

**SUBMITTAL FOR:**

**ORANGE AND ROCKLAND UTILITIES, INC.**

**PROJECT NO. B0043021**

**PORT JERVIS FORMER MGP SITE**

**SOURCE AREA EXCAVATION**

**PORT JERVIS, NY**

**OPERATIONS PLAN**

**SUBMITTAL NO. P-01010-003-E**

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## 1.0 Operations Plan

*In accordance with the Contract Documents for the **Building Demolition and Source Area Excavation, Port Jervis Former MGP Site, D.A. Collins (DAC)** provides below discussion on definable features of work that it believes are key components to complete the project.*

### 1.1 Mobilization

Site mobilization activities will occur during the first two weeks of the project, and will include the following tasks.

- Mobilization of personnel and equipment.
- Establishment of temporary offices and facilities in the existing O&R office building.
- Pre-construction structural inspections of O&R offices and neighboring buildings, to be performed by C.T. Male Associates during the week of mobilization.
- Storm sewer video inspection.
- Pre-construction land survey.

### 1.2 Key On-Site Personnel

The following is a list of personnel intended to be on-site full time or periodically throughout the duration of the project. DAC will notify the Owner of any changes that may occur to key personnel as required. Resumes can be found in Exhibit 2 of this document.

Site Superintendent	Dean Blodgett	Full Time
Health & Safety Officer	Keith Chadwick	Full Time
Project Director	David MacDougall	Periodic
Project Manager	Laura Stone	Periodic
Project Foreman	Fred Echtner	Full Time

Additional resumes for surveyors, structural inspectors, and vibration technicians will be submitted under separate cover as they become available.

### 1.3 Site Preparation

Site preparation work is expected to require 3-4 weeks and includes the following tasks:

- Installation of temporary power sufficient for the temporary facilities, TIGG ventilation units, temporary water treatment, and related project components. Note that the 3-phase power drop will occur later in the project sequence after the power drop has been coordinated between O&R and the electrician.
- Setup of temporary traffic controls and signage.
- Installation of erosion controls including hay bales, inlet protection, and stabilized construction entrances where required.
- Removal of the existing fencing, rails, bollards, and related features as required.

- Installation of the temporary security fence. Temporary fence will primarily consist of free standing panel fence and rolling gates. Where Jersey barrier fencing is required, the fence shall be bolted to the top of the barrier rather than set into the barrier as shown on the Detail.
- Utility clearance via Dig Safe, followed by utility locations and removals. See Section 1.5.
- Construction of the decontamination pad, material staging areas, and water treatment staging area. These areas will be installed in the general vicinities shown on the drawings with minor adjustments to footprint dimensions.
- Removal of trees and brush, primarily adjacent to the Pike Street apartment.
- Sawcut of asphalt along the proposed limits of asphalt removal.
- Delivery and erection of DAC's silo for the delivery of LKD via bulk pneumatic tanker.

#### **1.4 Erosion & Sedimentation Control Plan**

Erosion and sediment (E&S) controls will be installed during the site preparation phase in accordance with the project plans and specifications. Devices and systems that will be used on this project will include, but not be limited to:

- Hay bales
- Storm drain inlet protection
- Construction entrances

All erosion and sediment controls will be constructed in accordance with the related Details or as described below. Erosion and sediment control measures will be regularly inspected to ensure that they are operating correctly. Repairs will be made as necessary to maintain all E&S controls throughout the duration of the project. Weekly inspection reports will be provided separately (Submittal Item No.8).

##### **1.4.1 Installation of E&S Controls**

E&S controls will be installed during site preparation activities and will be completed prior to any land disturbance. Initial measures will be set up on the perimeter of the project areas before material staging areas, or other features are constructed.

##### ***Hay Bales***

Since almost the entire site is covered with near-level asphalt or concrete surfaces, DAC intends to utilize hay or straw bales placed directly on the ground surface (without staking), around the perimeter of active work areas.

The hay bale perimeters will be adjusted and/or maintained on a daily basis if dictated by changes in the work zone(s). This is expected to occur regularly during 'Phase 1' of the project when DAC is performing a variety of small excavations for utility work and removal of Holder C and D foundations.

