



# **EXPRESSION OF INTEREST**

To provide

**Professional Services**

***Site Characterization Study,  
Leachate Management***

***& Closure Cap with QA/QC***

***for the***

***City of Wheeling Landfill***

***Wheeling, West Virginia***

**Prepared for the**

**West Virginia Department**

**of Environmental Protection**

**Landfill Closure Assistance Program (LCAP)**

**By**

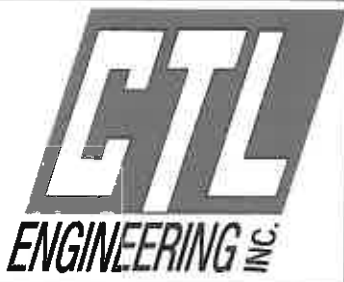
**CTL Engineering of West Virginia, Inc.**

**1091 Chaplin Road**

**Morgantown, WV 26501**

**(304) 292-1135**

11/22/16 09:11:33  
WV Purchasing Division



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# **Introduction & EOI Documents**

November 18, 2016

**West Virginia Department of Administration, Purchasing Division**  
2019 Washington Street East  
Charleston, WV 25305-0130

**Re: Solicitation NO. CE01 0313 DEP1700000002**  
**Expression of Interest**  
**Site Characterization Study, Leachate Management and Closure Cap with**  
**QA/QC for the City of Wheeling Landfill**

Ladies and Gentlemen:

CTL Engineering of WV, Inc. is (CTL) very pleased to present this interest to provide engineering and related services for the City of Wheeling Landfill project. With over 80 years in the business, we feel our firm can provide the professionals and facilities required by the State of West Virginia to complete the project.

Our understanding is that this submittal addresses all required elements of the solicitation including completed certification and signature form, purchasing affidavit, Form ID WV-PRC-CEOI-001, and West Virginia Department of Environmental Protection Landfill Closure Consultant Qualification Questionnaire. The Terms and Conditions are acceptable to us and we carry the required insurance.

CTL is a recognized leader in engineering services in West Virginia. Our capabilities include laboratory facilities, drilling rigs, surveying systems, design equipment, and a qualified professional staff. Our in-house ability reaches beyond simply being a reclamation design firm. We also have extensive contract administration and management experience with the procedures of the state of West Virginia. Our invoicing procedures and accounting software has been accepted, used, and audited by various state agencies.

CTL Engineering has formulated a strong team to effectively, efficiently complete the closure for the Wheeling Landfill. The team includes CTL and Chicago Bridge & Iron (CB&I). CTL is be prime and responsible for overall project management and execution, site investigations and site characterization, permitting and approvals, and construction quality assurance and quality control. CB&I will be the key subcontractor with responsibility for engineering and design for the capping systems, leachate collection and storage systems, and other design elements for the closure. Refer to the team organization chart and team experience matrix. Key personnel from CTL and CB&I have prior project experience working together which will allow for seamless integration of project teams and successful project execution.

Key characteristics for the team include:

- **The team has strong experience with the LCAP program.** CTL's experience includes field activities under the LCAP program for Wheeling Landfill and also for Monongalia Landfill, Clarksburg Landfill, Buckhannon Landfill, Marion County Landfill, Moundsville Landfill, Morgan County Landfill, Capon County Landfill, Grant County Landfill, Central West Virginia Landfill, Dons Disposal Services Landfill, South Charleston Landfill, Montgomery Landfill, Pine Creek / Omar Landfill, Mingo County Landfill, and Midwest Landfill. CB&I's experience includes landfill investigative, engineering and design efforts associated with Wheeling Landfill, Monongalia Landfill, Moundsville Landfill, and 15 other CAP Landfills.
- **Key technical staff have prior experience with Wheeling Landfill.** For CTL, Messrs. Pat Gallagher, Carl Selfridge, and James Gowarty have previously been engaged in CTL's LCAP work at Wheeling Landfill. For CB&I, Mr. Harry Dravecky and Dr. Jim Kilburg have previously been engaged in CB&I's hydrogeological work under the LCAP program for Wheeling Landfill.
- **Design Team experience with LCAP program closure.** Mr. Harry Dravecky and Dr. Jim Kilburg have experience with design in support of closure under the LCAP program including completion of projects for Rehe Landfill, Hampshire Country Landfill, and Moundsville Landfill.
- **Geotechnical Expertise.** Mr. Pat Gallagher has more than 40 years of experience with geotechnical engineering in West Virginia. Mr. Gallagher is a recognized geotechnical expert for projects in West Virginia and has experience with a wide array of projects. Mr. Gallagher is intimately familiar with geologic conditions and associated engineering challenges for locales throughout West Virginia.
- **Site Proximity & Efficiency.** CTL's base of operations for project personnel will be Morgantown, West Virginia and CB&I's base of operations for project personnel will be Pittsburgh, Pennsylvania. Both locations are in relatively close proximity (approximately 70 driving miles) to the Wheeling Landfill site. Senior personnel for CTL and CBI have prior experience working together which will allow for seamless integration of project teams and successful project execution. This proximity and experience will support efficient, cost-effective execution of the work.
- **Experience and Resources.** CTL has more than 35 years of experience in West Virginia under the leadership of Mr. Pat Gallagher and a long record of successful projects. CTL has drilling and laboratory operations based in Morgantown which will provide necessary completion of site investigation and characterization activities. Proposed project personnel for CTL are based in Morgantown and will be supported, as/if necessary, from the full resources of the CTL organization which includes more than 225 people. CB&I is a nationally-cognized firm with experience with more than 10,000 sites including 700 investigations for landfills. Proposed project personnel for CB&I are based in Pittsburgh with key personnel from CB& and CTL having prior project experience working together. The CB&I team will be supported, as/if necessary, from the resources throughout its organization which includes more than 2,500 people.



We sincerely appreciate the opportunity to submit this proposal to you for consideration. Should you have any questions or need additional information, please contact our office. We look forward to the opportunity to complete an Oral Interview in support of our interest in the project.

Respectfully submitted,

**CTL Engineering of West Virginia, Inc.**

A handwritten signature in black ink, appearing to read "Royden Loucks". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Royden L. Loucks  
Director Business Development





Purchasing Division  
 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: 254208

Doc Description: EOI: City of Wheeling Landfill Closure Cap Design

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2016-10-06	2016-11-15 13:30:00	CEOI 0313 DEP1700000002	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:  
 CTL Engineering of West Virginia, Inc.  
 1091 Chaplin Road  
 Morgantown, WV 26501  
 304-292-1135

**FOR INFORMATION CONTACT THE BUYER**

Jessica S Chambers  
 (304) 558-0246  
 jessica.s.chambers@wv.gov

Signature X

FEIN #55-063-1834

DATE 11/11/2016

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

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: DEP 1700000002**

**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:**

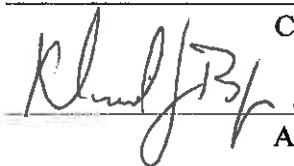
(Check the box next to each addendum received)

- |                                                    |                                          |
|----------------------------------------------------|------------------------------------------|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> 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.

CTL Engineering of West Virginia, Inc.

Company



Authorized Signature

November 18, 2016

Date

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

Revised 6/8/2012



**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

*Daniel J. Barton*, Project Manager/Administrator  
 (Name, Title)  
 Daniel J. Barton, P.E., Project Manager/Administratior  
 (Printed Name and Title)  
 1091 Chaplin Road, Morgantown, WV 26501  
 (Address)  
 (304) 292-1135 (304) 296-9302  
 (Phone Number) / (Fax Number)  
 dbarton@ctleng.com  
 (email address)

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

CTL Engineering of West Virginia, Inc.

(Company)

*[Signature]* PRESIDENT  
 (Authorized Signature) (Representative Name, Title)

Patrick E. Gallagher, President

(Printed Name and Title of Authorized Representative)

November 18, 2016

(Date)

(304) 292-1135 (304) 296-9302

(Phone Number) (Fax Number)

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 exceeds 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: CTL Engineering of West Virginia, Inc.

Authorized Signature: \_\_\_\_\_ Date: 11/18/2016

State of West Virginia

County of Monongalia, to-wit:

Taken, subscribed, and sworn to before me this 18th day of November, 2016.

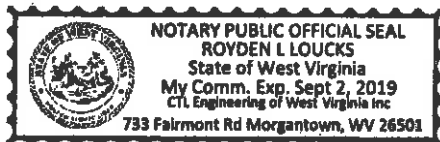
My Commission expires September 02, 2019.

**AFFIX SEAL HERE**

**NOTARY PUBLIC**

*Royden Loucks*

*Purchasing Affidavit (Revised 08/01/2015)*





# **Corporate History & Service Expertise**

# Corporate Qualifications

## CTL Engineering, Inc.

### Experts in:

*Transportation*

*Building Development*

*Manufacturing*

*Telecommunication*

*Energy*

CTL takes "ownership" in the projects we are assigned. Our dedication to success has served as a catalyst for building long standing relationships with our clients. Our clients continue to use CTL for their engineering needs because they know we provide nothing short of the highest quality.

For more information on any of our products or services please visit us on the Web at [www.ctleng.com](http://www.ctleng.com)



- **87 Years of Engineering Expertise**
- **Equipment and Personnel to Fully Man 8 Survey Crews**
- **9 Geotechnical Drilling Rigs**
- **Employee Owned Company**

CTL Engineering, Inc. is a full service consulting engineering, testing, inspection, and analytical services company. Established in 1927 and formerly known as Columbus Testing Laboratory, CTL focused mainly on soils, foundation engineering, and construction testing and special inspections. The successes, experience, equipment, and expertise gained in these areas led to a natural expansion into the metallurgical, non-destructive testing, mining, roofing, and environmental service industries. CTL Engineering, Inc. now has over 200 employees including registered professional engineers, geologists, environmental engineers/scientists, chemists, technicians, surveyors, and design staff. CTL Engineering is an employee owned

company that has the necessary personnel, experience, equipment, and qualifications to provide services in the following disciplines: Geotechnical Engineering, Environmental Services, Civil Site Design, Site Planning, Observation and Testing of Construction Materials and Processes, Mechanical and Metallurgical Analysis, Roofing Design and Inspection, and Structural Steel and Product Testing.

CTL Engineering, Inc. is headquartered in Columbus, Ohio. CTL also operates 10 branch offices throughout Ohio, West Virginia, and Indiana.



# Corporate Qualifications

## CTL Engineering of West Virginia, Inc.



Gateway Development Site: I-79 Exit 155

As part of CTL Engineering, Inc., CTL Engineering of West Virginia, Inc. was founded in 1981 giving us more than 30 years in the state. Our office locations in South Charleston and Morgantown enable CTL to easily provide our services for projects throughout the state as a whole. With approximately 50 employees distributed between our two West Virginia locations, we are well suited to handle projects of all sizes. Our West Virginia staff also includes 5 professional engineers and two professional surveyors.

CTL Engineering of West Virginia, Inc. provides total civil site design for development projects throughout West Virginia. These designs include site layouts, utility design and interconnections, stormwater management design, parking and roadway design, as well as permit preparation and submittal. CTL will work with the project architects, owners, and all involved parties to play our part in bringing your project to fruition.

