Prepared for

West Virginia Department of Environmental Protection

Expression of Interest

SOUTH CHARLESTON LANDFILL CLOSURE DESIGN & QA/QC

Req. #DEP14619

Prepared by

Geosyntec consultants

engineers | scientists | innovators

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

4 May 2009

Geosyntec consultants

1255 Roberts Blvd, NW, Suite 200
Kennesaw, GA 30144
PH 678.202.9500
FAX 678.202.9501
www.Geosyntec.com

4 May 2009

Mr. Chuck Bowman
Purchasing Division
P.O. Box 50130
Charleston, WV 25305-0130

Subject: Expression of Interest – South Charleston Landfill Closure Design & QA/QC
West Virginia Department of Environmental Protection (WVDEP)
Landfill Closure Assistance Program (LCAP)
RFQ Number DEP14619

Dear Mr. Bowman:

Geosyntec Consultants (Geosyntec) is pleased to submit this Expression of Interest to the West Virginia Department of Environmental Protection (WVDEP) to provide site characterization study, leachate management & closure cap design, and quality assurance/quality control (QA/QC) for the South Charleston Landfill in Capon Springs, West Virginia. This Expression of Interest is submitted in response to the Request for Quotation (RFQ) Number DEP14619 dated 2 April 2009.

Geosyntec has a higher than normal number of highly trained technical staff with over 80% of our staff holding advanced degrees in engineering and scientific management disciplines. Geosyntec is also the industry leader in landfill design and construction quality assurance services. Geosyntec was the first engineering company in the United States to offer construction quality assurance services for liner and cover systems for landfills starting in 1984.

Geosyntec is committed to providing exemplary services to WVDEP for the South Charleston Landfill closure design & QA/QC project. Geosyntec has assembled a team of highly qualified individuals that are specifically experienced in site characterization including soil, groundwater and landfill gas; leachate management including both on-site treatment and off-site shipment for treatment; closure cap design including soil and synthetic caps and RCRA Subtitle C and D caps; and QA/QC for characterization data and construction activities. Our team members have worked on several projects in West Virginia and have good working relationships with the WVDEP. These relationships will be put to use for the best interest of the South Charleston Landfill project.

Geosyntec appreciates the opportunity to submit this Expression of Interest to the WVDEP LCAP. Please contact either of the undersigned if you have any questions or require additional information.

Sincerely,

Stefanie A. Fountain
Project Engineer

Majdi A. Othman, Ph.D., P.E.
Principal

Enclosure: Landfill Closure Consultant Qualification Questionnaire

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
LANDFILL CLOSURE CONSULTANT QUALIFICATION QUESTIONAIRE

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
South Charleston Landfill Closure Design & QA/QC	4 May 2009	59-2355134

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
Geosyntec Consultants	1255 Roberts Blvd., Suite 200 Kennesaw, GA 30144	NA

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP INDIVIDUAL, CORPORATION, PARTNERSHIP, JOINT-VENTURE	6A. WV REGISTERED DBE (DISAVANTAGED BUSINESS ENTERPRISE)
(678) 202-9500	1983	Corporation	YES NO

7. PRIMARY OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. (name particular type) PERSONNEL EACH OFFICE (Please see question 9 regarding personnel)

Primary Office:

1255 Roberts Blvd., Suite 200, Kennesaw, GA 30144 |678.202.9500| Majdi Othman, PhD, PE

Local Office:

1108 3rd Ave. Suite 600, Huntington, WV 25701 | 304.522.0470| Greg Menniti, PE, PS

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER-OTHER PRINCIPALS
Rudy Bonaparte - President, CEO Jon Dickinson - CFO	Majdi Othman, Principal, (678)202-9500

9. NUMBER OF PERSONNEL BY DISCIPLINE **(Company Wide/Primary & Local Office)**
Detailed information On Team To Be Included

(131/14) ADMINISTRATIVE	(15/2) ECOLOGISTS	(0) LANDSCAPE ARCHITECTS	(21/1) STRUCTURAL ENGINEERS
(0) ARCHITECTS	(0) ECONOMISTS	(11/1) MECHANICAL ENGINEERS	**(1/1)+ SURVEYORS**
(11/3) BIOLOGIST	(1/1) ELECTRICAL ENGINEERS	(0) MINING ENGINEERS	(0) OTHER
(24/5) CADD OPERATORS	(103/2) ENVIRONMENTALISTS	(0) PHOTOGRAMMETRISTS	
(18/1) CHEMICAL ENGINEERS	**(22/2) ESTIMATORS**	(0) PLANNERS: URBAN/REGIONAL	(750/89) TOTAL PERSONNEL
(103/11) CIVIL ENGINEERS	**(112/9) GEOLOGISTS**	(11/2) SANITARY ENGINEERS	
(38/8) CONSTRUCTION INSPECTORS	(0) HISTORIANS	**(64/12) SOILS ENGINEERS**	
(22/5) DESIGNERS	**(20/4) HYDROLOGISTS**	(22/5) SPECIFICATION WRITERS	
(0) DRAFTSMEN			

+Surveying will be subcontracted. See Question 11.