##### ***Drop Inlet Protections***

Drop inlet protections will be installed to protect the two storm drain inlets located within the O&R facility. Specifications for the inlet protections will be provided separately (Submittal Item No. 7).

Drop inlet protections will be inspected as part of the regular weekly inspection. Protections which are damaged or otherwise non-functional will be promptly replaced.

### ***Construction Entrances***

In most cases vehicles will be limited to travel on asphalt surfaces, keeping the need for cleaning of tires to a minimum. DAC plans to utilize an entrance on Brown Street as the main access for truck deliveries and hauling out waste materials. A decontamination pad located just inside the gate will serve as a stabilized construction entrance if necessary. Any vehicles which have the potential to track sediments off site will be required to pass through the decon pad for tire washing as they exit the site.

If asphalt surfaces are disturbed at any other access points, a traditional stabilized construction entrance will be installed and maintained in accordance with industry and State standards.

## **1.5 Utility Location & Removal**

Utility location will be performed by DAC with the assistance of the utility locating services and O&R operations personnel. Utility location and verification will be performed in the following sequence.

1. Inspection of existing utility stakeout markings.
2. Layout and marking of additional suspected utilities and the proposed excavation limits.
3. Utility stakeout by Dig Safely New York locating services.
4. Verification of all suspected locations. DAC will utilize a combination of hand excavation, vacuum excavation, and mechanical excavation (where allowed) to expose, locate and identify all utilities of interest.
5. The gas lines in the vicinity of Gas Holder D will be exposed and made accessible for inspection by O&R gas technicians. Upon approval by O&R, these gas lines will be removed by DAC.
6. Pre-trenching and clearance of the proposed sheetpile alignment will also occur at this time, using the same methods. Pre-trenching will be performed to a depth of 5'.

## **1.6 Clearing**

DAC intends to utilize Midhurst Tree Care for the removal of trees and brush adjacent to the 12-14 Pike Street apartment building. The qualifications for Midhurst Tree Care are provided in Exhibit 3.

## **1.7 Vehicular and Pedestrian Traffic**

It is a priority to minimize the impact to the traveling public at all times throughout the project. Safety of pedestrians and motorists are of the utmost importance. DAC will coordinate with the Port Jervis Department of Public Works and keep them informed of any changes relating to this aspect of the work.

Many work operations take place within the O&R facility, however temporary lane/sidewalk closures and traffic control measures will be required to facilitate some demolition activities, deliveries, and excavation activities close to the roadway as well as to keep the public safe. Lane closures will be kept to a minimum but may be necessary for demolition activities (Water Street, Pike Street, King Street), utility work/capping (misc locations), flaggers will be utilized to facilitate trucks entering and exiting the site. DAC will refer to the Maintenance and Protection of Traffic Plan of the Contract

Documents as well as the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD), the City of Port Jervis municipal code, and O&R health and safety requirements in preparing and implementing their traffic control plan.

*Refer to Exhibit 1 of this document for Site Layout plans depicting proposed site entrances, truck routes, etc.*

The sidewalk on the south side of Brown Street will be closed to pedestrians due to the close proximity to the excavation work. Pedestrians will be routed across to the other side for the duration of the project for their safety. Other sidewalk and lane closures are intended to be temporary depending on the particular phase of construction. The appropriate warning and guidance devices will be used in all cases including but not limited to flagmen, cones, drums, barricades, and various warning signs.

Temporary sidewalk closures planned for the demolition of 12-14 Pike Street and 28 Pike Street will be detailed in the Asbestos Abatement and Demolition Work Plan (to be submitted separately).

### **1.8 Site Security**

Entry and exit to and from the site will be limited to authorized personnel only via DAC's designated entry points on Brown and Water Streets. All personnel must sign in at the Project Office and complete an entry into the Daily Visitor Log (see Exhibit 5 of HASP).

Entry and exit to and from the site will be permitted only through designated access points, except during an emergency or as authorized by the Superintendent or HSO.

All visitors and subcontractors entering the site must be approved with the DAC prior to arrival on-site. Anyone entering the active remediation areas will be required to read and verify compliance with the provisions of the HASP. Visitors will be expected to comply with relevant OSHA regulations and expected to provide their own protective equipment.