## Qualified Team

- 5 Professional Engineers with diverse backgrounds including geotechnical engineering, civil engineering, and environmental engineering
- Skilled surveying staff equipped with the most up-to-date equipment and GPS units
- Extensive experience working with Federal, State, and private entities
- 30+ Years of working in West Virginia
- Working knowledge/understanding of the states geology & geography allowing us to provide custom solutions—we don't just pull plans from a book

## SERVICES AVAILABLE

Civil Site Design  
Surveying/Mapping  
Geotechnical Engineering  
Construction Observation  
Materials Testing  
Site Layout  
Project Management & Compliance

### Client

Our clients are our livelihood and therefore, we make it our personal objective to achieve 100% client satisfaction on every project regardless of size or scope.

### Teamwork

Teamwork is a necessity. Not only from an interdepartmental perspective but also from an external perspective. It is imperative that we work together with architects, owners, and any other stakeholders when taking on a project.

### Listen

In order to provide our clients with the most appropriate solutions to meet their needs, we LISTEN. By listening to our clients needs and asking the right questions we are able to clearly identify what is needed to take on a given project in the most efficient manner possible.

For more information on any of our products or services please visit us on the Web at [www.ctleng.com](http://www.ctleng.com)



#### Analytical Chemistry

- Organics
- Metals
- Liquid and Solid Fuels
- Soil and Water
- Oils and Sludge
- Solid & Hazardous Wastes
- Construction Materials

#### Computer Technology

- Drafting Services
  - AutoCad
  - Digitizing
  - Microstation
- Software Development
  - Internet & Intranet
  - Application Software

#### Construction Administration

- ODOT LPA Projects
- County & Municipal Projects
- Daily On-Site Inspections
- Owner's Representative

#### Construction Services

- Floor Flatness
- Soils, Concrete, Asphalt, Masonry, Fireproofing, and Steel
- Earth and Concrete Dams
- Pavements for Streets and Airports
- Pre and Post Construction Inspection
- Embankments, Fill, and Cut

#### Environmental

- Phase I & II ESAs
- RCRA Closure & Site Remediation
- Asbestos/Lead/Mold Surveys
- Abatement Design/Monitoring
- Wetlands Delineation, Permitting & Mitigation
- Endangered Species/Ecological Surveys
- Stormwater Management
- Water Resource Engineering
- Underground Storage Tank Management per BUSTR
- Hydrogeologic Studies & Aquifer Characterization

#### Existing Structure Evaluation

- Delamination Determination
- Bridges/Buildings
- Sonic Velocity Testing
- Half Cell Potential Testing

#### Forensic Science

- Roofing Failures
- Building Failures
- Legal Testimony
- Product Liability

#### Forensic Investigations

- Landslide, Soil and Foundation Failures
- Accident Reconstruction

#### Geotechnical

- Site Selection
- Pavement Design (including CBR Study)
- Foundation Analysis & Design
- Embankment & Earth Dam Analysis
- Slope Stability Analysis
- Subsurface Exploration - Drilling Services

#### Ground Penetrating Radar

- Concrete Inspection & Evaluation
- Bridge Inspection
- Utility Detection and Mapping

#### Materials Testing

- Concrete
- Aggregates
- Soils and Rock
- Clay & Masonry Products
- Bituminous Materials
- Petrographic Studies
- Concrete & Asphalt Mix Designs

#### Metallurgy

- Metallography
- Failure Analysis
- Fracture Analysis
- Corrosion Studies
- Tensile and Hardness
- Application Recommendations

#### Mining Engineering

- Mine Plan Design
- Permit Preparation
- Refuse Disposal Design
- Mine Reclamation Design
- Environmental Monitoring
- Subsidence Investigation
- Drainage Control Structures

#### Nondestructive Testing & Inspection

- Level II Services
- Ultrasonic Inspections
- Liquid Penetrant Inspections
- Magnetic Particle Inspections

#### Pavement Management

- Budgeting
- Prioritization
- Deterioration Rates
- Condition Assessment
- Maintenance & Rehabilitation Strategies
- Network Needs & Long Range Goals

#### Product Testing

- Calibration
- Design Analysis
- Safety Evaluation
- Hydrostatic Testing
- Mechanical and Physical Property Testing
- Load and Strength Testing

#### Roofing Engineering & Building Envelope Services

- Infrared & Nuclear Testing
- Air/Water Infiltration
- Quality Control
- Roof Surveys Evaluation
- Design & Construction Administration

#### Roof Management Systems

- Budgeting
- Prioritization
- Deterioration Rates
- Condition Assessment
- Maintenance & Rehabilitation Strategies

#### Security & Safety Systems

- Design
- Construction
- Paging Systems
- Video Surveillance
- Intrusion Detection
- Card Access Control
- Audio Visual Solutions
- Digital Video Recording

#### Site/Civil Engineering

- Commercial Land Development
- Infrastructure Planning
- Residential/Community Planning

#### Surveying & Mapping

- Topographic Mapping Development
- Property Surveying & Boundary Determination
- Global Positioning System

#### Telecommunication Services

- Design
- Construction
- Existing Structure Analysis & Maintenance
- Lighting Systems
- Inventory & Warehousing

#### Welding & Quality Control

- QA/QC Programs
- Certified Welding Inspection
- Welding/Brazing Qualification
- Procedure Development

## OFFICE LOCATIONS

2860 Fisher Road  
**Columbus, OH 43204**  
Phone: (614) 276-8123  
Fax: (614) 276-6377

1310 S Franklin Road  
**Indianapolis, IN 46239**  
Phone: (317) 295-8650  
Fax: (317) 295-8395

3085 Interstate Parkway  
**Brunswick, OH 44212**  
Phone: (330) 220-8900  
Fax: (330) 220-8944

3902 New Vision Drive  
**Fort Wayne, IN 46845**  
Phone: (260) 482-4503  
Fax: (260) 482-2002

633 High Street  
**Minford, OH 45653**  
Phone: (740) 820-8355  
Fax: (740) 820-5698

102 Commerce Drive  
**Wapakoneta, OH 45895**  
Phone: (419) 738-1447  
Fax: (419) 738-7670

1091 Chaplin Road  
**Morgantown, WV 26504**  
Phone: (304) 292-1135  
Fax: (304) 296-9302

2105 Schappelle Lane  
**Cincinnati, OH 45240**  
Phone: (513) 722-8665  
Fax: (513) 834-6650

100 Central Plaza N  
**Canton, OH 44702**  
Phone: (330) 994-1590

Sachina Engineering  
407 "B" Block  
SNS Arcade, Airport Road  
**Bangalore, India**  
560017  
011-91-80-526-8615



▶ **CTL Engineering's Geotechnical Department routinely performs subsurface investigations and soil and rock testing. We prepare engineering reports, make recommendations regarding foundation and construction techniques, and perform other geotechnical services, as dictated by a given project.**

#### **Drilling Services:**

CTL Engineering owns and operates its own fleet of drill rigs. Our rigs are capable of Hollow Stem Augering, Rotary Core drilling and Direct Push Sampling. CTL is able to perform in house energy transfer calibrations on all of its automatic drive hammers. In fact, CTL calibrates many of our competitors' drive hammers as well.

CTL has continuously owned and operated drilling equipment since the 1970's. We have the equipment and experience to perform just about any geotechnical or environmental drilling project you may have.

#### **Analytical Laboratory:**

Our soils laboratory has been accredited by AMRL since 1999. The lab has consolidometers, triaxial and direct shear apparatus, permeability devices, soil compaction, soils classification equipment, and other laboratory testing equipment. We routinely perform testing on undisturbed as well as remolded soil samples. We also provide strength and durability testing services on rock samples.

#### **Geotechnical Services:**

- Complete Subsurface Exploration Study
- Foundation Analysis
- Pile, Pier, and Caisson Analysis & Inspection
- Embankment & Earth Dam Analysis
- Slope Stability Analysis
- Settlement Analysis
- Pavement Design
- Rock & Mineral Testing
- Hydrogeologic Studies
- Field and Laboratory Testing of Soils/Rock
- Legal Testimony
- Dynamic Pile Testing

**CTL Engineering routinely provides subsurface investigations on the following:**

- Roads and Bridges
- Airport Terminals, Runways, and Taxiways
- Water/Wastewater Treatment Facilities
- Hospitals, Parking Garages, Higher Education, and PK-12 School Buildings
- Energy Facilities
- Telecommunication Towers
- Commercial, Retail, and Industrial Facilities



Drilling in Rough Terrain



Drilling on Flat Terrain



▶ **CTL Engineering maintains a full service, in-house surveying and mapping team, which has extensive experience in performing most common surveying needs.**

CTL Engineering has the professional staff and the latest equipment to support eight (8) full survey crews. Our equipment includes a Global Positioning System and robotic surveying instruments which gives us an added dimension to our surveying and mapping capabilities.

We have performed surveying and mapping on many of our civil/site projects and have supplied construction stakeout and monitoring for many of our clients.

#### **Professional Services:**

- Property Surveying and Boundary Determination
- Topographic Mapping Development
- Aerial Mapping Layout and Control
- Gas Midstream Development and Construction Surveys
- Construction Layout
- Settlement Plate Monitoring
- Micrometer Leveling
- Flood Plain Determination and Certification
- Wetland Profiling

#### **Project Synopsis**

- Residential Subdivision Layout
- Commercial Development Layout
- Access Road and Parking Lot Layout
- Bridge Construction Layout and Monitoring
- Elevation Certificates (FEMA)
- Property Survey Projects
- Storm Water Surveillance Mapping
- Water Body Sounding Studies







In-Situ Remediation



Underground Storage Tank Removal



Invasive Species Control



Friable Asbestos Pipe Insulation



Cellular Tower Site Assessment



Wetland/Stream Mitigation & Monitoring

▶ **CTL has been providing Environmental Services since 1987 and has successfully completed over 7,100 projects of varying complexities for a diversified clients.**

Our clients includes Governmental agencies, Universities, Private Banks, Developers, Communication Tower, Pipeline and Oil & Gas Exploration Companies, etc. Our years of experience have made us aware of the regulatory and technical challenges our clients face when environmental issues arise.

Our clients have come to appreciate our ability to balance regulatory requirements while maintaining projects' feasibility and continuity. With multiple office locations and a knowledgeable staff of geologists, environmental scientists/engineers, wetland scientists, industrial hygienist, and certified HazMat professionals, we can provide a diverse range of environmental services to our local and regional clients. Whether our clients need a Phase I ESA or a full-scale remediation project, CTL Engineering's Environmental Department is the single source for your environmental needs.

**Additional Environmental Related Services:**

**Real Estate Related Services**

- Phase I and II ESA's
- Transaction Screenings
- FCC/NEPA Section 106 Reviews

**Building Evaluation Services**

- Asbestos Hazard Evaluations
- Asbestos Abatement Design/Monitoring
- Lead-Based Paint Surveys
- Indoor Air Quality Assessments
- Mold Testing and Remediation

**Ecological Services**

- Stream, Wetlands & Jurisdictional Waters of the U.S. – Assessment & Delineation
- 404/401 Wetland Permitting
- Wetland/Stream Mitigation and Monitoring
- Threatened & Endangered Species Habitat Research and Surveys

**Underground Storage Tank Services**

- UST Removal & Closure
- BUSTR Tiers 1, 2 & 3 Evaluations
- Remedial Investigations and Corrective Actions

**Geophysical Surveys**

- Ground Penetrating Radar (GPR) survey to detect utilities and orphan USTs
- Resistivity Testing of soil for grounding system designs.