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE:
Primary Office - 1 Local Office - 2

*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". **NA**

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

11. OUTSIDE KEY CONSULTANTS/ SUB-CONSULTANTS ANTICIPATED TO BE USED.		
NAME AND ADDRESS: AERO-METRIC, Inc. 45180 Business Court Dulles, VA 20166-6706	SPECIALTY: **AERIAL MAPPING:** Aerial photography, Multi-spectral imagery, Geodetic control Global Positioning System surveys - ground/airborne, Analytical aerotriangulation, Digital photogrammetry, Digital orthophotography, Digital terrain modeling, Close range/terrestrial photo-grammetry, Volumetric surveys, Reprographics **GEOGRAPHIC INFORMATION SYSTEMS:** Data base design and implementation, Graphics /attribute data collection, Polygon, Topology and network processing, Municipal and county geosystems and utility systems inventories, Facilities management mapping **DATA CONVERSION:** Analog to digital, System to system, Imperial to metric, Datum conversion	WORKED WITH BEFORE ☑ YES NO
NAME AND ADDRESS: Vernon Surveying Company, PLLC 259 Muskingum Drive Marietta, OH 45750	SPECIALTY: A small business founded in 1969 and owned by Mr. Robert Vernon. Vernon Surveying currently employs about 10 staff, including two 40-hour HAZWOPER certified surveyors who are licensed in West Virginia. Vernon Surveying participated in over 100 projects last year, with approximately 15% of these projects landfill related.	WORKED WITH BEFORE ☑ YES NO

NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
As needed, Geosyntec will subcontract with other firms to do drilling, lab testing, geotechnical testing, analytical testing, and geosynthetics testing. Geosyntec has worked with the companies listed below on projects in West Virginia and surrounding states: Prosonic Penn Drilling HAD Drilling Texas Research Institute (TRI) Golder Associates Test America	Penn Drilling - Drilling HAD Drilling - Drilling Prosonic - Drilling TRI - Geosynthetics testing Golder Associates - Geotechnical testing Test America - Analytical testing	☑ YES NO

12. ***Note: Personnel refers to those who will be working directly on the project:*

A. Are your firm's personnel experienced in Solid Waste Landfill Closure Design? **YES**

Description and Number of Projects:

As described in Section 13 of this document, the principals who are proposed for the landfill closure design part of this project are Drs. Majdi Othman and Jay Beech. They have tremendous experience in landfill closure design and have been with Geosyntec Consultants for 17 and 22 years, respectively. Their work during these many years has focused primarily on the design and permitting of landfills, and between the two of them, they worked on over 50 landfill closure design projects. They will be supported by other professionals, including designers, CADD operators, civil engineers, etc., who also have extensive experience in the design of landfill closures.

Geosyntec provides a full range of consulting and engineering services for solid and hazardous waste landfill facilities. Geosyntec has performed more than 1200 major projects involving the design or closure (or both) of waste management facilities (solid and hazardous waste) for clients throughout the United States. These projects cover the full range of professional services required in the life cycle of a waste management facility: from siting and permitting, to closure and post-closure monitoring.

Geosyntec is often the firm of choice for landfill closure design, construction, and post-closure development. The firm has gained extensive experience with a variety of closure systems at conventional solid waste disposal facilities, as well as at CERCLA and RCRA sites throughout the country. The firm's clients for site closure design and construction include the largest private waste management firms in the country, numerous county and city operators, Potentially Responsible Party (PRP) groups, and single site owners.

The regulations governing final closure under federal and state requirements are generally well defined and straightforward. However, development of a cost effective final closure design requires careful balancing of a variety of factors to attain project success. In addition to the prescriptive cap

designs that feature a clay barrier layer, other cap alternatives are often applicable that can reduce overall closure costs. These variations include using alternative materials (such as shredded tires) in the foundation layer where they can also serve as a landfill gas collection layer. Geosyntec has successfully used a geomembrane or geosynthetic clay liner (GCL) barrier layer instead of compacted clay to reduce the foundation layer's thickness.

Factors that affect the closure design often include the desire to close a site in a manner that will allow future development, usually commercial, industrial or recreational. Post-closure development and drainage considerations are important design factors, since poor selection of final grades and final cover configurations can severely limit the viability of post-closure development. Given Geosyntec's experience with post-closure development of landfills, the firm knows what works and what doesn't work and what features will enhance fill sequencing plans, end use, and marketability of the site.

One of the keys to Geosyntec's success with private and publicly owned solid waste projects is the firm's knowledge of federal and state regulatory requirements. Experience at facilities throughout the country, and Geosyntec's significant contributions to background guidance documents prepared by USEPA, give firm personnel a unique understanding of Subtitle C and Subtitle D requirements.

B. Are your firm's personnel experienced in Solid Waste landfill site characterization assessment and evaluation? **YES**

Description and Number of Projects:

Geosyntec personnel (including those assigned to this project) have conducted investigations at **over 40** existing solid waste landfill sites. The investigative purposes have included: defining the limits and depths of waste in the landfill; composition and nature of the waste; geotechnical properties of the existing cover, waste, and underlying soils; site hydrogeologic conditions; and leachate and gas impacts on the surrounding environment. Geosyntec has also evaluated impacts on wetlands, streams, and floodplains. Site characterization work performed by Geosyntec includes: preparing site investigation work plans; hazard rankings; sampling of waste, soil, and groundwater; air sampling and analysis; contaminant extent delineation; and contaminant fate and transport modeling. Geosyntec has used data collected from site investigations and historical data to evaluate the best and most economical options for final closure of landfills including: final grading, final cover cross section, soil borrow areas, leachate management system, gas management system, and surface water management system.

C. Are your firm's personnel experienced in landfill closure construction inspection? **YES**

Description and Number of Projects

Geosyntec personnel (including those assigned to this project) have provided a wide array of construction-related services on **more than 500 landfill construction or closure projects**.