In the event that a visitor does not adhere to the provisions of the HASP, he/she will be requested to leave the work area. All nonconformance incidents will be recorded in the site log.

### **1.9 Odor, Vapor, and Dust Control / Suppression Plan**

Odor, vapor, and dust control will be required for this project due to the close proximity of residential and commercial buildings. DAC will be responsible for odor, vapor, and dust control during the entire project, including downtimes, overnight, and weekends. The Temporary Fabric Structure (TFS) will be erected during the most intrusive portion of the excavation activities to enclose and contain fugitive odors from the Holder A excavation. More information regarding the TFS and its role in odor/vapor control can be found in subsequent sections of this plan.

Odors, vapors, and dust will be controlled: 1) to the satisfaction of the Owner, Engineer, and NYSDEC; 2) such that no MGP odors are detectable at the site perimeter; and 3) to meet the community air monitoring action levels set forth in the Community Air Monitoring Plan (Appendix G of the Remedial Design).

Typical VOC and dust control measures may include:

- Apply water for dust suppression
- Relocate operations, if applicable
- Slow the pace of excavation or material processing
- Cover portions of excavation or stockpiles
- Temporarily relocate activities to a portion of excavation with lower levels of contamination
- Reassess the existing control measures

DAC may be required to apply odor suppressants to contain vapor emissions. Rusmar AC-645 foam and/or BioSolve Pinkwater may be applied to active excavations, material stockpiles, or other areas as directed by the Engineer. The following products will be available on site at all times for these purposes:

- 6-mil polyethylene sheeting (minimum 10 rolls)
- Rusmar AC-645 foam (minimum 10 drums)
- Biosolve Pinkwater (minimum 4 drums)

The following additional precautions will be implemented to prevent the release of constituents of concern or odors from the site:

- Use of covers on all soil stockpiles
- Use of plastic lining and tarps on all trucks transporting impacted soil; and
- Thorough decontamination of all vehicles leaving the site.

### **1.10 Structure Abatement & Demolition**

Asbestos abatement within the various structures will likely require one or more variances from the NYS DOL. Preparation and submittal of any variances will occur during the pre-construction phase of the project in order to prevent any delays during the initial phases of the project.

Actual abatement work will commence as soon as possible, preferably during the first week of on-site remedial activities. The demolition of the O&R garage bay will be the first priority, followed by the abatement and demolition work at the apartments.

Information regarding abatement and demolition approach will be available at a later time following discussions with the Port Jervis Building Code Enforcement office and the City Engineer.

Upon completion of the demolition, the basements will be backfilled with Soil Fill and compacted to the subgrade elevation and covered with 8" of compacted Type 2 subbase (consistent with Asphalt Surface Cover, Drawing 15, Detail 2). Surface restoration will occur during the overall site restoration activities.

## 1.11 Structural Monitoring

### 1.11.1 Pre and Post Construction Structural Surveys

As stated previously, the pre and post construction structural surveys will be performed by C.T. Male Associates of Latham, NY. C.T. Male will provide a structural Professional Engineer to perform all the site investigations and documentation as required in the specifications. DAC has worked with C.T. Male on previous projects with equally sensitive structural assessments.

### 1.11.2 Vibration Monitoring

DAC will subcontract Vibra-Tech Inc. from Newburgh, NY for the third-party vibration monitoring. Vibra-Tech will supply and install a total of eight (8) instruments at locations consistent with the specifications and recommendations from both Vibra-Tech and C.T. Male. Instrumentation will be Vibra-Tech MultiSeis Plus remote vibration monitoring systems. These instruments are installed in secure lock boxes with solar power and battery backup, and are capable of remote monitoring with wireless e-mail alarm notification at pre-determined vibration thresholds. E-mail notifications can be provided to multiple recipients including Vibra-Tech, DAC, and the Engineer.

DAC intends to have the instruments installed and operational during the site setup phase of the project. This will provide an opportunity to obtain some background data before any high energy / vibration inducing operations occur. The first such activity would be the demolition of the concrete foundations of Holders C and D.

Since the instruments are remotely monitored by Vibra-Tech, there is no need for a full time on-site technician during less critical phases. However, considering the potential for vibration related damaged during pile driving, DAC proposes the following plan for on-site and remote vibration monitoring.