**Hydrogeologic Services**

- Soil Borings & Subsurface Evaluations
- Ground Water Investigations
- Monitoring Well Installation
- Soil & Ground Water Remediation
- Groundwater Mapping/ Modeling
- Storm Water Pollution Prevention Plans (SWPPP) Preparation, Design, and Inspections

**Permitting/Compliance**

- NPDES Permitting Support
- Solid-Waste Landfill Permitting
- Permit to Install/Operate (PTI & PTO)
- Compliance with Permit Conditions

**Waste Management Services**

- Hazardous & Non-Hazardous Waste Characterization and Disposal
- Spill/ Discharge Response Plans
- Effluent Sampling & Analysis
- RCRA Planning and Closure
- Spill Prevention Control & Countermeasure Plans (SPCC)

**Transportation Related Services**

- Environmental Screening
- CE Documentation Preparation
- BUSTR Site Assessment
- Ecological Investigations



▶ **CTL Engineering is a leader in providing analytical services to the construction industry.**

We maintain a staff of experienced personnel and accurate equipment to guarantee dependable results. We evaluate all types of construction materials. Additionally, CTL Engineering can prepare and test Portland cement and bituminous concrete mixes for optimization studies to insure the proper mix design for specific jobs.

CTL Engineering offers petrographic examination of construction materials. These specialized microscopic evaluations allow us to closely evaluate concrete quality and determine the causes and extent of failures in concrete, in addition to potential future performance.

In addition to the standard ASTM tests of strength, absorption, dimensions unit weights, etc., CTL Engineering provides several specialty tests on concrete block and brick, including the fire rating test, specified by the BOCA, and efflorescence testing required by many architectural firms.

CTL Engineering also provides complete and thorough analysis of clay products.

**CTL Engineering provides complete testing of the following:**

#### **Aggregates**

- Component Analysis (sand, gravel, limestone) - Department of Transportation
- Filter Sand - Environmental Protection Agency (EPA)
- Railroad Ballast - American Railroad Engineering Association
- Rip-Rap - U. S. Soil Conservation Service

#### **Soils**

- Classification
- Compaction Parameters
- Permeability Tests

#### **Concrete**

- Mix Designs
- Mix Verification Tests to verify strength, air content, consistency, and yield of concrete
- Compression Tests
- Flexural and Split Tensile Strength Tests
- Modulus of Elasticity
- Creep Testing

#### **Asphalts**

- Mix Designs
- Nuclear Gauge Calibrations Extractions and Grading
- Core Testing and Density of Strength

#### **Clay-brick, Pipe & Tile**

- Compressive Strength
- Absorption
- Freeze-thaw
- Efflorescence
- Dimensional Analysis
- Acid Resistance

**In addition to the standard tests that are required by specification, we perform specific tests on construction materials as dictated by the needs of the client.**



➤ **CTL Engineering's Construction Administration Services include On-Site Daily Inspections**

Federal, State, and Locally funded Construction Projects require a high level of administration and quality control to meet the project's demands. The Counties and Municipalities, through ODOT's LPA Program, as well as private Owners, Developers, and Contractors have selected CTL Engineering for Construction Administration, knowing that we have the experienced staff to be accurate, dependable, and perform these services in a timely manner. Our experienced engineers, inspectors, and technicians are your partners in construction. We help in completing these projects successfully a meeting the specific project requirements.

CTL Engineering's qualified construction inspectors will observe and inspect your construction project and complete the necessary daily documentation required by the Federal, State, and Local funding agencies participating in the project.

CTL Engineering also provides in-house testing services such as concrete, asphalt, and sub-grade compaction, as well as daily on-site inspection services.

**CTL Engineering provides the following Construction Administration Services:**

- Conduct Pre-Construction Conference
- Project Team Coordination
- Field Reports & Construction Documents' Administration
- Field Engineering and Inspections
- Material Certification and Shop Drawing Reviews
- Progress Meetings and Schedule Tracking
- Payments and Reimbursements
- Change Order Reviews
- Prevailing Wage Compliance
- EEO/DBE Contract Requirements
- Project Closeout Activities

**CTL Engineering's On-Site Inspector provides and/or participates in the following Daily On-Site Inspection Services:**

- Pre-Construction Conference
- Prepare Field Inspection & Quantities Reports
- Prepare Construction Documentation & provide to Construction Administrator
- Field Engineering in conjunction with Construction Administrator
- Observe & verify materials being used for the project
- Observe, identify and notify Construction Administrator of deficiencies
- Provide Construction Administrator with monthly quantities for payment preparation
- Material Testing, i.e., compaction, concrete, asphalt, etc.



**Landfill Closure  
Consultant Qualification  
Questionnaire (LCCQQ)**



**LCCQQ**

**CTL Engineering  
Of West Virginia, Inc.**



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". This project will be a teaming project between CTL Engineering, Inc. (CTL) of Morgantown, West Virginia and CB&I Environmental & Infrastructure, Inc. (CB&I) of Pittsburgh, Pennsylvania. CTL will be the Prime Contractual Consultant and will perform the site characterization and construction quality assurance phase of this project. CB&I be a sub-consultant to CTL and will prepare the landfill cap design, storm water management, and leachate management phase of this project.

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

11. OUTSIDE KEY CONSULTANTS/ SUB-CONSULTANTS ANTICIPATED TO BE USED.		
NAME AND ADDRESS: CBI Environmental & Infrastructure, Inc. 500 Penn Center Blvd. Suite 1000 Pittsburgh, PA 15235	SPECIALTY: Solid Waste Landfill Design	WORKED WITH BEFORE  YES NO
NAME AND ADDRESS: Blue Mountain Aerial Mapping 10125 Mason Dixon Hwy Burton, WV 26562	SPECIALTY: Aerial Photography & Mapping (To sub if needed)	WORKED WITH BEFORE  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:**  
 CTL Engineering is experienced with solid waste landfill projects and comparable projects involving coal combustion residuals (CCR) landfills. Our experience with the LCAP program involves field activities related to monitoring well installation, development and abandonment for 16 landfills in 15 counties in West Virginia.

CTL Engineering has formulated a strong team to effectively, efficiently complete the closure for the Wheeling Landfill. The team includes CTL Engineering with responsibility as prime for overall project management and execution, site investigations and site characterization, permitting and approvals, and construction quality assurance and quality control, and key subcontractor Chicago Bridge and Iron (CB&I, formerly Shaw Environmental, Inc. ) with responsibility for engineering and design for the capping systems, leachate collection and storage systems, and other design elements for the closure. Refer to the team organization chart. Key personnel from CTL and CB&I and have prior project experience working together which will allow for seamless integration of project teams and successful project execution. Refer to the team experience matrix.

The team has strong experience with the LCAP program:

CB&I performed site characterization; design of landfill cap system, including grading; storm water management design; and leachate management design; and construction quality assurance and quality control during closure activities at four LCAP landfills in West Virginia, including City of Moundsville Landfill, Hampshire County Landfill, Rehe Landfill, and Monongalia County Landfill. CB&I also has nationwide experience in solid waste landfill construction and

County Landfill. CB&I also has nationwide experience in solid waste landfill construction and closure design at more than 200 municipal waste landfills nationwide.

CTL performed activities under the LCAP program for Wheeling Landfill and also for Monongalia Landfill, Clarksburg Landfill, Buckhannon Landfill, Marion County Landfill, Moundsville Landfill, Morgan County Landfill, Capon County Landfill, Grant County Landfill, Central West Virginia Landfill, Dons Disposal Services Landfill, South Charleston Landfill, Montgomery Landfill, Pine Creek / Omar Landfill, Mingo County Landfill, and Midwest Landfill. This work was related to the 16 landfills in 15 counties in West Virginia mentioned above.

**NO**

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

**YES Description and Number of Projects:**

Team member CB&I has performed site characterization at four LCAP landfills in West Virginia as part of the closure design. These landfills include City of Moundsville Landfill, Hampshire County Landfill, Rehe Landfill, and Monongalia County Landfill. CB&I has experience in solid waste landfill site characterization assessment at more than 200 municipal waste landfills nationwide.

**NO**

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

**YES Description and Number of Projects:**

CTL Engineering has experience with construction activities for landfills and solid waste facilities. This work includes ongoing construction and certifications associated with the CCR landfill at Harrison Power Station and work associated with landfill construction for the North Mountain Landfill and Wetzel County Landfill.

Team member CB&I has performed landfill closure construction inspections at four LCAP landfills in West Virginia as part of the closure design. These landfills include City of Moundsville Landfill, Hampshire County Landfill, Rehe Landfill, and Monongalia County Landfill. CB&I has also performed construction and closure inspections at more than 200 municipal waste landfills nationwide.

**NO**

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

**YES Description and Number of Projects:**

Historically, Aerial Photography and Mapping has been subcontracted to Blue Mountain Aerial Mapping with CTL providing all survey control. CTL is currently performing photography and mapping for small projects using a drone owned and operated by CTL personnel and is projecting to expand this service to larger projects. This approach has been provided for over 30 projects for private developers and State Agencies in West Virginia, Maryland and Ohio.

Team member CB&I has utilized the services of aerial photography companies to develop topographic contour maps at four LCAP landfills in West Virginia as part of the closure design. These landfills include City of Moundsville Landfill, Hampshire County Landfill, Rehe Landfill, and Monongalia County Landfill. CB&I has also obtained topographic maps for more than 10 municipal waste landfills in Pennsylvania and for other solid waste disposal facilities, including residual waste landfills and CCR landfills.

**NO**



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:**

Team member CB&I has extensive experience with groundwater contamination as may be associated with landfills. CB&I has completed over 10,000 site investigations and assessments nationwide including over 700 hydrogeological investigations at municipal, residual, and hazardous waste landfills. Landfill-related hydrogeological investigations performed were for permit applications to construct and operate landfills, landfill closures, and assessment of groundwater for potential impacts from disposal facilities. The following geological and hydrogeological-related projects have been and continue to be performed by Shaw:

- Reviewed and evaluated existing geological and hydrogeological information related to disposal facilities (including hydrogeological reports, geological maps and reports, topographic and terrain maps, water quality information, climatological information, and water well and spring records).
- Performed field reconnaissance work to identify and delineate factors that may affect the occurrence and distribution of groundwater, including taking inventories of existing water wells, mine drainages, and springs to determine their characteristics and water quality.
- Determined hydrogeological settings of groundwater monitoring well systems and determined screened intervals of existing wells and geological intervals in which new groundwater monitoring wells should be screened.
- Delineated geological conditions, including the identification of bedrock units, structural attitude of bedrock units, folding, faulting, and joints (fractures).
- Installed hundreds of groundwater monitoring wells and piezometers and obtained surveyed locations and elevations of these wells and piezometers.
- Developed groundwater contour maps, structure contour maps, geologic maps, and lithologic maps using site-specific information and published geological information.
- Identified and delineated unconfined and confined aquifers.
- Determined directions and rates of groundwater movement.
- Delineated aquifer recharge and discharge areas.
- Performed aquifer tests (pumping and slug tests).
- Determined aquifer characteristics (hydraulic conductivity, transmissivity, permeability, specific yield, storage coefficient, groundwater velocity, etc.).
- Prepared and implemented hydrogeological work plans.
- Prepared and implemented sampling and analysis plans.
- Sampled groundwater monitoring wells, springs, seeps, mine discharges, and streams.
- Reviewed analytical results for groundwater samples (as well as spring, seep, and stream samples) and performed statistical analyses to evaluate potential impacts.
- Prepared groundwater models using commercial groundwater modeling programs.
- Developed three-dimensional groundwater flow diagrams for unconfined and confined aquifers.
- Developed Environmental Management Software to manage groundwater monitoring and other landfill monitoring information.
- Performed wetland identification and delineation investigations.
- Performed benthic macroinvertebrate investigations in receiving streams.