Geosyntec was the first (in 1984) engineering company in the U.S. to offer construction quality assurance (CQA) services for liner and cover systems. As such, the firm has been responsible for the development of many of the standard CQA methods and procedures that are used in the industry today. Geosyntec's highly experienced team of Construction Management and CQA professionals are second to none. Geosyntec also provides mobile (and highly cost-effective) geotechnical and geomembrane-seam field testing services for on-site CQA testing during landfill construction. Construction inspection services include: evaluation of material conformance to specifications, monitoring of material development and installation, problem identification and resolution, quality control and conformance testing, field testing of soil liners (Test Fills, SDRI, BATT, etc.), CQA surveying, and CQA reports and certifications.

D. Is your firm experienced in Aerial Photography and the Development of Contour Mapping? **YES**

Description and Number of Projects

Geosyntec typically subcontracts aerial photography and development of contour maps. AERO-METRIC has been a prior subcontractor to Geosyntec for the type of work this project requires. They have worked for us in West Virginia and surrounding states.

AERO-METRIC

Aero-Metric is a leading provider of photogrammetric mapping and related services. The Eastern Region office in Dulles, VA employs 50 technical and professional staff members. Aero-Metric is one of the largest private, professional photogrammetric mapping firms in the United States. Permanent staff at this office includes 4 ASPRS Certified Photo-grammetrists and 3 Registered Surveyors.
The Eastern Region office has completed more than 13,000 aerial mapping projects covering a wide spectrum of requirements and disciplines. Clients from segments of the engineering, infrastructure, industrial, municipal, petroleum, communications, GIS, and military disciplines rely on Aero-Metric to provide a full range of mapping services. The company has over 60 years experience in aerial photography, surveying, photogrammetric mapping, and ortho-photo production. They apply the latest technologies in automated mapping, control surveys, and digital ortho-photo production.

E. Are your firm's personnel experienced in evaluating ground water contamination, such as may be associated with landfills? **YES**

Description and Number of Projects

Geosyntec personnel (including those assigned to this project) are very experienced in groundwater monitoring and assessment at landfill sites. A sample of projects that Geosyntec has worked at is included in the following table. Geosyntec has investigated groundwater contamination related to leachate and landfill gas at **more than 40** landfill projects during the past few years. Mr. Henry Kerfoot, a senior hydrogeologist with Geosyntec, is an internationally recognized authority on landfill gas effects on groundwater. Beginning in 1989, he was the first to publish articles on the topic. He has developed multiple techniques to measure landfill-gas contributions to groundwater VOC concentrations, and he has developed analytical models for solute exchange between the groundwater and vadose-zone. We employ technology-based strategies to meet our clients' stewardship, financial, and compliance goals to remediate soil and groundwater contaminants. Our site assessment and remediation specialists form one of the preeminent practices in North America, and includes individuals whose applied research continues to internationally redefine the state-of-the-practice. For remediating a wide variety of groundwater contaminants, we are among the international leaders in the application of in situ technologies such as: bioremediation, bioaugmentation, permeable reactive barriers, chemical oxidation, and monitored natural attenuation.

The table on the following page shows "Sample Landfill Projects Involving Groundwater Monitoring & Assessments"

Sample Landfill Projects Involving Groundwater Monitoring & Assessments

Name	State	Groundwater Sampling	Leachate Sampling	Statistical Analysis of Data	Hydrogeologic Assessments
City of Calhoun Landfill	GA	X	X	X	
Eller-Whitlock Landfill	GA	X		X	X
Seminole Road Landfill	GA	X	X	X	
Hwy 78 C&D Landfill	GA				X
Grady Road Landfill	GA		X		X
Bolton Road Landfill	GA				X
RTS Landfill	GA	X			X
Decatur Landfill	TN				X
Van Buren County Landfill	TN				X
Cedar Ridge Landfill	TN				X
Riegel Ridge Landfill	NC				X
Richland County Landfill	SC				X
Crystal Springs Rd. Park Site	FL	X			
Gifford Rd. Landfill	FL	X			
Oslo Landfill	FL	X			
South Winter Beach Landfill	FL	X			
Wingate Rd. Incinerator & Municipal Landfill	FL	X		X	
Solid Waste Landfill, Essex County	VA	X		X	
Big Run Landfill	KY	X		X	
Hopkins County Landfill	KY	X			
Newland Park Landfill	MD	X		X	X
Bakersfield Municipal (Bena) Landfill	CA	X	X	X	
Frank R. Bowerman Landfill	CA	X	X	X	
San Joaquin Landfill	CA	X		X	
San Marcos II Landfill	CA		X	X	
Santiago Canyon Landfill	CA	X		X	

F. Are your firm's personnel experienced in Landfill Closure cost estimating? **YES**

Description and Number of Projects

Geosyntec's experience in landfill design and associated closure cost estimating extends back to the original services provided to our clients since our inception in 1983. A critical service within this practice is assisting our clients with cost estimating. These services start at the design phase with conceptual costs for site preparation and cell construction, as well as value engineering and design modification evaluation that may result in additional airspace, cost savings, or lower operating costs. As a project progresses, Geosyntec assists our clients with permitting requirements, including closure and post-closure care estimate funding. **These estimates are critical for evaluating the viability of the landfill and creating monetary set asides and funding mechanisms for up to half a century from the date when the landfill first opens. During the landfill's operating life, Geosyntec routinely assists our clients with several types of cost estimating and cost evaluation services.** These services may range from engineer's estimates for cell construction or closure to contractor bid evaluation, and contract administration. As the landfill's operations move towards closure, Geosyntec assists our clients with closure cost estimates, post-closure care estimates, and value engineering.

