organization.

C. CO-OWNER OR INSURED PREMISES

A Co-owner of insured premises co-owned by you and covered by this insurance but only with respect to their liability as co-owner of the premises.

D. LESSOR OF LEASED EQUIPMENT

1. Any person or organization from whom you lease equipment, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your maintenance, operation or use of such equipment leased to you by such person(s) or organization(s).

2. With respect to the insurance afforded to these additional insureds under Paragraph I.D.1, this insurance does not apply to any "occurrence" which takes place:

    a) after the equipment lease expires, or

    b) after the equipment is returned or no longer in your possession,

    whichever takes place later.

E. MANAGERS OR LESSORS OF PREMISES

Managers or Lessors of premises but only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to you and subject to the following additional exclusions:

This insurance under this paragraph does not apply to:

1. Any "occurrence" which takes place after you cease to be a tenant in that premises.

2. Structural alterations, new construction or demolition operations performed by or on behalf of such Managers or Lessors.

F. MORTGAGEE, ASSIGNEE, OR RECEIVER

1. A mortgagee, assignee, or receiver but only with respect to their liability as mortgagee, assignee, or receiver and arising out of the ownership, maintenance, or use of the premises by you.

2. The insurance afforded to the additional insureds under Paragraph I.F.1 does not apply to structural alterations, new construction or demolition operations performed by or for that mortgagee, assignee, or receiver.

G. OWNERS, LESSEES, OR CONTRACTORS - COMPLETED OPERATIONS

(1) Any Owner, Lessee or Contractor, but only with respect to liability arising out of "your work" performed for that additional insured and included in the "products-completed operations hazard".

H. OWNERS, LESSEES, OR CONTRACTORS - ONGOING OPERATIONS

Any Owners, Lessees, or Contractors, but only with respect to liability arising out of your ongoing operations performed for that additional insured.

This insurance does not apply to "bodily injury" or "property damage" occurring after:

(1) all work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) has been completed; or,

(2) that portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

I. STATE OR POLITICAL SUBDIVISION - PERMITS

Any State or Political Subdivision, subject to the following provisions:

1. This insurance applies only with respect to operations performed by you or on your behalf for which the state or political subdivision has issued a permit.

2. This insurance does not apply to:

   a. "Bodily injury," "property damage" or" personal and advertising injury" arising out of operations performed for the state or municipality; or

   b. "Bodily injury" or "property damage" included within the "products-completed operations hazard".

II. PRIMARY INSURANCE - ADDITIONAL INSUREDS

Where persons or organizations have been added to your policy as additional insureds to comply with insurance requirements of written contracts mandating primary coverage for such additional insureds relative to:

a) the performance of your ongoing operations for the additional insureds; or

b) "your work" performed for the additional insureds and included in the "products-completed operations hazard,

then with respect to these additional insureds as defined above in this Section only, **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS, Paragraph 4. - Other Insurance, a. - Primary Insurance,** is deleted in its entirety and replaced with the following:

This insurance is primary over any similar insurance available to any person or organization we have added to this policy as an additional insured to comply with insurance requirements of written contracts mandating primary coverage for such additional insureds relative to (a) the performance of your ongoing operations for the additional insureds, or (b) "your work" performed for the additional insureds and included in the "products-completed operations hazard. However, this insurance is primary over any other similar insurance only if the additional insured is designated as a named insured of the other similar insurance. We will not require contribution of limits from the other similar insurance if the insurance afforded is primary.

III. INCIDENTAL MEDICAL MALPRACTICE LIABILITY COVERAGE

SECTION II - WHO IS AN INSURED, 2. a. (1) (d) is deleted in its entirety and replaced with the following:

(d) Arising out of his or her providing or failing to provide professional health care services, except for "bodily injury" arising out of "Incidental Medical Malpractice Injury" by any physician, dentist, nurse or other medical practitioner employed or retained by you unless such "bodily injury" is covered by another primary policy. However, the insurance provided hereunder to such persons will not apply to liability arising out of services performed outside of the scope of their duties as your "employees." Any series of continuous, repeated or related acts will be treated as the occurrence of a single negligent professional healthcare service, which will be assignable to the same policy and policy year in which the originating act occurred.