**NO**

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

**YES Description and Number of Projects:**

Team member CB&I has prepared cost estimates for municipal and industrial landfill closure projects including City of Moundsville Landfill, Hampshire County Landfill, Rehe Landfill, and Monongalia County Landfill. CB&I associates in the Pittsburgh, Pennsylvania office have also prepared closure cost estimates for approximately 20 landfills in Pennsylvania, West Virginia, New York, and Ohio.

**NO**

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

Gallagher, Patrick E., PE	YEARS OR EXPERIENCE		
	41		
	YEARS OF (type) EXPERIENCE: 41 - Engineering	YEARS OF (type) EXPERIENCE:	YEARS OF (name type) EXPERIENCE:

**Brief Explanation of Responsibilities:**

Mr. Gallagher will be project executive responsible for overall completion of the work.

Mr. Pat Gallagher has more than 40 years of experience with geotechnical engineering in West Virginia. Mr. Gallagher is a recognized geotechnical expert for projects and has experience with a wide array of projects. Mr. Gallagher is intimately familiar with geologic conditions and associated engineering challenges for locales throughout West Virginia.

**EDUCATION (DEGREE, YEAR, SPECIALIZATION)**  
 B.S., 1975, Civil Engineering  
 B.S., 1975, Geology

<b>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:</b> American Society of Civil Engineers Society of Mining Engineers Triangle Fraternity of Engineers, Architects and Scientists International Society of Soil Mechanics and Foundation Engineers American Institute of Professional Geologists	<b>REGISTRATION (Type, Year, State)</b>  Professional Engineer 1983 – West Virginia 1984 – Ohio 1983 – Maryland 1993 – Pennsylvania 2006 – Wyoming  Certified Professional Geological Scientist NC – 2006  Professional Surveyor 1995 – West Virginia
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**13a. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR LANDFILL CLOSURE DESIGN (describe project) (Furnish Complete data but keep to essentials)**

Barton, Daniel J., PE	YEARS OR EXPERIENCE		
	31		
	YEARS OF (type) EXPERIENCE: 31 - Engineering	YEARS OF (type) EXPERIENCE:	YEARS OF (name type) EXPERIENCE:

**Brief Explanation of Responsibilities:**

Mr. Barton will be project manager responsible for management of the project including coordination of teams identified for Investigation/Characterization, Design, and Construction QA/QC.

Mr. Barton has experience includes project management for diverse engineering and environmental projects. His experience includes project management for private and governmental clients. Representative projects include:

- Municipal Water/Sewer System Upgrades, Borough of Seven Springs, Champion, Pennsylvania.
- Site Characterization and Environmental Impact Statement, Barakah Nuclear Power Plant , Abu Dhabi.
- Feasibility Studies for Expansion of Chloride Copper Mine, Kingman, Arizona.
- Site Characterization and Environmental Remediation, Kennametal Manufacturing Plant, Bangalore, India.
- Lincoln Township Water System Expansion, Somerset County, Pennsylvania.

Mr. Barton has project engineering experience for solid waste landfills with project assignments involving liner systems, capping systems, and leachate management systems. His experience has involved a number of facilities including Mostoller Landfill (PA), Monroeville Landfill (PA), Lackawanna Refuse Superfund Site (PA) Moyer Landfill (PA), Kennametal Fallon Landfill (NV).

**EDUCATION (DEGREE, YEAR, SPECIALIZATION)**

M.S., 1985, Civil Engineering

B.S., 1984, Engineering Sciences

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:**

**REGISTRATION (Type, Year, State)**

Professional Engineer  
1997 - Pennsylvania

**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)**

Selfridge, Carl G.	YEARS OF EXPEIRENCE		
	YEARS OF EXPERICENE	YEARS OF EXPEIRENCE (name type):	YEARS OF EXPEIRENCE (name type):
	20 - Engineering		

**Brief Explanation of Responsibilities:**

Mr. Selfridge will be responsible for leading field activities involving site investigations and site characterization.

As Manager of Geotechnical & Drilling Services, Mr. Selfridge annually manages 100+ various geotechnical projects including; education, transportation, commercial development and a variety of public and private clients. This includes the management of field drilling activities, field classification of soil and rock, field and laboratory safety procedures, the assignment of a laboratory testing program, and performing geotechnical evaluations. Engineering evaluations include foundation recommendations, settlement analysis, slope stability analysis, earth pressure coefficients and report preparation.

Mr. Selridge's experience includes serving as project manager for the completion of field activities involving installation of monitoring wells, redevelopment of existing monitoring wells, and abandonment of monitoring wells for a number of WV LCAP sites involving 16 landfills in 15 counties. Mr. Selfridges's experience also includes geotechnical investigation and characterization activities for solid waste landfills.

<b>EDUCATION (Degree, Year, Specialization)</b> B.S., 1996, Civil Engineering, Geotechnical and Structural A.S., 1994, Engineering Science A.A.S., 1991, Mechanical Technology – Design & Drafting	
<b>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</b> Fellow of the American Society of Civil Engineers The Geo-Institute Timber Framers Guild Construction Institute (ASCE)	<b>REGISTRATION (Type, Year, State)</b> Engineering Intern (EI), 1996, New York

<b>13b. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR LANDFILL CLOSURE QA/QC (Furnish complete data but keep to essentials)</b>			
Foreman, Gregory, PE	<b>YEARS OF EXPERIENCE</b>		
	<b>YEARS OF EXPERIENCE</b> 27 - Engineering	<b>YEARS OF EXPERIENCE (name type):</b>	<b>YEARS OR EXPERIENCE (name type):</b>
<b>Brief Explanation of Responsibilities:</b>  <p>Mr. Foreman will be responsible for construction quality assurance and quality control (QA/QC) including certification of associated completion reports. Mr. Foreman will be responsible for design activities for pumping systems associated with the leachate system.</p> <p>Mr. Foreman's experience include serving as project manager and design engineer for a multitude of design projects for municipal, commercial, and private developer clients. His experience includes design and specifications for water and wastewater handling.</p> <p>Mr. Foreman's experience includes certifying engineer for landfill expansion new cell development for the North Mountain landfill. The new cell development involved a liner system involving secondary 60 mil liner, geosynthetic clay liner, double-sided geocomposite, and primary 80 mil liner.</p>			
<b>EDUCATION (Degree, Year, Specialization)</b> B.S., 1989, Civil Engineering Technology A.S., 1989, Drafting & Design A.S., 1989, Mechanical			
<b>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</b>		<b>REGISTRATION (Type, Year, State)</b> Professional Engineer 1999 – West Virginia	
<b>13c. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR HEAVY EARTH WORK CONSTRUCTION PROJECTS (Furnish complete data but keep to essentials)</b>			

Gowarty, James	YEARS OF EXPERIENCE		
	YEARS OF EXPERIENCE 21 – Construction Services	YEARS OF EXPERIENCE (name type)	YEARS OF EXPERIENCE (name type)
<p>Mr. Gowarty will be responsible for supervising field and laboratory activities in support of QA/QC for construction of the landfill cap.</p> <p>As a Construction Services Manager CTL's Morgantown office, Mr. Gowarty is responsible for supervising field and laboratory technicians. He is also responsible for report writing for field and laboratory testing, project management, client contact, estimating, proposals and invoicing. His experience also includes surveying, pre-mining and pre-blast surveys, field supervision of drilling crews, Phase I Environmental Site Assessments and radiation safety officer and corporate safety officer. In addition, Mr. Gowarty is the Construction Materials Testing Supervisor, providing concrete, compaction, and aggregate testing and has over twenty years of experience with Nuclear Gauge Operation. Mr. Gowarty has been CTL's Corporate Safety Officer since the Fall of 2008.</p> <p>Mr. Gowarty experience includes supervision of QA/QC activities for construction of disposal areas including work related to Harrison Power Station, Wetzel County Landfill, Mitchell Mine Refuse Area, McElroy Landfill.</p>			
<p>EDUCATION (Degree, Year, Specialization)</p> <p>B.S., 1990, Civil Engineering Technology</p> <p>A.S., 1990, Mechanical Engineering Technology</p>			
<p>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</p> <p>ASCE</p> <p>ASTM</p>		<p>REGISTRATION (Type, Year, State)</p> <p>Transportation Engineering Technician Level 5 (TRET Level 5)</p> <p>West Virginia DOT Certified Compaction Technician</p> <p>West Virginia DOT Certified Bituminous Concrete Technician</p> <p>West Virginia DOT Certified Portland Cement Concrete Technician</p> <p>West Virginia DOT Certified Aggregate Sampler</p> <p>Bridgemont Level V (TRET)</p> <p>NICET Level III Asphalt &amp; Concrete</p> <p>NICET Level II Soils</p>	

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

OFFICE EQUIPMENT

3 HP Color Plotters  
HP Color Scanner  
Duplicating equipment, copiers, blueprinting, laser printers, etc.  
Facsimile Machine

DESIGN SOFTWARE

**Windows XP & 2007** based operating systems  
**Microsoft Office 2007** is used for word processing, spreadsheet creation, data processing, and presentation creation. Alternative software including Corel Suite is available, if necessary Project designs and specifications are produced in our Computer Aided Drafting and Design (CADD) section using all versions of AutoCAD including Release 2016.

Hydrogeologic Studies

MODFLO  
MODPATH  
SURFER  
CAPZONE  
GWPATH  
SKUGIS  
PHREEQCI  
WATEQ4F  
Groundwater for Windows

Civil Engineering Software  
Civil 3D 2016 (AutoCADD) - 13 Seats  
Profiling  
Civilsoft  
TR-20 & TR-55  
SEDCAD  
HEC 1 & 2  
HEC-RAS  
Arc GIS  
ArcPAD  
Carson Software

Geotechnical

GINT  
STABL6  
SHAFT  
WSPRO  
Various Bridge, Pavement, Pile and Foundation Software

## SURVEY EQUIPMENT

- 2 - Trimble GPS Systems - 3-R8 Receivers & 1- R10 Receiver
- 6 Total Stations ( 1- Robotic)
- NAK Micrometer Level System & Direct Levels
- 4X4 Vehicles, including ATV for off-road use
- 2-Way Radios

## SUBSURFACE INVESTIGATION EQUIPMENT

- 3 - CME 75 Drilling Rigs, 4-Wheel Drive Truck Mounted
- 2 - CME 75 HD Drilling Rigs, 2-Wheel Drive Truck Mounted
- 1 - CME 55 HD Drilling Rig, All-Terrain Mounted
- 1 - CME 45 Drill Rig, 2-Wheel Drive Truck Mounted
- 1 - CME 45 Drill Rig, 2-Wheel Drive Skid Mounted
- 1 Simco 4000 Track Rig
- 4-Wheel Drive Support Vehicles
- Portable barges for water borne drilling (including supply boats w/outboard motors)
- In-situ permeability apparatus
- Single or double ring field infiltrometers for hydraulic conductivity testing
- Down hole temperature gauges
- Color Borehole Camera with 300 foot range
- Ground Penetrating Radar Undisturbed Shelby tube sampling devices
- Standard penetration testing equipment (1", 2", 3" split spoons)
- Settlement probes
- Tripod portable drilling equipment for interior drilling with 7 feet of clearance
- CBR equipment
- Hand Augers
- Solid flight augers - 4" O.D.
- Hollow stem augers - 33", 43", 63" 83" I.D.
- Rotary drilling capability up to 12" O.D.
- Hydro Punch - In-situ groundwater monitoring
- Conventional and wireline coring capabilities - (1", 2", 3", & 4")
- Soil-gas survey equipment
- Pump testing equipment
- Decontamination Equipment - Steam cleaners, drums, generators, etc.
- Electronic Data Loggers