Geosyntec personnel (including those assigned to this project) has performed landfill closure cost estimates **for more than 30** landfill facilities in the past five years. In order to complete these estimates, Geosyntec relies on a combination of professional experience, strong and open relationships with the contractors that actually perform the work, and industry accepted unit rates and assumptions. Material quantities are calculated using both computer-aided design (CAD) software systems and hand-calculations. Unit costs for the construction elements are established based on industry standards such as RS Means, contractor/vendor quotes, and historical unit costs compiled for similar projects undertaken by Geosyntec. **These unit costs are reviewed with the owner for consistency with the owner's own experience on prior** landfill closure construction projects.

While prices and historical costs are critical components of evaluation a project's true value, they do not provide a comprehensive understanding of the true impact of implementing the work. In order to better serve clients, Geosyntec also uses scheduling software to evaluate time, schedule, weather, operational limitation or restrictions, and material procurement schedules to provide a comprehensive understanding of project costs. Together, this information forms the basis for a detailed and thorough cost estimate that the client can rely upon with certainty.

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.)	YEARS OR EXPERIENCE **19**		
Othman, Majdi, A., PhD, PE	YEARS OF (type) EXPERIENCE: 19 (solid waste)	YEARS OF (type) EXPERIENCE:	YEARS OF (name type) EXPERIENCE:

Brief Explanation of Responsibilities:

Dr. Majdi A. Othman, PE, Principal based in Georgia, has 19 years of consulting engineering experience in geotechnical, environmental, and civil engineering projects. His work focuses on **waste disposal facility** siting, design, permitting, and construction; design and permitting of bioreactor landfills; landfill air permitting and compliance; design and permitting of landfill gas collection and utilization projects; **hydrogeologic investigations and groundwater impact analysis and protection; remediation of contaminated sites; and construction management.** Dr. Othman has conducted geotechnical and hydrogeologic investigations and performed site suitability and feasibility evaluations for the development of new landfills on "greenfield" sites and for the lateral and vertical expansions of existing landfills. He served as the project manager and **engineer of record on numerous permit applications** for hazardous waste, municipal solid waste, and construction and demolition waste landfills. He also led design efforts for low-level radioactive waste containment systems. His designs often involve the innovative application of technologies such as alternative liner and cover systems, mechanically-stabilized earth retaining walls, and bioreactor systems. **He was the design engineer of record for the closure of three landfills at an industrial site in West Virginia.** Dr. Othman was the engineer of record for over 20 gas collection and control system (GCCS) design and phasing plans. He led investigations of landfill gas migration issues, performed GCCS trouble shooting activities, and developed corrective action plans for several landfill sites. Dr. Othman **prepared construction bid documents for the construction and closure of waste disposal cells** and landfill GCCSs. He assisted several municipalities with the development of landfill gas to energy (LFGTE) projects and with emission reduction and carbon trading activities. Dr. Othman performed contaminant fate and transport analyses to assess the potential impacts of landfills on groundwater quality, and provided expert testimony on this topic.

EDUCATION (DEGREE, YEAR, SPECIALIZATION)

PhD, 1992, Geotechnical Engineering, University of Wisconsin
MS, 1989, Geotechnical Engineering, University of Wisconsin
BS, 1987, Civil Engineering, Kuwait University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:	REGISTRATION (Type, Year, State)
American Society of Civil Engineers (ASCE) International Society of Soil Mechanics and Foundation Engineering (ISSMFE) Jordan Engineers Association (JEA) Solid Waste Association of North America (SWANA)	Professional Engineer in the following: Alabama, Arkansas, Florida, Georgia, Illinois, Kentucky, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Mississippi, **West Virginia (PE #14962 since 17 September 2001)**, and Wisconsin.

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

NAME& TITLE (Last, first, Middle Int.)	YEARS OR EXPERIENCE 25		
Beech, John, F., PhD, PE	YEARS OF (type) EXPERIENCE: 22 (solid waste)	YEARS OF (type) EXPERIENCE: 3 (geotechnical)	YEARS OF (name type) EXPERIENCE:

Brief Explanation of Responsibilities:

Dr. Beech has 22 years of experience in the design, permitting, and construction of waste containment systems. He has been involved in the design of numerous single and double-liner systems and **cap systems** for containment of municipal solid waste, hazardous waste, and ash. Many of these projects have involved innovative designs to increase air space and decrease construction costs. Several of these projects have involved the construction of landfill lining systems over waste materials. Dr. Beech served as Geosyntec's National Field Services Manger from 1991 to 1997. In this role, he was responsible for the construction related services provided by the firm. As a result, Dr. Beech has extensive experience in **landfill construction**. He has been involved in construction projects in more than a dozen states. He is routinely called upon to perform constructability reviews and solve difficult construction problems.

EDUCATION (Degree, Year, Specialization)

PhD, 1986, Geotechnical Engineering, Cornell University
MS, 1978, Civil Engineering, Wayne State University
BS, 1977, Civil Engineering, Wayne State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers (ASCE); International Geotextile Society; North American Geosynthetics Society, Past-President Chi Epsilon Tau Beta Pi Fraternity	Professional Engineer in the following: Alabama, Arkansas, Connecticut, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, and Virginia.