- |   |                               |
|---|-------------------------------|
| • Initial setup and testing of instruments: | Vibra-Tech on-site technician |
| • Background monitoring / data collection:  | Remote monitoring             |
| • Holder C & D removal and backfill:        | Remote monitoring             |
| • Sheetpile pre-spudging and pile driving:  | Vibra-Tech on-site technician |
| • Bracing installation / removal            | Remote monitoring             |
| • Holder A excavation and backfill:         | Remote monitoring             |
| • Sheetpile extraction:                     | To be determined              |

Please note that any remote (off-site) monitoring by Vibra-Tech would be further supplemented by on-site observation and instrument monitoring by DAC and/or Engineer personnel. Daily and weekly reports will be made available from both DAC and Vibra-Tech.

### 1.11.3 Deflection Monitoring

DAC will install the tiltmeters on the sheetpile wall after the bracing has been installed, and prior to any excavation below elevation 429.5'. This will protect the tiltmeters from any potential damage that may be caused by bracing installation and welding. DAC will perform the routine monitoring and reporting of the tiltmeter data as specified.



## **1.12 Excavation Support System**

This information will be submitted separately as part of the Pile Installation Plan (Submittal Item Nos. 18-25).

## **1.13 Temporary Fabric Structure**

DAC will provide a 96'x164' TFS/R temporary fabric structure (TFS) to enclose and contain fugitive odors from the Holder A excavation. The TFS will be equipped with two (2) personnel doors, three (3) 14'x14' steel overhead doors, translucent panels for natural lighting, and all requisite anchoring and framing.

The TFS will be erected over the work area once the internal bracing for the excavation support system has been fully installed. The proposed TFS footprint will extend further to the northeast than shown on Drawing 6, such that at least one bay (~16') of the TFS extends beyond the corner of the O&R office building. DAC intends to maintain the Brown Street access as the main entrance/exit for truck traffic. For hauling to and from the TFS the preferred method will be for the trucks to back in from Brown St. and pull directly out if possible. Trucks will be able to enter either side if this initial path is deemed unfavorable. The third vehicle entrance will be on the Water Street side of the building, providing access to the material staging area on that side of the site, which will be used for reusable soils.

Ventilation and odor control will be maintained with two TIGG NB-20 vapor treatment systems. The blower units will be equipped with TIGG's Silencer Package for noise suppression. The two TIGG units will provide sufficient ventilation to obtain 4-6 air changes per hour depending upon the current depth of excavation. DAC intends to stage the TIGG units in the small loading dock area on the southwest side of the offices. Stack effluent monitoring will be performed by DAC's Health & Safety Officer (HSO) in conjunction with his other air monitoring duties.

Erection and dismantlement will be performed by DAC personnel with oversight by a technical representative from the TFS rental vendor. DAC does not intend to relocate the TFS for any reason.

## **1.14 Excavation & Backfill**

### **1.14.1 Material Staging Areas**

DAC intends to construct and maintain two material staging areas.

A 'clean' staging area for reusable materials will be installed along the Water Street side of the site, situated as shown on the attached Site Layout drawings. This staging area should be suitable to stockpile 500-750 CY of material. Additional 'clean' staging can be expanded to the other side of the gas regulator station if necessary.

A second 'impacted' staging area will be installed along the King Street side of the site. This larger staging area will encompass the entire King Street side of the yard with a lined area of approximately 35'x140'. A significant portion of this area will be used for staging and containment of the on-site water treatment plant. The remainder of the space will be used to stockpile impacted materials from the

Holder C / D excavations (if necessary), and for the installation of an equipment decontamination pad (additional 20'x50', see drawing).

The impacted staging area should be suitable for stockpiling of no more than 300 CY. This is consistent with the goal of minimizing any on-site stockpiling of impacted materials.

### **1.14.2 Holders C and D**

Demolition of the concrete holder foundations will be performed with an excavator mounted ramhoe. The ramhoe will break concrete down to sufficient size for excavation and eventual off-site disposal at either the landfill or the thermal treatment plant. In general, all debris will be sized down to 2'x2'x2' in order to be acceptable at either facility. Rebar and other steel reinforcement will be cut and trimmed as necessary to complete the demolition and gain acceptance at either the landfill or a local scrapyards (as authorized by the Engineer).