- Field Sampling equipment for soil, water and groundwater
- Nuclear Densometer - Soil Compaction
- PID, FID, CGI and various field monitoring equipment
- Groundwater and Soil Remediation Equipment
- Mobile activated carbon system
- Air and chemical stripping of soils and water

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 RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Harrison Power Station Harrison County, WV	FirstEnergy Corp. 800 Cabin Hill Drive Greensburg, PA 15601	Design, QA/QC, Certification	+\$6M	Phase 5 completed On-going with facility
Tunnel Ridge Mine Refuse Landfill Clearview, WV	Tunnel Ridge, LLC 2596 Battle Run Road Triadelphia, WV, 26059	Quality Control	+\$10M	On-going with operation of facility
TOTAL NUMBER OF PROJECTS:		TOTAL ESTIMATED CONSTRUCTION COSTS:		
# <u>2</u>		\$ <u>+16M</u>		

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 CONSTRUCTION COST:	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
<b>NOT APPLICABLE</b>					

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)
+20 Gas Pads (Pad Design, Geotechnical, Environmental, Permitting) Eastern Ohio	Eclipse Resources State College, PA	\$60,000,000	2014-2016	YES
Contract for Engineering Services (Environmental, Civil Site Design, Geotechnical) Western Maryland	MD Dept. Environment Water Street Frostburg, MD 21532	\$25,000,000	2011-2016	YES
Multiple Projects (Environmental, Survey, Geotechnical, Civil Site Design)	WVU Health Care Morgantown, WV	\$50,000,000	2013-2016	YES
PA Turnpike (Geotechnical Drilling Services)	PA Turnpike Commission Harrisburg, PA		2013-2015	On-going
Antero Midstream (Environmental, Survey, Permitting)	Antero Resources Denver, CO	\$100,000,000	2011-2013	YES

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.

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
University Place/ P3 Student Housing / Morgantown, WV	West Virginia University	\$ 100,000,000	2014	YES	West Virginia Campus Housing (P3 Project w/ WV University) Environmental, Geotechnical, Construction Testing, Site Design
University Park/ P3 Student Housing / Morgantown, WV	West Virginia University	\$ 100,000,000	2014	YES	Paradigm Architecture (P3 Project w/ WV University) Environmental, Geotechnical, Construction Testing
New 179 Interchange MP 135/ Morgantown, WV	WV DOT	\$ 27,000,000	2015	YES	Mountaineer Contractors, AECOM Design Build Geotech, Survey, Materials Testing
Multiple Bridges in WV	WV DOT	+ \$5,000,000	2015	YES	US Bridge, Inc. Material Testing, Survey

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.

CTL Engineering has formulated a strong team to effectively, efficiently complete the closure for the Wheeling Landfill. The team includes CTL Engineering with responsibility as prime for overall project management and execution, site investigations and site characterization, permitting and approvals, and construction quality assurance and quality control, and key subcontractor Chicago Bridge and Iron (CB &I) with responsibility for engineering and design for the capping systems, leachate collection and storage systems, and other design elements for the closure. Refer to the team organization chart and team experience matrix. Key personnel from CTL and CB&I and have prior project experience working together which will allow for seamless integration of project teams and successful project execution.

Key characteristics for the team include:

- The team has strong experience with the LCAP program. CTL's experience includes field activities under the LCAP program for Wheeling Landfill and also for Monongalia Landfill, Clarksburg Landfill, Buckhannon Landfill, Marion County Landfill, Moundsville Landfill, Morgan County Landfill, Capon County Landfill, Grant County Landfill, Central West Virginia Landfill, Dons Disposal Services Landfill, South Charleston Landfill, Montgomery Landfill, Pine Creek / Omar Landfill, Mingo County Landfill, and Midwest Landfill. CBI's experience includes landfill investigative, engineering and design efforts associated with Wheeling Landfill, Monongalia Landfill, Moundsville Landfill, and 15 other CAP Landfills.
- Key technical staff have prior experience with Wheeling Landfill. For CTL, Messrs. Pat Gallagher, Carl Selfridge, and James Gowarty have previously been engaged in CTL's LCAP work at Wheeling Landfill. For CB&I, Mr. Harry Dravecky and Dr. Jim Kilburg have previously been engaged in CB&I's hydrogeological work under the LCAP program for Wheeling Landfill.
- Design Team experience with LCAP program closure. Mr. Harry Dravecky and Dr. Jim Kilburg have experience with design in support of closure under the LCAP program including completion of projects for Rehe Landfill, Hampshire Country Landfill, and Moundsville Landfill.
- Geotechnical Expertise: Mr. Pat Gallagher has more than 40 years of experience with geotechnical engineering in West Virginia. Mr. Gallagher is a recognized geotechnical expert for projects in West Virginia and has experience with a wide array of projects. Mr. Gallagher is intimately familiar with geologic conditions and associated engineering challenges for locales throughout West Virginia.
- Site Proximity & Efficiency: CTL's base of operations for project personnel will be Morgantown, West Virginia and CB&I's base of operations for project personnel will be Pittsburgh, Pennsylvania. Both locations are in relatively close proximity (approximately 70 driving miles) to the Wheeling Landfill site. Senior personnel for CTL and CBI have prior experience working together which will allow for seamless integration of project teams and successful project execution. This proximity and experience will support efficient, cost-effective execution of the work.
- Experience and Resources: CTL has more than 35 years of experience in West Virginia under the leadership of Mr. Pat Gallagher and a long record of successful projects. CTL has drilling and laboratory operations based in Morgantown which will provide necessary completion of site investigation and characterization activities. Proposed project personnel for CTL are based in Morgantown and will be supported, as/if necessary, from the full resources of the CTL organization which includes more than 225 people. CB&I is a nationally-cognized firm with experience with more than 10,000 sites including 700 investigations for landfills. Proposed project personnel for CB&I are based in Pittsburgh with key personnel from CB& and CTL having prior project experience working together. The CB&I team will be supported, as/if necessary, from the resources throughout its organization which includes more than 2,500 people.

20. The foregoing is a statement of facts

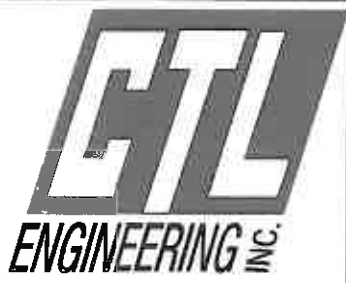
Signature: 

Title: **President**

Printed

Name: **Patrick E. Gallagher**

Date: **November 18, 2016**



**LCCQQ**

**CBI Environmental  
& Infrastructure, Inc.**

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
CONSULTANT QUALIFICATION QUESTIONNAIRE**

<b>PROJECT NAME</b> WVDEP City of Wheeling Landfill Closure Cap		<b>DATE (DAY, MONTH, YEAR)</b> 11/22/2016	<b>FEIN</b> 77-05899932
<b>1. FIRM NAME</b> CB&I Environmental & Infrastructure, Inc., formerly Shaw Environmental, Inc.		<b>2. HOME OFFICE BUSINESS ADDRESS</b> 500 Penn Center Boulevard, Suite 1000, Pittsburgh, PA 15235	<b>3. FORMER FIRM NAME</b> IT Corporation
<b>4. HOME OFFICE TELEPHONE</b> (412)372-7701	<b>5. ESTABLISHED (YEAR)</b> Incorporated as Shaw Environmental, Inc. on April 23, 2002.	<b>6. TYPE OWNERSHIP</b> Individual <input type="checkbox"/> Partnership <input type="checkbox"/> <u>X [Corporation]</u> Joint-Venture <input type="checkbox"/>	<b>6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)</b>  YES <input checked="" type="checkbox"/> [NO]
<b>7. PRIMARY OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. (name particular type) PERSONNEL EACH OFFICE</b> 500 Penn Center Boulevard, Suite 1000 Pittsburgh, PA 15235/ (412)380 - 6222 / James A. Kilburg, Ph.D., P.G. / (See Question 9)			
<b>8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM</b>  Kelly Trice, President Malcolm Jarrell, Vice President Harry Dravecky, P.E., Executive Vice President			<b>8a. NAME, TITLE, &amp; TELEPHONE NUMBER - OTHER PRINCIPALS</b>
<b>9. KEY PERSONNEL (Check mark key personnel below that you have on staff and will work on project)</b>			
336 ADMINISTRATION	6 ECOLOGISTS	0 SANITARY	
3 ARCHITECTS	0 ECONOMISTS	10 SOILS ENGINEERS	
33 BIOLOGISTS	5 ELECTRICAL ENGINEERS	0 SPECIFICATION WRITERS	
30 CADD OPERATORS	98 ENVIRONMENTALISTS	(TYPICALL PREPARED BY ENGINEERS	
16 CHEMICAL ENGINEERS	26 ESTIMATORS	5 SURVEYORS	
59 CIVIL ENGINEERS	77 GEOLOGISTS	1753 OTHERS	
106 CONSTRUCTION INSPECTORS	0 HISTORIANS		
NA DESIGNERS (INCLUDED WITH CADD OPERATORS	7 HYDROGEOLOGISTS	2580 Total Employees	
0 DRAFTSMAN - NOW TITLED CADD OPERATORS	0 LANEDSCAPE ARCHITECTS		
	19 MECHANICAL ENGINEERS		
	0 MINING ENGINEERS		
	0 PHOTOGRAMMATRISTS		
	0 PLANNERS URBAN/REGIONAL		

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". This project will be a teaming project between CTL Engineering, Inc. (CTL) of Morgantown, West Virginia and CB&I Environmental & Infrastructure, Inc. (CB&I) of Pittsburgh, Pennsylvania. CTL will be the Prime Consultant and will perform the site characterization and construction quality assurance phase of this project and CB&I be a sub-consultant to CTL and will prepare the landfill cap design, storm water management, and leachate management phase of this project.

10a. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? N/A  YES  NO

**11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED.**

Attach "DEP" Consultant Confidential Qualification Questionnaire" for each.

NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE
Based on the scope of work that will be performed, CB&I does not anticipate using any subconsultants for this project.	Not applicable.	<input type="checkbox"/> Yes <input type="checkbox"/> No

**12.A. Is your firm experienced in (Solid Waste Landfill Closure Design)?**

YES  Description and Number of Projects:

CB&I (formerly Shaw Environmental, Inc.) performed site characterization; design of landfill cap system, including grading; storm water management design; and leachate management design; and construction quality assurance and quality control during closure activities at four LCAP landfills in West Virginia, including City of Moundsville Landfill, Hampshire County Landfill, Rehe Landfill, and Monongalia County Landfill. CB&I also has nationwide experience in solid waste landfill construction and closure design at more than 200 municipal waste landfills nationwide.