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.) **Hayes, Michael, PE, LRS**	YEARS OR EXPERIENCE **14**		
	YEARS OF (type) EXPERIENCE: 14 (solid waste, remediation and waste water)	YEARS OF (type) EXPERIENCE:	YEARS OF (name type) EXPERIENCE:
Brief Explanation of Responsibilities: Mr. Hayes is a Professional Engineer with more than 14 years of experience in all aspects of civil and environmental engineering. His work has included project management and engineering experience for: remediation of hazardous waste facilities; Brownfield redevelopment; WV Voluntary Remediation Program; water and wastewater treatment; pumping systems and pump stations; **landfill capping and closure;** petroleum distribution; storage tank design and containment; site investigations; and wetlands mitigation. **Mr. Hayes was the engineer of record for the closure of two landfills in West Virginia, one of which was done through the WVDEP LCAP.** Mr. Hayes also has extensive experience in the preparation and development of SPCC Plans and Corporate SPCC Programs and engineering planning; SW3P Plans; **groundwater protection plans** (GPP's); and USEPA Facility Response Plans (FRP's) and Emergency Response Action Plans (ERAP's). Mr. Hayes' experience includes working directly with public advisory groups, citizen's action panels, negotiations with government agencies, and presentations to local government officials.			
EDUCATION (Degree, Year, Specialization) MS, 2004, Environmental Engineering, Marshall University Graduate College BS, 1995, Civil Engineering, West Virginia University			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Society of American Military Engineers (SAME)		REGISTRATION (Type, Year, State) Professional Engineer: WV Licensed Remediation Specialist: WV	

13c. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR HEAVY EARTH WORK CONSTRUCTION PROJECTS** (Furnish complete data but keep to essentials)			
NAME& TITLE (Last, first, Middle Int.) **Elder, Scott**	YEARS OR EXPERIENCE **17**		
	YEARS OF (type) EXPERIENCE: 17 (construction management and cost estimating)	YEARS OF (type) EXPERIENCE:	YEARS OF (name type) EXPERIENCE:
Brief Explanation of Responsibilities: Mr. Elder is Geosyntec Consultants' Regional Construction Services Manager. He has 17 years of environmental and civil engineering experience. As member of Geosyntec's senior management team, Mr. Elder manages the Atlanta-based construction services group and the regional radiological safety program. Mr. Elder's project experience includes dozens of projects in capacities ranging from **contractor oversight**/support services on Federal Superfund sites to managing enviro-civil construction and remediation projects. Mr. Elder has mediated with the public and private sectors within the residential, industrial, and commercial communities. Mr. Elder had managed **construction quality assurance (CQA)** projects, wastewater and groundwater treatment plant construction, contaminated soil treatment and removal, and fuel storage and delivery system removal and construction. During his career, Mr. Elder has been both a contractor and a consultant. As a project manager, he has been directly responsible for issues concerning contract compliance, **cost and budget tracking**, adherence to health and safety standards, resource allocation and scheduling, labor and subcontractor procurement, and management. As a consultant, Mr. Elder has been responsible for project design, creating specifications and contracts, contractor oversight, **cost estimating and tracking**, and regulatory interfacing, compliance, and reporting.			
EDUCATION (Degree, Year, Specialization) MBA, 2002, Management, Georgia State University BA, 1989, Biology, Wesleyan University			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)		

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE THIS PROJECT (name project)

- All Geosyntec personnel who will be involved in this project have desktop or laptop computers that use Microsoft Office (Word, Excel, PowerPoint, etc.)
- Five computer-assisted drafting and design (CADD) stations in primary and home offices with the capacity to add two additional CADD stations.
- Scanners, digitizers, high speed plotters.
- Other software used for landfill design is as follows:

ARCGIS	GINT	PSDDF
AUTODESK CIVIL 3D	HELP	RDV
AUTODESK LAND DEVELOPMENT	HYDROCAD	RESLOPE
CARLSON SURVCADD	KY-PIPE	SEEP/W
CLARA-W	LANDGEM	SRWALL
CARLSON SURVCADD	LOG PLOT	SHORING SUITE
CORPSCON	MEANS COST WORK	SIGMA/W
CYBERNET	MSEW	SLIDE
EARTH INFO	MULTIMED	SURFER
FOSSA	PIPE BUCK	VS2DI and XSTABL

Geosyntec maintains the following field equipment:

Drive cylinders	PDAs	Trucks
Nuclear density gauges	Sand cones	VS2DI and XSTABL

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD ASSOCIATED WITH OR RELATING TO LANDFILL CLOSURE OR CONSTRUCTION.

CLOSURE PROJECTS LISTED BELOW ARE FOR PRIMARY OFFICE ONLY. ENTIRE COMPANY HAS TENS OF OTHER CLOSURE PROJECTS.