SECTION V - DEFINITIONS - is amended to add:

"Incidental Medical Malpractice Injury" means "Bodily Injury" arising out of the rendering of or failure to render the following services:

a. medical, surgical, dental, x-ray or nursing service or treatment or the furnishing of food or beverages in connection therewith; or

b. the furnishing or dispensing of drugs or medical, dental or surgical supplies or appliances.

The Coverage provided by this endorsement does not apply to you or any insured if you are engaged in the business or occupation of providing any of the services described in the definition of "Incidental Medical Malpractice Injury".

IV. JOINT VENTURES / PARTNERSHIPS / LIMITED LIABILITY COMPANIES

The paragraph under **SECTION II - WHO IS AN INSURED** which states:

No person or organization is an insured with respect to the conduct of any current or past partnership, joint venture or limited liability company that is not shown as a Named Insured in the Declarations.

is hereby deleted and replaced with the following:

No person or organization, other than you, is an insured with respect to the conduct of any current or past partnership, joint venture or limited liability company that is not shown as a Named Insured in the Declarations.

Coverage under this policy, however, will not apply:

a. Prior to the termination date of any joint venture, partnership or limited liability company; or

b. If there is valid and collectible insurance purchased specifically to insure the partnership, joint venture or limited liability company.

V. SUPPLEMENTARY PAYMENTS

Under **SECTION I - SUPPLEMENTARY PAYMENTS - COVERAGES A AND B**, Paragraph **1.b.**, is deleted in its entirety and replaced with the following:

b. Up to $2,500 for cost of bail bonds required because of accidents or traffic law violations arising out of the use of any vehicle to which the Bodily Injury Liability Coverage applies. We do not have to furnish these bonds.

VI. LIBERALIZATION CLAUSE

If we revise or replace our standard policy form to provide more coverage, your policy will automatically provide the additional coverage as of the day the revision is effective in your state.

VII. UNINTENTIONAL ERRORS AND OMISSIONS

SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS, 6. - Representations is amended by adding:

d. The unintentional failure by you or any Insured to provide accurate and complete nonmaterial representations as of the inception of the policy will not prejudice the coverages afforded by this policy.

VIII. AMENDMENT OF DUTIES IN THE EVENT OF OCCURRENCE, OFFENSE, CLAIM OR SUIT

SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS, 2. - Duties in the Event of Occurrence, Offense, Claim or Suit, a. is hereby deleted and replaced with the following:

a. You must see to it that we are notified as soon as practicable of any "occurrence" or an offense, which may result in a claim. Knowledge of an "occurrence" or an offense by your agent, your servant, or your employee will not in itself constitute knowledge to you unless the Director of Risk Management (or one with similar or equivalent title) or his/her designee will have received such notice. To the extent possible notice should include:

(1) How, when and where the "occurrence" or offense took place;
(2) The names and addresses of any injured persons and witnesses; and
(3) The nature and location of any injury or damage arising out of the "occurrence" or offense.

IX. AMENDMENT OF EXPECTED OR INTENDED INJURY EXCLUSION

SECTION I - COVERAGES, COVERAGE A - BODILY INJURY AND PROPERTY DAMAGE LIABILITY, 2. - Exclusions, a. - Expected or Intended Injury, is deleted and replaced by the following:

a. "Bodily injury" or "property damage" expected or intended from the standpoint of the insured. This exclusion does not apply to "bodily injury" or "property damage" resulting from the use of reasonable force to protect persons or property.