B. Is your firm experienced in Solid Waste landfill site characterization assessment and evaluation?

**YES**√ Description and Number of Projects:

CB&I (formerly Shaw Environmental, Inc.) has performed site characterization at four LCAP landfills in West Virginia as part of the closure design. These landfills include City of Moundsville Landfill, Hampshire County Landfill, Rehe Landfill, and Monongalia County Landfill. CB&I has experience in solid waste landfill site characterization assessment at more than 200 municipal waste landfills nationwide.

C. Is your firm experienced in landfill closure construction inspection?

**YES**√ Description and Number of Projects:

CB&I (formerly Shaw Environmental, Inc.) performed landfill closure construction inspections at four LCAP landfills in West Virginia as part of the closure design. These landfills include City of Moundsville Landfill, Hampshire County Landfill, Rehe Landfill, and Monongalia County Landfill. CB&I has also performed construction and closure inspections at more than 200 municipal waste landfills nationwide.

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

**YES** ✓ Description and Number of Projects:

CB&I (formerly Shaw Environmental, Inc.) has utilized the services of aerial photography companies to develop topographic contour maps at four LCAP landfills in West Virginia as part of the closure design. These landfills include City of Moundsville Landfill, Hampshire County Landfill, Rehe Landfill, and Monongalia County Landfill. CB&I has also obtained topographic maps for more than 10 municipal waste landfills in Pennsylvania and for other solid waste disposal facilities, including residual waste landfills and coal combustion residuals landfills.

E. Is your firm experienced in evaluating groundwater contamination, such as may be associated with landfills?

**YES** ✓ Description and Number of Projects:

CB&I (formerly Shaw Environmental, Inc.) has completed over 10,000 site investigations and assessments nationwide including over 700 hydrogeological investigations at municipal, residual, and hazardous waste landfills. Landfill-related hydrogeological investigations performed by CB&I were for permit applications to construct and operate landfills, landfill closures, and assessment of groundwater for potential impacts from disposal facilities. The following geological and hydrogeological-related projects have been and continue to be performed by Shaw:

- Reviewed and evaluated existing geological and hydrogeological information related to disposal facilities (including hydrogeological reports, geological maps and reports, topographic and terrain maps, water quality information, climatological information, and water well and spring records).
- Performed field reconnaissance work to identify and delineate factors that may affect the occurrence and distribution of groundwater, including taking inventories of existing water wells, mine drainages, and springs to determine their characteristics and water quality.
- Determined hydrogeological settings of groundwater monitoring well systems and determined screened intervals of existing wells and geological intervals in which new groundwater monitoring wells should be screened.
- Delineated geological conditions, including the identification of bedrock units, structural attitude of bedrock units, folding, faulting, and joints (fractures).
- Installed hundreds of groundwater monitoring wells and piezometers and obtained surveyed locations and elevations of these wells and piezometers.
- Developed groundwater contour maps, structure contour maps, geologic maps, and lithologic maps using site-specific information and published geological information.
- Identified and delineated unconfined and confined aquifers.
- Determined directions and rates of groundwater movement.
- Delineated aquifer recharge and discharge areas.
- Performed aquifer tests (pumping and slug tests).
- Determined aquifer characteristics (hydraulic conductivity, transmissivity, permeability, specific yield, storage coefficient, groundwater velocity, etc.).
- Prepared and implemented hydrogeological work plans.
- Prepared and implemented sampling and analysis plans.
- Sampled groundwater monitoring wells, springs, seeps, mine discharges, and streams.
- Reviewed analytical results for groundwater samples (as well as spring, seep, and stream samples) and performed statistical analyses to evaluate potential impacts.
- Prepared groundwater models using commercial groundwater modeling programs.
- Developed three-dimensional groundwater flow diagrams for unconfined and confined aquifers.
- Developed Environmental Management Software to manage groundwater monitoring and other landfill monitoring information.

- Performed wetland identification and delineation investigations.
- Performed benthic macroinvertebrate investigations in receiving streams.

Number of Projects: CB&I has performed more than 700 hydrogeological investigations at landfills.

F. Is your firm experienced in Landfill Closure cost estimating?

**YES** ✓ Description and Number of Projects:

CB&I (formerly Shaw Environmental, Inc.) has prepared cost estimates for municipal and industrial landfill closure project, including the four WVDEP LCAP landfills referenced in this Questionnaire. CB&I associates in the Pittsburgh, Pennsylvania office have prepared closure cost estimates for approximately 20 landfills in Pennsylvania, West Virginia, New York, and Ohio.

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

NAME & TITLE	YEARS OF EXPERIENCE		
	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:
<b>Dravecky, Harry, PE Executive Vice President</b>	31 – Engineering		

Brief Explanation of Responsibilities: Mr. Dravecky has served as engineer of record, project manager, construction manager, and/or design engineer during all aspects of landfill-related work throughout his career. Mr. Dravecky is a certified professional engineer in West Virginia and has worked with the WVDEP's LCAP program since 1997. He has also represented his clients in civil engineering and landfill-related arbitration support and expert witness testimony. Specific landfill-related projects conducted by Mr. Dravecky throughout his career include:

- Hampshire County Landfill – West Virginia – investigation/permitting/design
- Rehe Landfill – West Virginia – investigation/permitting/design/construction oversight
- Monongalia County Landfill – West Virginia - investigation/permitting/design/construction oversight
- Evergreen Landfill – Pennsylvania – permitting/design/construction oversight
- Gallia County Landfill – Ohio – permitting/design
- Frey Farm Landfill – Pennsylvania – field investigation/permitting/design
- Appleton Papers Residual Waste Landfill – Pennsylvania - design
- Industrial waste lagoon closures – West Virginia - design
- Fresh Kills Landfill – New York - design
- Model City Landfill – New York - design
- Imperial Landfill – Pennsylvania – design/permitting/construction oversight

**EDUCATION (Degree, Year, Specialization)**

B.S., 1984, Agricultural Engineering (with soil and water conservation specialization)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	Professional Engineer 1999 – West Virginia 1991 – Pennsylvania 2000 – Ohio

**13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR INVESTIGATION & EVALUATION OF HYDROGEOLOGICAL CONDITIONS FOR 29 LCAP LANDFILLS.**  
(Furnish complete data but keep to essentials)

NAME & TITLE	YEARS OF EXPERIENCE		
<b>Kilburg, James, A., Ph.D., PG</b> Primary Program Contact / Client Program Manager	YEARS OF (type) EXPERIENCE: 38 – Engineering Geology	YEARS OF (type) EXPERIENCE: 30 – Landfill design, permitting, operation and closure	YEARS OF (type) EXPERIENCE: 38 – Geology and hydrogeology

**Brief Explanation of Responsibilities:**  
 Dr. Kilburg is an engineering geologist with 38 years of experience in engineering geology (geotechnical engineering), hydrogeology, waste management, and regulatory compliance. He has considerable experience in waste management projects, including design, permitting, construction, operation, and closure of municipal, residual, and hazardous waste disposal facilities. He also has experience in other waste management issues such as soil borrow area studies and soil demonstrations, groundwater and landfill gas monitoring, mitigation of groundwater contamination and landfill gas migration, Title V permitting for landfills and evaluations, and wetlands mitigation related to landfills. Dr. Kilburg has performed a variety of services for the municipal, residual, and hazardous waste management industry, including preparation of permit applications, quality assurance for construction of landfill cells and for closure of landfills, groundwater assessments, groundwater and landfill gas monitoring, preparation of plans related to landfills such as groundwater assessment and monitoring plans and correction action plans for landfill gas migration, mine subsidence investigations at landfill sites, evaluation of landfills for applicability to Title V permitting requirements, preparation of Title V permit applications, and preparation of National Pollutant Discharge Elimination System permit applications for general storm water discharges and leachate treatment. Dr. Kilburg was involved in the closure design and construction quality assurance for the Rehe, Hampshire County, and Moundsville Landfills. Dr. Kilburg was also the lead investigator evaluating the groundwater monitoring well systems at 16 LCAP landfill.

**EDUCATION (Degree, Year, Specialization)**  
 B.S., 1970, Geology  
 M.S., 1972 Geology  
 Ph.D., 1979 Geology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Geological Society of America Association of Engineering Geologists American Society of Highway Engineers Pittsburgh Geological Society	Professional Geologist Pennsylvania – 1993 Arkansas – 1994 Wyoming – 1992

**13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR INVESTIGATION & EVALUATION OF HYDROGEOLOGICAL CONDITIONS FOR 29 LCAP LANDFILLS.**  
(Furnish complete data but keep to essentials)

NAME & TITLE	YEARS OF EXPERIENCE		
	<b>Smith, Bruce, E., PG Project Manager</b>	YEARS OF (type) EXPERIENCE: 28 - Hydrogeologist	YEARS OF (type) EXPERIENCE: 28 - Geologist

**Brief Explanation of Responsibilities:**

Managed and designed investigation plans and conducted the fieldwork associated with geologic and hydrogeologic evaluations at landfill sites in Pennsylvania, Ohio, and Kansas. Work included drilling supervision utilizing a wide array of drilling techniques including rock coring, air and mud rotary, hollow stem augering, and split barrel sampling and direct-push sample collection. Also, these projects included design and implementation of multiple aquifer characterization tests using single-well and multiple-well test designs, collection of soil and groundwater data, and preparation of investigation plans and reports. In addition, Mr. Smith is currently providing hydrogeologic management services for municipal waste facilities in Mississippi, Tennessee, and Georgia, which requires the review of historical data, evaluation of data gaps, and preparation of plans to obtain data to fill those gaps. He has also conducted hydrogeologic, geologic, and general facility siting evaluations of "Greenfield" sites as well as closed sites and sites that were developed prior to the requirements for landfill liner systems. He has managed quality assurance/quality control activities for the construction of a captive landfill and cap for a large low-level radiation site in Colorado.

In addition to specific landfill experience, Mr. Smith has managed, designed, supervised, and implemented hydrogeologic assessment plans at numerous industrial facilities in the United States, mostly concentrated in the midwest and mid-Atlantic states. He has evaluated the effects of acid mine drainage (AMD) on watersheds in West Virginia and Pennsylvania and worked on the development of passive remediation of AMD sites.

Mr. Smith has conducted numerous hydrogeologic assessments of potential public water supplies specifically associated with spring water and boreholes for the bottled water industry. Those bottled water hydrogeologic investigations ranged from data review of existing developed spring water sources, to conducting watershed analyses of undeveloped springs, which included sampling, borehole installation, and hydrogeologic characterization testing of the water sources.