PROJECT NAME,TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
East DeKalb Landfill, Lithonia, GA	Republic Waste Services 323 Marble Mill Rd Marietta, GA 30060	Develop closure construction drawings; CQA	$5 million	10%
Hickory Ridge Landfill Closure, Conley, GA	BFI Waste Systems of GA 3330 Moreland Ave Conley, GA 30288	Prepare construction documents; CM/CQA services for closure of 50 acres and constructing a LFG collection system	$7 million	15%
Phase 5/8A Closure, 5.2 Acre Closure Turnkey Landfill, Rochester, NH	Waste Management of NH 90 Rochester Neck Rd Rochester, NH 03839	Provide construction oversight; Prepare bi-weekly, mid-project, and final CQA reports	$4 million	75%
Comal County Landfill Phases I-III & Final Cap Construction Documents, Soil only Final Cover System Design, New Braunfels, TX	Waste Management of TX 1000 Kohlenberg Lane New Braunfels, TX 78130	Construction documents: drawings, specifications, CQA plan, bid documents, and procurement for 10-acre final cover system construction- included related final drainage features	$800,000	95%
Bolton Road Landfill Closure, Atlanta, GA	Waste Management of GA 2236 Bolton Road, NW Atlanta, GA 30318	32-acre landfill closure design, construction drawings, and bid assistance.	$3.5 million	10%
Mount Pisgah Landfill Closure, Johns Creek, GA	Mount Pisgah Christian School 9855 Nesbit Ferry Road Johns Creek, GA 30022	Conduct geotechnical investigation; Make recommendations on ground improvement; Prepare construction documents for LFG collection system; CQA	$1.2 million	95%

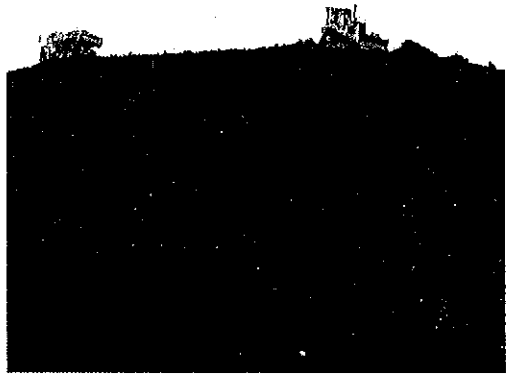
TOTAL NUMBER OF PROJECTS:	TOTAL ESTIMATED CONSTRUCTION COSTS:
Companywide, Geosyntec has over 40 active closure projects. Only those projects that are currently being performed in the Primary Office are listed above.	Geosyntec's estimated cost for active closure projects is about $200 million (about $21.5 million for the 6 projects listed above).

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

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)
Closure 2 waste disposal LFs Industrial Site, WV	Confidential Client	$2,150,000	2006	YES
Contaminated Soil Capping, Fike Chemical, Inc. NPL Site Nitro, WV	Project Coordinator for Fike/Artel Trust: Mr. Warren L. Smull Senior Project Director de maximis, Inc. 450 Montbrook Lane Knoxville, TN 37919	$3,500,000	2004	YES
Landfill Closure, McClellan Army Base Anniston, AL	Project Coordinator for Anniston Calhoun County/Fort McClellan Joint Powers Authority: Ms. Julie A. Carver, P.E. Senior Project Manager Matrix Environmental Services, L.L.C. 1601 Blake St, Ste 200 Denver, CO 80202	$2,000,000	2007	YES
Final Closure of Oakridge Landfill Modules 1 and 2 Dorchester, SC	Mr. Mike Loyd, P.G., Waste Management SC 360 New Hope Road Wellford, SC 29385	$800,000	2004	YES
Final Closure of R&B Landfill East Disposal Area Cells 1 and 2 Homer, GA	Mr. David Gibbons Waste Management of Georgia 2236 Bolton Road, NW Atlanta, GA 30318	$1,500,000	2006	YES
Final Closure of Richland Landfill Southeastern Area Elgin, SC	Mr. Mike Loyd, P.G., Waste Management SC 360 New Hope Road, Wellford, SC 29385	$1,000,000	2004	YES
Newland Park Landfill Cell 6 Partial Closure Salisbury, MD	Wicomico County Department of Public Works Government Office Bldg. Room 201 Salisbury, MD 21803	$400,000	2007	YES

Note: Descriptions for some of the projects included in this table are provided on the following pages.

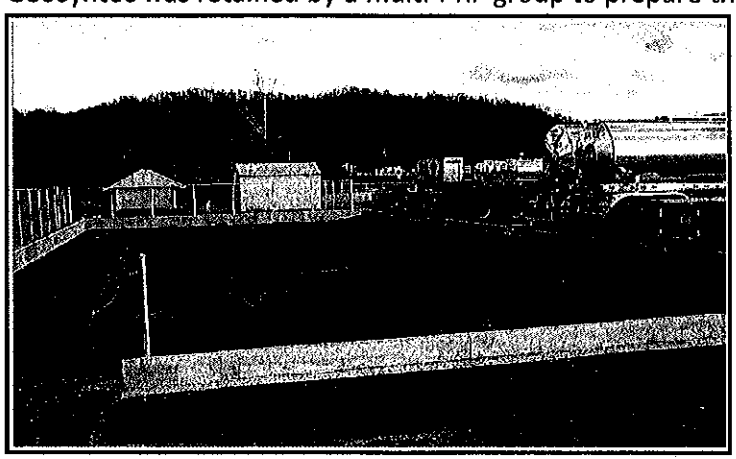
Closure of Three Waste Disposal Landfills on Industrial Site in West Virginia: Confidential Client



An industrial site located in West Virginia contained several old unlined landfills with a total volume of several hundred thousand cubic yards. Geosyntec performed soil, waste, and groundwater sampling/testing at the site, and evaluated the risks to groundwater and ecosystems. Geosyntec designed, permitted, and performed construction quality assurance (CQA) services for a Subtitle C lined landfill. The design incorporated a leachate collection, transfer, and storage system; a final cover system; and a surface water management system. Geosyntec prepared technical specifications, a CQA plan, a leachate handling plan, and an operations and maintenance plan. Waste was removed from a few of the old landfills, and was relocated to the lined landfill. Geosyntec provided resident engineering services during waste excavation, relocation, and placement in the On-Site Disposal Facility (OSDF). Geosyntec served as the engineer-of-record for the OSDF closure. Geosyntec also served as the engineer-of-record for the closure of a 3-acre industrial waste impoundment that was experiencing leachate seeps near the impoundment dikes. Geosyntec designed a Subtitle C cap and dike bank protective cover. Design analyses included settlement, stability, and geosynthetic materials selection. Geosyntec performed CQA services for construction of the final cover system.