X. CONTRACTUAL LIABILITY - RAILROADS

Only with respect to (i) operations performed within 50 feet of railroad property and (ii) for which a Railroad Protective Liability Policy in the name of the railroad has been provided, then

A. **SECTION V - DEFINITIONS, Paragraph 9,** is deleted in its entirety and replaced with the following:

9. "Insured Contract" means:

a. A contract for a lease of premises. However, that portion of the contract for a lease of premises that indemnifies any person or organization for damage by fire to premises while rented to you or temporarily occupied by you with permission of the owner is not an "insured contract";

b. A sidetrack agreement;

c. Any easement or license agreement;

d. An obligation, as required by ordinance, to indemnify a municipality, except in connection with work for a municipality;

e. An elevator maintenance agreement;

f. That part of any other contract or agreement pertaining to your business (including an indemnification of a municipality in connection with work performed for a municipality) under which you assume the tort liability of another party to pay for "bodily injury" or "property damage" to a third person or organization. Tort liability means a liability that would be imposed by law in the absence of any contract or agreement.

Paragraph **f.** does not include that part of any contract or agreement:

(1) That indemnifies an architect, engineer or surveyor for injury or damage arising out of:

(a) Preparing, approving or failing to prepare or approve maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

(b) Giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage; or

(2) Under which the insured, if an architect, engineer or surveyor, assumes liability for an injury or damage arising out of the insured's rendering or failure to render professional services, including those listed in Paragraph (1) above and supervisory, inspection, architectural or engineering activities; and

B. **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS, 4. - Other Insurance, b. Excess Insurance, (1) (a),** is amended to include the following:

(v) That is a Railroad Protective Insurance Policy or similar coverage.

XI. **COVERAGE FOR YOUR SUPERVISORY OR MANAGERIAL EMPLOYEES RELATING TO CO-EMPLOYEE INJURIES**

SECTION II - WHO IS AN INSURED, 2.a. (1), (a) and **(b)** are clarified to hold that:

Your supervisory or managerial "employees" are insureds for "bodily injury" to "co-employees" while in the course of their employment or performing duties related to the conduct of your business if claims or suits arise out of liability assumed by an insured under an "insured contract" as provided by **SECTION I - COVERAGES, COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY, 2. Exclusions, e. Employer's Liability.**

XII. **WAIVER OF TRANSFER OF RIGHTS OR RECOVERY AGAINST OTHERS TO US**

SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS, 8. - Transfer of Rights of Recovery Against Others To Us, is amended by the addition of the following:

We waive any right of recovery we may have against any person or organization pursuant to applicable written contract or agreement you enter into because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard".

XIII. **AMENDMENT OF OTHER INSURANCE**

A. **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS, 4.- Other Insurance, b. - Excess Insurance, (1),** is amended to include the following:

This insurance shall not be excess where (i) such other insurance is specifically purchased to apply as excess of this policy, or (ii) where you are obligated by contract to provide primary insurance to an additional insured, unless there is other additional insurance coverage available to that additional insured.

B. **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS, 4.- Other Insurance, b. - Excess Insurance, (2),** is deleted in its entirety and replaced with the following:

When this insurance is excess, we will have no duty under Coverages A or B to defend any claim or "suit" that any other insurer has a duty to defend. If no other insurer defends, we will undertake to do so, but we will be entitled to the insured's rights against all those other insurers.

XIV. **AMENDMENT AGGREGATE LIMITS PER PROJECT**

A. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under COVERAGE **A** (SECTION **I**), offense under COVERAGE **B** (SECTION 1) and for all medical expenses caused by accidents under COVERAGE **C** (SECTION **I**), which can be attributed only to ongoing operations at a single designated construction project:

1. A separate Per Construction Project General Aggregate Limit applies to each construction project, and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.

2. The Per Construction Project General Aggregate Limit is the most we will pay for the sum of (i) all damages under COVERAGE **A**, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", (ii) all damages under COVERAGE **B** and (iii) all medical expenses under COVERAGE **C** regardless of the number of:

   a. Insureds;

   b. Claims made or "suits" brought; or

   c. Persons or organizations making claims or bringing "suits".