**EDUCATION (Degree, Year, Specialization)**

M.S., Geology (Hydrogeology Emphasis), 1986

B.S., Geology, 1983

A.S., Wildlife Technology, 1980

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

Pennsylvania Council of Professional Geologists

**REGISTRATION (Type, Year, State)**

Professional Geologist  
Pennsylvania - 1994

**13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR INVESTIGATION & EVALUATION OF HYDROGEOLOGICAL CONDITIONS FOR 29 LCAP LANDFILLS.**  
(Furnish complete data but keep to essentials)

NAME & TITLE	YEARS OF EXPERIENCE		
	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:
<b>Brooker, John A.</b> <b>Biologist/Environmentalist</b>	20 - Biologist	15 - Aquatic Toxicologist	20 Benthic Macroinvertebrate Investigations
<p><b>Brief Explanation of Responsibilities:</b> Mr. Brooker is a Biologist with CB&amp;I and through his work history has conducted water column and sediment toxicity testing. He has collected and analyzed surface water samples for metals and organic compounds, and he has monitored freshwater fish and macroinvertebrate populations. In addition, Mr. Brooker has conducted environmental risk assessments, installed groundwater monitoring wells, and monitored groundwater levels using pressure transducers and data loggers.</p>			
<p><b>EDUCATION (Degree, Year, Specialization)</b> M.S., 2000, Biology/Aquatic Toxicity B.A., 1995, Biology and Environmental Studies</p>			
<p><b>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</b> Society of Environmental Toxicology and Chemistry</p>		<p><b>REGISTRATION (Type, Year, State)</b></p>	

**13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR INVESTIGATION & EVALUATION OF HYDROGEOLOGICAL CONDITIONS FOR 29 LCAP LANDFILLS.**  
(Furnish complete data but keep to essentials)

NAME & TITLE	YEARS OF EXPERIENCE		
	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:
<b>Lopez, Laurel C., P.E.</b> <b>Civil Engineer</b>	22 - Civil Engineering		
<p><b>Brief Explanation of Responsibilities:</b> Ms. Lopez has 19 year of experience in the areas of geotechnical engineering, environmental, solid waste, and civil engineering. She has both design and regulatory experience related to municipal waste disposal facilities. Regulatory experience which Ms. Lopez possesses includes permitting, reporting, construction certification, compliance review, related to projects regulated by state and local agencies. Ms. Lopez has worked on the design, permitting, construction quality assurance and quality control, and closure for numerous municipal waste landfills and residual waste storage and disposal impoundments. She also has experience with landfill gas and leachate management. Ms. Lopez also has experience in geotechnical engineering for site development, foundation design, and slope stability evaluations.</p>			
<p><b>EDUCATION (Degree, Year, Specialization)</b> M.S., 1997, Civil and Environmental Engineering B.S., 1994, Civil Engineering</p>			
<p><b>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</b> None</p>		<p><b>REGISTRATION (Type, Year, State)</b> Professional Engineer, 2001, Pennsylvania</p>	



14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE THE CITY OF WHEELING LANDFILL CLOSURE PROJECT

See Exhibit 1 for a list of computer software available for use on this project. The following office equipment is available for use in CB&I's Pittsburgh, Pennsylvania office:

- All CB&I associates who will be involved in this project have laptop computers that use Microsoft Windows (Word, Excel, PowerPoint, etc.)
- Five computer-assisted drafting and design (CADD) stations
- Scanners, digitizers, high speed plotters
- Fully equipped reprographics department

CB&I maintains the following field equipment at the Pittsburgh, Pennsylvania office:

- 5-Full size, extended cab 4x4 pickup trucks with tool boxes
- 3-Oil/water interface probes
- 2-Water level probes
- 2-Photoionization detectors
- 2-LEL/O<sub>2</sub> meters
- 1-GEM 500 landfill gas monitor
- 2-Spectra-Physics Laserplanes with tripods and rods
- 1-Pentax PTS III 5-second Total Station with data recorder
- An assortment of Low Value Equipment (LVE) is also available at the Pittsburgh location. This equipment is defined by CB&I as common multi-use small hand or power tools and low dollar (<\$1,500) equipment used to support project operations. Examples include generators, saws, pumps, heaters, shop vacuums, ladders, wheel barrows, shovels, etc.
- Four portable double ring infiltrometers for testing soil infiltration rates.
- Various expendable inventory items are also stored at the Pittsburgh office. These items are defined by CB&I as items which are warehoused in large quantities, have a high turnover rate, are one-time use items, and are common to CB&I projects. Examples include oil-sorbent boom and pads, personal protective equipment, drums, sample jars, tape, visqueen, etc.
- In the event there is a need for equipment not currently located in the Pittsburgh office, CB&I's regional Equipment Coordinator will fill the project need with company-owned equipment from CB&I's Findlay, Ohio equipment yard or through local or national rental agreements (Procedure No. EQ001). The most appropriate equipment will be selected based on availability to meet the project schedule, performance, and cost.

**Exhibit 1- Computer Software Available in CB&I's Pittsburgh Office**

<b>Name of Software</b>	<b>Developer</b>	<b>Application</b>
<b>Category: General</b>		
Word 2013	Microsoft	Word Processing
Excel 2013	Microsoft	Data Management
PowerPoint 2013	Microsoft	Presentations and Graphics
ArcView 3.1	ESRI	GIS
HELP V.4	EPA	Water Balance Analysis
MathCAD 6	MathSoft	General Technical Calculation
MathCAD 7	MathSoft	General Technical Calculation
RACES	EPA	Remedial Action Costing
VISIO	Shapeware	Organization Chart, simple graphic and PFD
CCBs	NIBC	Specifications and other
gINT 5	Geotechnical Computer Applications	Soil Boring/Monitoring Well Construction Logs
<b>Category: Groundwater</b>		
GMS4.0	Scientific Software	Pre & Post GW Modeling
TWODAN	Scientific Software	2-D Analytical Flow Model
WHI Unsat Suite Plus includes: HELP, PESTAN, SESOIL, VS2DT, VLEACH	Scientific Software	2-D Analytical Flow Model
WinFLOW 2.0	Env. Science Inc.	2-D Analytical Flow Model
WinTrans 1.0	Env. Science Inc.	2-D Analytical Transport Model
AQUA Chem	Scientific Software	GeoChemical Visualization
Aqtesolv 4.5	Geraghty & Miller	Aquifer Test Analyses
Surfer 8.0	Scientific Software	Data Mapping
Flowpath	Scientific Software	GW Modeling
Kriging	Oxford University Press	Statistical Analysis of Data
Lahel Fortran 90 Compiler	Scientific Software	Fortran Program Compiling
Modflow T	Scientific Software	GW Modeling
Modflow Win 32	Scientific Software	GW Modeling
MT3D 96	Scientific Software	GW Modeling
Noesys 1.0	Fortner Research	2D/3D Graphic Presentation
Swift/486	Geotrans	GW Modeling
G.W.Vistas	Scientific Software	GW Modeling
<b>Category: Risk Assessment</b>		
@Risk for Lotus	Palisade Corp	Probability Analysis
3D Analysis	ESRI	GIS
Cameo		Air Model/Emergency Response
Ecosar	EPA	Ecotoxicity
Enviro Browser	Georef Ltd	Physico-chemical data
Grateful Med	National Library of Medicine	Toxicity data base searches
Risk 2000	Shaw	Risk Management
SigmaPlot 5.0	SPSS	Statistical Analysis

**Exhibit 1- Computer Software Available in CB&I's Pittsburgh Office**

SigmaSTAT 2.0	SPSS	Statistical Analysis
Spatial Analyst	ESRI	GIS
Statview	Abacus, Inc.	Statistics
SYSTAT 8.0	SPSS	Statistical Analysis
RAGS D	Shaw	Report Generator
<b>Category: Surface Hydrology and Hydraulics</b>		
H7221	USACE	Culvert Sizing and Inlet Design
H7780	USACE	Wave Runup and Wind Setup
HEC-RAS	Haestad	Flood Hydrograph Package
HydroCAD 10	HydroCAD Software Solutions	Storm Water Modeling
Various Programs in a CD (TR55, TR20, HEC1, HEC2, etc.)	Government	Surface Hydrology and Hydraulics
RUSLE	USDA-ARS	Revised Universal Soil Loss Equation
<b>Category: Drafting</b>		
AutoCAD 2013	AutoDesk	Drawing and Graphic Applications
AutoCAD LT 2013	AutoDesk	Simplified version of AutoCAD for Drafting
AutoCAD Map R5	AutoDesk	AutoCAD 2002 with Map
Land Development	AutoDesk	AutoCAD 2002 with DTM Module
Civil Design	AutoDesk	Cogo Module for AutoCad 2002
Survey 3	AutoDesk	Survey Module for AutoCAD 2002
CAD Overlay 2013	AutoDesk	Raster Images
Corel Draw (8)	Corel	Graphic Applications
Micro station SE	Bentley Systems	Drawing and Graphic Applications
SurvCADD	Carlson	DTM, Cogo, and Section Modules for 2002
<b>Category: Chemical/Process</b>		
BFSS	EPA	Bioremediation Field Application
Fluid File	DOW	Heat Transfers Fluids
GENIE	AlliedSignal	Refrigerant Thermo-dynamics
RREL	EPA	Treatability
SWAMI	EPA	Waste Minimization
VISIT	EPA	Treatment Technology
<b>Category: Civil/Geotechnical/Structural</b>		
Florida Pier	Florida DOT	Bridge Pier and Piling Analysis
GEOPRO		Geotechnical Programs
GSTABL7 (v1.15) w/STEDWIN (v2.64)	Gregory Geotechnical Software	Slope Stability
H7010	USACE	Riprap Requirements
H7011	USACE	Riprap Design
H7780	USACE	Wave Runup and Wind Setup
I0010	USACE	Shallow Foundation Settlement on Sand and Clay
I0017(CBEAR)	USACE	Shallow Foundation Bearing Capacity
I0019(CSETT)	USACE	Shallow Foundation Settlement on Clay

**Exhibit 1- Computer Software Available in CB&I's Pittsburgh Office**

I0025(DGSLOPE)	USACE	Slope Stability
I0030(CSANDSET)	USACE	Shallow Foundation Settlement on Sand
PCAMATS 5.2	Portland Cement Assn.	Mat Foundation Structural
PCSTABL5 (STED6)	Purdue University	Slope Stability Analysis
Pier Plot	Florida DOT	Post-Processor for Florida Pier
Piergen	Florida DOT	Preprocessor for Florida Pier
SPW911 v2.00	Pile Buck	The Analysis of Sheet Piling and Retaining Wall Design
STAAD.Pro 2002	Research Engineers, Inc.	Structural Design and Analysis
Survey Link 4.0		Survey Data Transfer
X0014 (3DPILE)	USACE	3-Dimension Pile Analysis
X0024 (CORTCUL)	USACE	Design or investigation of orthogonal culverts
X0026 (CANWAL)	USACE	Cantilever Retaining Wall Design/Analysis
X0027 (ANCWAL)	USACE	Anchored Bulkhead Design
X0028 (CELLRK)	USACE	Analysis of Cofferdams or Mooring in Rock
X0029 (CELLSL)	USACE	Cellular Sheetpile Structure
X0030 (CFRAME)	USACE	Analysis of Plane Frame Structures
X0031(CWALSHT)	USACE	Sheet Piling Design and Analysis
X0034 (LMVDPILE)	USACE	Pile Group Analysis
X0035 (PILESTF)	USACE	Pilehead Stiffness Matrix (Pre-processor for X0034)
X0036 (FDRAW)	USACE	Interactive Graphic (Post-processor for X0034)
X0040 (CELL)	USACE	Design Analysis of Sheetpile Cells
X0050 (CBEAMC)	USACE	Analysis of Beam-column structures with nonlinear supports
X0051(CTGA)	USACE	Design/analysis of three-girder tainter gates
X0053(CTWDA)	USACE	T-Wall Design Analysis
X0060 (CAXPILE)	USACE	Analysis of Axially Loaded Pile
X0061 (CGSI)	USACE	Strength analysis of nonhydraulic concrete structural elements
X0070 (CWALSSI)	USACE	Winkler soil-structure interaction analysis of sheet-pile walls
X0075 (CSLIDE)	USACE	Sliding stability of concrete structures
X0080 (CPGA)	USACE	Analysis of Pile Group
X0082 (CPGS)	USACE	Analysis of Single Pile
X0088 (CPGC)	USACE	Concrete Pile Group
X0095 (CUFRBC)	USACE	Investigation/Design of U-Frame structures
X0097 (CCHAN)	USACE	Structural Design of Rectangular Channel
X0098 (CBASIN)	USACE	Structural Design of Stilling Basin
X0153 (CTWALL)	USACE	Retaining and Flood Wall Analysis
X8100 (2DSAD)	USACE	Three-Dimensional Stability Analysis/ Design
X8201 (GPOSTFEM)	USACE	Finite Element Method Post Processor
X8202 (CSEEP)	USACE	Applications of the Finite Element Seepage