Contaminated Soil Capping at NPL Site, West Virginia: Fike Chemical, Inc.

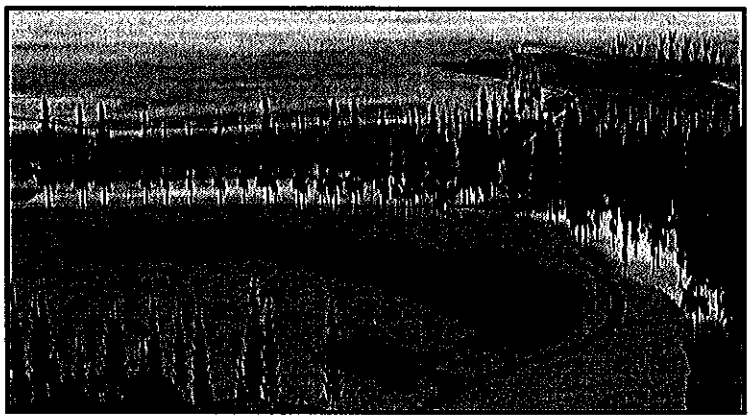
Geosyntec was retained by a multi-PRP group to prepare the remedial investigation and feasibility study documents for a former chemical recycling facility. The facility had soil and groundwater contamination including a list of over 50 compounds of potential concern. For the soils remedy, Geosyntec negotiated with EPA to eliminate the need for a RCRA cap on the chemical process area. Instead, we proposed an asphalt cap conducive to Site redevelopment. Successful asphalt cap installation



has led to redevelopment of the Site as a trucking parking area. Geosyntec performed geotechnical investigations and prepared design and construction documents for the cap. Construction quality assurance (CQA) activities were provided for removal of an existing lagoon, placement of engineered fill, final capping system construction, surface-water management system construction, and general site work.

Landfill Cap Closure: McClellan Army Base, Anniston, Alabama

The McClellan Site was utilized between 1917 - 1999 by the US Government and the US Army as a training facility. The base was closed under Base Realignment and Closure in September 1999. Two landfills at the Site were operated by the US Army, and closed prior to the existence of Federal or state environmental regulations governing landfills. Therefore, the landfills were closed without an engineered cover system. To comply with the substantive intent of federal and state environmental regulations for historical (i.e., legacy) landfills, an engineered cover was to be employed for the landfills. Geosyntec designed a final cover system for the landfills that: minimizes future direct exposure to wastes, promotes and manages surface water drainage while controlling erosion, minimizes leaching of contaminants to groundwater by limiting infiltration, and functions with routine maintenance requirements typical of a cover system. Geosyntec conducted a borrow investigation to identify suitable on-site sources of materials for the engineered soil covers.



One of the landfills is surrounded by wetlands and waters of the United States. To identify potential impacts from design/construction of the final cover, Geosyntec delineated the extent of jurisdictional wetlands and waters located near this landfill. Geosyntec also developed a creative engineering solution for management of surface water from this landfill to avoid impacting waters of the United States, yet still meeting the intent of local and state regulations. A portion of this landfill is also located in the 100-year floodplain, and construction of the final cover system will elevate the final grades of the landfill above the base flood elevation. Geosyntec demonstrated that construction of the final cover would not raise the base flood elevation greater than one foot; therefore, permission to fill in the floodplain was granted by the local floodplain administrator.

Geosyntec also prepared a redevelopment plan for one of the landfills that balanced the present environmental issues with future end use goals for the property. As part of the redevelopment plan, waste from the southwest corner of the landfill was excavated and relocated to accommodate the right-of-way for a future industrial access road. The plan

transformed the landfill into a passive recreational area, which blends into the surrounding natural setting and provides a future beneficial end use to the public.

Geosyntec prepared construction bid documents for the project including: construction drawings, technical specifications, bid form, etc. Geosyntec also responded to bidder's questions and issued addenda and modifications to the contract documents. Geosyntec provided construction quality assurance (CQA) services for the final cover construction.