3. Any payments made under COVERAGE **A** or **B** for damages or under COVERAGE **C** for medical expenses shall reduce the Per Construction Project General Aggregate Limit for that construction project. Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Per Construction Project General Aggregate Limit for any other construction project covered under this policy.

4. The limits shown in the Declarations for Each Occurrence, Fire Damage and Medical Expense continue to apply. However, instead of being subject to the General Aggregate Limit shown in the Declarations, such limits will be subject to the applicable Per Construction Project General Aggregate Limit.

B. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under COVERAGE **A** (SECTION **I**), offenses under COVERAGE **B** (SECTION 1) and for all medical expenses caused by accidents under COVERAGE **C** (SECTION **I**), which cannot be attributed only to ongoing operations at a single construction project:

1. Any payments made under COVERAGE **A** or **B** for damages or under COVERAGE **C** for medical expenses shall reduce the amount available under the General Aggregate Limit or the Products-Completed Operations Aggregate Limit, whichever is applicable; and

2. Such payments shall not reduce any Construction Project General Aggregate Limit.

C. When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will reduce the Products-Completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Construction Project General Aggregate Limit.

D. If the applicable construction project has been abandoned, delayed, or abandoned and then restarted, or if the authorized contracting parties deviate from plans, blueprints, designs, specifications or timetables, the project will still be deemed to be the same construction project.

E. The provisions of Limits of Insurance (SECTION **III**) not otherwise modified by this endorsement shall continue to apply as stipulated.

Section F: EOI Form

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Centralized Expression of Interest
02 — Architect/Engr

Proc Folder: 140338

Doc Description: EOI: Jefferson County Landfill Leachate Tank Study

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2015-10-05	2015-11-18 13:30:00	CEOI 0313 DEP1600000011	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Tetra Tech, Inc.
1000 Green River Drive
Fairmont, WV 26554
(304)534-4021

FOR INFORMATION CONTACT THE BUYER

Beth Collins
(304) 558-2157
beth.a.collins@wv.gov

Mark P. Speranza

Signature X **FEIN #** 954660169 **DATE** 11/18/15

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

The West Virginia Purchasing Division, for the Agency, the West Virginia Department of Environmental Protection, is soliciting Expressions of Interest for professional mapping and design services for the Jefferson County Landfill Leachate Tank Study project located in Jefferson County, West Virginia, per the attached bid requirements and specifications.

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF ENVIRONMENTAL REMEDIATION 601 57TH ST SE CHARLESTON WV 25304 US	ENVIRONMENTAL PROTECTION 601 57TH ST CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Leachate Holding Tank Study,	NA	NA

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description :

Leachate Holding Tank Study, Recommendation and Construction QA/QC for the Jefferson County Landfill per the attached specifications, bid requirements, and terms and conditions, incorporated here by reference and made a part hereof.

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Tech Question Deadline Submittal at 5:00 PM EST	2015-10-26

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

Section G: Purchasing Affidavit

RFQ No. DEP1600000011

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

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

DEFINITIONS:

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

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Tetra Tech, Inc.

Authorized Signature: [signature] Date: 11/16/15

Commonwealth
~~State~~ of Pennsylvania

County of Allegheny, to-wit:

Taken, subscribed, and sworn to before me this 16 day of November, 2015.

My Commission expires August 8, 2017, 2017.

AFFIX SEAL HERE

NOTARY PUBLIC Cynthia K Haluszczak

Purchasing Affidavit (Revised 07/01/2012)

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Cynthia K. Haluszczak, Notary Public
Green Tree Boro, Allegheny County
My Commission Expires Aug. 8, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Section H: Addendum Acknowledgement

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

☐ Addendum No. 1	☐ Addendum No. 6
☐ Addendum No. 2	☐ Addendum No. 7
☐ Addendum No. 3	☐ Addendum No. 8
☐ Addendum No. 4	☐ Addendum No. 9
☐ Addendum No. 5	☐ Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Tetra Tech, Inc.

Company

Mark P. Speranza

Authorized Signature

11/18/2015

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.