**Exhibit 1- Computer Software Available in CB&I's Pittsburgh Office**

Analysis

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

<b>PROJECT NAME, TYPE AND LOCATION</b>	<b>NAME AND ADDRESS OF OWNER</b>	<b>NATURE OF YOUR FIRM'S RESPONSIBILITY</b>	<b>ESTIMATED CONSTRUCTION COST</b>	<b>PERCENT COMPLETE</b>
<b>15a. Fresh Kills Landfill</b> Comprehensive Hydrogeological Investigation Staten Island, NY	City of New York Department of Sanitation Bureau of Resource Recovery & Waste Disposal Planning 280 Broadway New York, NY 10007	Ongoing engineering and environmental consulting services that include closure planning and design, comprehensive hydrogeological and surface water and sediment investigations; control of leachate through remedial design and construction of a leachate collection and containment system and leachate treatment plant; long-term environmental monitoring of groundwater, surface water, and sediment; and performance of a feasibility study and design for footprint reduction through reclamation	\$500,000 - \$1,000,000/year	Ongoing
<b>15b. Westmoreland Sanitary Landfill</b> Belle Vernon, Pennsylvania	Dale Burns 724-366-7532	Landfill gas monitoring, reporting, and compliance. Design of and construction oversight for landfill gas monitoring systems.	\$100,000/year	Ongoing
<b>15c. Appvion, Inc.</b> Roaring Spring, Pennsylvania	Tamela Greely 814-224-2131	Ongoing quarterly groundwater evaluations and reporting for Closed Landfill No. 1 and Lagoons 2 and 3 since 1998.	\$10,000/year	Ongoing
<b>15d. NRG Energy</b> Conemaugh Generating Station New Florence, Pennsylvania	Jim Brunson 724-235-4596	Evaluated the clay liner systems beneath four ash storage impoundments to determine compliance thickness and permeability requirements of the Coal Combustion Residuals Rule.	\$25,000	Recently completed
<b>15e. Waste Management, Inc.</b>	Various Waste Management Facilities	Semiannual Title V reporting for 11 municipal waste landfills in Pennsylvania	\$250,000/year	Ongoing
<b>TOTAL NUMBER OF PROJECTS:</b>  # <u>5</u>		<b>TOTAL ESTIMATED CONSTRUCTION COSTS:</b>  \$ <u>Construction Costs Vary By Year</u>		

**16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONTRACTOR TO OTHERS RELATING TO LANDFILL CLOSURE AND CONSTRUCTION:**

PROJECT NAME, TYPE, AND LOCATION	NATURE OF FIRM'S RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST:	
				ENTIRE PROJECT	YOUR FIRM'S RESPONSIBILITY
None					

With regard to Questionnaire item, CB&I is not currently a sub-contractor on any landfill closure projects.

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**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)
City of Moundsville, Landfill Closure, Moundsville, WV	WVDEP, Division of Land Restoration, 601 57 <sup>th</sup> Street, S.E. Charleston, WV 25304-2345	\$2,000,000	2013	Yes
Indian River Power Burton Island Operating Unit 2 Remediation and Closure, Dagsboro, Delaware	NRG Indian River, LLC, 29416 Power Plant Road, Dagsboro, Delaware, 19939	\$700,000	2016	Yes

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.

CB&I is a full service environmental consulting firm employing more than 2,500 employees in its consulting group that is part of a 55,000-person company. CB&I provides consulting services to the waste industry, power industry, oil and gas industry and a variety of other industries. The engineering capabilities of CB&I include civil, geotechnical, chemical, mechanical, structural, and electrical with the Pittsburgh Office having strong civil and geotechnical engineering capabilities. CB&I also has strong geological and environmental capabilities in the Pittsburgh office with experience in West Virginia, Pennsylvania, Ohio, Maryland, New York, and Delaware. CB&I is familiar with West Virginia's LCAP program having completed the site characterization, design, permitting, and construction quality assurance and quality control for four LCAP landfills, including Monongalia County, Rehe, Hampshire County, and City of Moundsville landfills. CB&I has also assisted WVDEP with other elements of the LCAP program, including leachate management at several landfills and an evaluation of the groundwater monitoring well systems at 16 LCAP landfills. CB&I possess the knowledge, experience, and capability to provide the design of the City of Wheeling Landfill closure.

20. The foregoing is a statement of facts

Signature: James A. Kilburg

Title: Client Program Manager

Printed Name: James A. Kilburg, Ph.D., P.G.

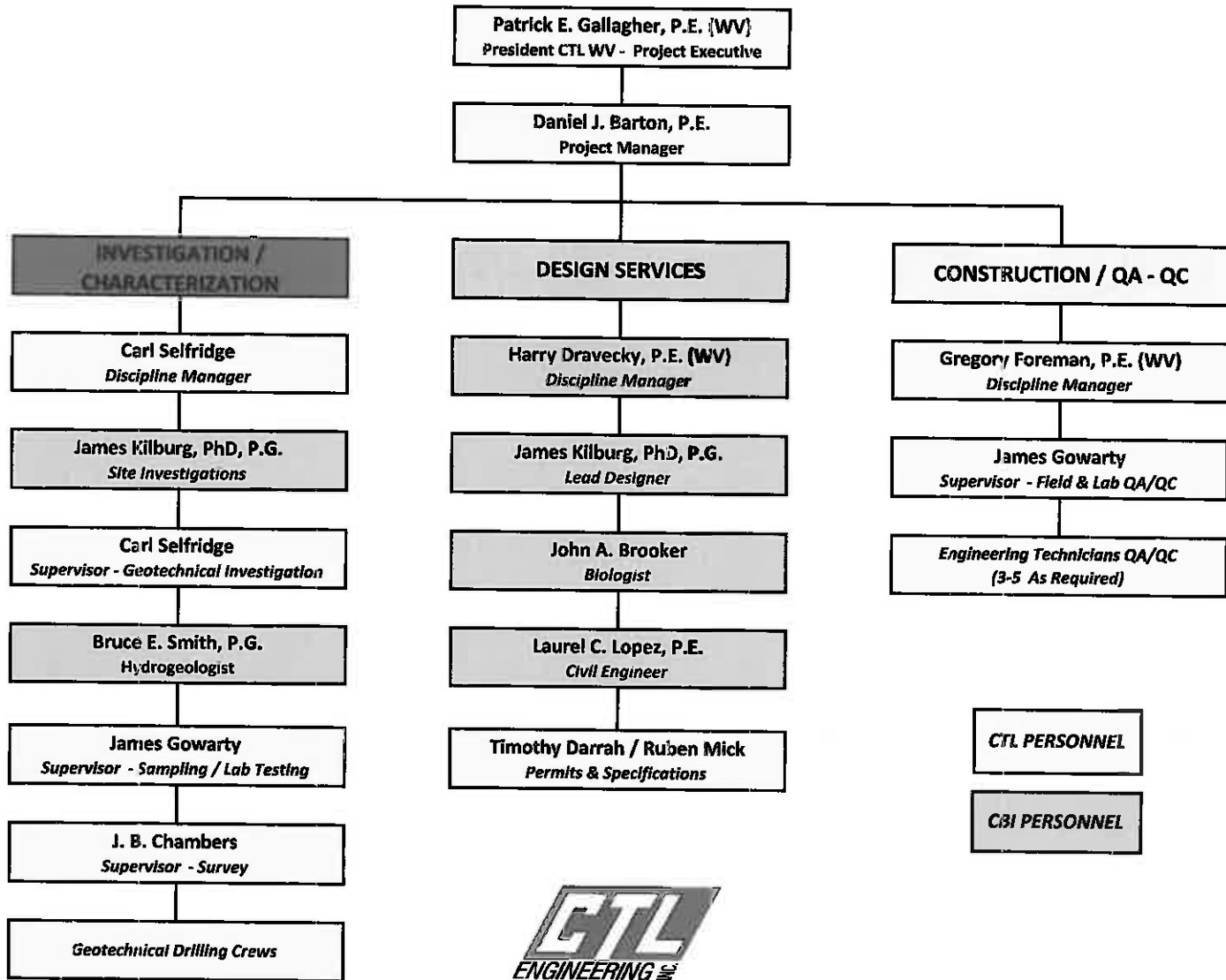
Date: November 18, 2016

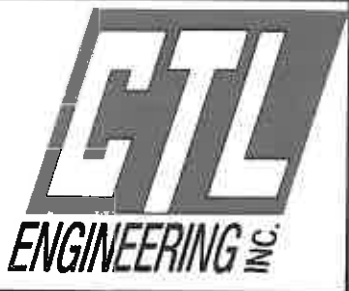




# Team Organization

**CTL ENGINEERING OF WEST VIRGINIA, INC.  
PROJECT ORGANIZATIONAL CHART**





## **Team Project Experience**

## CTL TEAM LANDFILL & DISPOSAL AREA PROJECT EXPERIENCE

	<b>CTL PROJECTS</b>
	<b>CBI PROJECTS</b>

Facility/Location	SITE CHARACTERIZATION	CLOSURE DESIGN / LECHATE MANAGEMENT	CONSTRUCTION QA/QC
AK Steel Ambridge, Pennsylvania			
American Centrifuge Plant Pikeston, OH			
Appleton Papers Roaring Spring, PA			
Exxon Mobile Corporation Terminals in Boomer, Huntington, Charleston, Westover, and Parkersburg, West Virginia			
Fresh Kills Landfill Staten Island, NY			
Gavin Power Plant Landfill Cheshire, OH			
Hampshire County Landfill Hampshire County, WV			
Harrison Power Station Harrison County, WV			
Heizer Creek Landfill Poca, WV			
Leachate Collection System Maintenance 18 WV LCAP Landfills			
Pleasants Station Landfill Pleasants County, WV			
Mitchell Refuse Landfill Moundsville, WV			
Monongalia Landfill Monongalia County, WV			
Moundsville Landfill Moundsville, WV			
Nine Landfill Sites Eastern US			
North Mountain Landfill Bekeley, WV			
Owens Corning Landfill Licking County, OH			
Pennzoil-Quaker State Company Newell, WV			
Rahe Landfill Preston County, WV			
St. Mary's Refinery St. Mary's, WV			
Tunnel Ridge Mine Refuse Landfill Clearview, WV			
Wetzel County Landfill Wetzel County, WV			
Wheeling-Pittsburgh Steel Corp. Follansbee, WV			
WVDEP LCAP Program Support 16 Landfills throughout WV			