Oakridge Landfill Modules 1 & 2 Closure, Dorchester, South Carolina: Waste Management

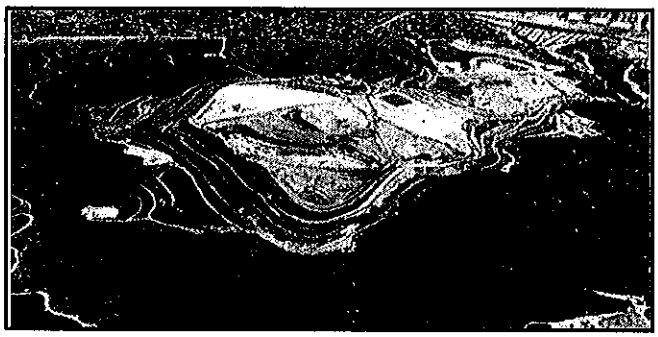
The Oakridge Sanitary Landfill is an active municipal solid waste landfill. The latest landfill permit documents were prepared by Geosyntec and approved by the South Carolina Department of Health and Environmental Control (DHEC) in January 2001. Geosyntec prepared detailed construction drawings and bid documents for the construction of an approximately seven-acre cover system for Modules 1 and 2 of the landfill. The construction drawings addressed construction of the final cover system including grading plans and construction details. Geosyntec prepared an equivalency demonstration to allow the use of alternative geosynthetic materials in the final cover system. In addition, Geosyntec performed analyses to evaluate whether the closure area has adequate factors of safety of static and seismic slope stability and to confirm that surface water management features are appropriately designed and are consistent with the permit documents. Geosyntec performed construction management (CM), procurement assistance, and construction quality assurance (CQA) services for the closure project.

18. COMPLETED WORK WITHIN LAST 5 YEARS IN WHICH YOUR FIRM HAS BEEN A SUBCONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK WHICH YOUR FIRM WAS RESPONSIBLE) LIST 5 TO 7.

N/A for Geosyntec Consultants

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

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.



Founded in 1983, Geosyntec is an employee-owned, multi-disciplinary, environmental and engineering consulting firm that provides professional services to public and private sector clients. Geosyntec brings value to its clients through technical innovation, exceptional project delivery, and outstanding service. Engineering News Record ranked Geosyntec number 92 among the Top 500 Design Firms in 2007. Geosyntec received the 2006 Pinnacle Award as a result of achieving both the Zweig Letter Hot Firm 2006 List and the CE News List of "Best Civil Engineering Firms to Work For", one of only two large firms throughout the U.S. to do so. Geosyntec has grown and diversified into more than 700 personnel in 42 offices throughout the U.S. and locations in Canada, Malaysia, and the United Kingdom.

Geosyntec specializes in the areas of: environmental assessment and monitoring, hydrogeology, hydrology, environmental engineering, geotechnical and civil engineering, and construction-related services. Geosyntec employs professionals who hold advanced degrees in the areas of geology, geographic information systems, hydrogeology, hydrology, geochemistry, geophysics, cartography, geography, chemistry, toxicology, industrial hygiene, biochemistry, microbiology, soil science, zoology, marine biology, fisheries science, civil, environmental, geotechnical, chemical, hydraulic, mechanical, and structural engineering.

The work for WVDEP-LCAP will be produced from our Huntington, West Virginia, and Atlanta, Georgia, offices. The Huntington and Atlanta offices have a combined employ about 90 professionals. Mr. Mike Hayes, a Senior Engineer in our Huntington Office, has previously served as the engineer of record for CQA and certification of closure of a large landfill through the LCAP.

Geosyntec is recognized as a leader in helping our clients achieve safe, secure containment of their regulated wastes requiring land disposal. We provide engineering and related services for siting, permitting, design, construction management/quality assurance, environmental monitoring, and closure/post-closure care.

We are experienced in the design of:

- municipal solid waste (MSW) landfills
- utility industrial ash and scrubber sludge monofills
- industrial/hazardous/remediation waste landfills
- construction and demolition waste disposal facilities
- radiological/mixed waste containment facilities

The applied research of our leading practitioners for USEPA, DOE, and industry associations has defined Geosyntec as a state-of-the-practice for more than 25 years. As a result, Geosyntec is often first-to-field with emerging technologies related to the secure, safe containment of our nation's solid wastes and industrial residuals. **Many of the waste containment system design methodologies that *Geosyntec pioneered* in the 1980s are today the *standards of practice in the field.*** We continue to work with federal and state agencies to field-test new technologies and develop guidance documents for their application. For example, Geosyntec partnered with the University of Illinois and Drexel University on a landmark 10-year study for USEPA that identified methods to improve the long-term performance of municipal and hazardous waste landfills. **Our senior practitioners, in collaboration with the academic community, authored the technical guidance for RCRA/CERCLA final cover systems for USEPA.** We worked closely with the Environmental Research and Education Foundation (EREF) and the Interstate Technology & Regulatory Council (ITRC) to develop new performance-based guidelines for assessing the post-closure care requirements of MSW landfills.

Solid and Hazardous Waste Services offered by Geosyntec include:

- Siting
- Permitting
- Geotechnical/Hydrogeological Investigations
- Liner and Cover System Designs
- Leachate Management, including passive treatment wetlands
- Vertical and Lateral Expansion Designs
- Surface Water Management
- Landfill Gas Management, including carbon/emissions trading and landfill-gas-to-energy systems
- Construction Management/CQA
- Closure/Post-closure Monitoring
- Remediation
- Groundwater Monitoring/Assessment

Geosyntec works with both public and private sector clients in the solid waste management industry.

Representative Clients include:

Private Sector	Public Sector
Waste Management, Inc.	California: Los Angeles County, Riverside County, San Diego County
Waste Industries	Florida: Escambia County, Indian River County, Miami-Dade DSWM
Waste Services Inc.	Georgia: DeKalb County, Fulton County, Catoosa County
Republic Services	New York: Islip Resource Recovery Agency, City of New York, Town of Babylon

20. The foregoing is a statement of facts

Signature: Majdi Ahmed Othman

Date: 4 May 2009

Title: Principal

Printed Name: Majdi Othman, Ph.D., P.E.