The removal of Holders C and D will be performed using a combination of standard excavation and concrete demolition methods. DAC will provide a CAT 325 excavator (or similar) and a front end loader (~3 CY). The excavator will perform all primary excavation and/or removal of soil, concrete rubble, brick debris, etc. The loader will assist the excavator by stockpiling excavated materials at either of the material staging areas, or by loading trucks for off-site disposal. Where possible, the excavator may direct load trucks also.

DAC will make every effort to coordinate waste transportation with the excavation schedule such that the need for on-site stockpiling is maintained at an absolute minimum.

### **1.14.3 Purifier & Separator Cleanout**

DAC will expose and excavate the contents of these structures using the same methods described above. Care will be taken to avoid any concrete breaking or demolition work which may affect the integrity of the structures or adjacent buildings. Once the bulk contents have been removed by the excavator, DAC will perform a final cleaning of the interiors using a combination of manual methods (i.e. scraping) and power washing. Confined space entry and/or work requiring fall protection (if applicable) will be performed in accordance with all applicable laws and regulations, O&R health and safety requirements, and DAC's HASP.

Upon completion of the Engineer's inspection, DAC will fill the structures with CLSM, or perform additional demolition and removal (if ordered by the Engineer).

### **1.14.4 Holder A Excavation**

The excavation of the Holder A area will occur in two phases as detailed in the Holder A construction sequence on Drawing 7. The first phase will be the removal of the overlying soil and structure (if any) to elevation 429.5'. This phase will be performed in the same manner as Holders C and D.

The deeper excavation phase will occur once the sheetpile and bracing systems have been fully installed and the TFS is erected and operational. The same earthwork equipment will be utilized to perform the soil and structure removal during this phase, but the excavation approach will be more methodical due to the presence of the internal bracing system. The excavator will typically be located inside the sheetpile perimeter, excavating and moving material back towards the loader. Excavation during this phase will

occur starting from the Water Street side of the area and proceed toward the King Street side. DAC will excavate in a progressive manner such that an excavation face will be advanced to full depth along the entire Water Street side, then advancing towards King Street.

Full depth excavation across a working face will also allow for an opportunity to blend wet and dry soils from various depths. If excavation dewatering and soil blending are not sufficient to achieve the requisite moisture content, DAC will amend the material with like kiln dust (LKD). LKD will be stored in DAC's on-site silo and can be conveyed to the work area by the loader or discharge auger.

LKD documentation is attached. Please note the difference between Total Calcium Oxide with Available Calcium Oxide. The available CaO is the reactive component of the LKD product, also referred to as 'free oxide' in the NYSDEC May 2008 Memorandum. The remaining percentage of CaO is inert and non-reactive mineral.

The LKD silo will be stationed in between the TFS, Tigg units, and decon trailer in the area between the O&R facility and Water Street. LKD will be delivered by bulk tanker to the silo, and offloaded pneumatically. The silo is equipped with a bag house for the purpose of mitigating dust during the transfer process. This activity and mitigation measures will fall under the purview of the other site-activities that are required to be monitored under the CAMP.

The additional length of the TFS and the dual overhead doors will allow transport vehicles to enter the TFS along the Brown Street side of the work area, for loading while inside the TFS. The west to east sequence of the excavation may also offer an opportunity to place haul trucks closer to the work area and minimize the need for the loader to move material across the excavation support perimeter. Where excavation equipment must cross over bracing struts or sheetpile, a series of crane mats and earthen ramps will be used to comply with the ground pressure limits on the excavation support system.

#### **1.14.5 Backfill Placement**

In all cases, clean backfill will be placed in the excavations using both the excavator and/or the loader. Since the excavations are relatively small and crowded, the excavator or loader will be used to spread backfill (imported or reusable) in stipulated lifts. Compaction will be performed using either a remote controlled trench roller, or a walk behind dual drum roller.

Reusable material will be saved for placement as subsurface material in the Holder A excavation.

#### **1.15 Construction Water Management**

Excavation dewatering will be performed using a series of excavated sumps and submersible pumps configured as needed within the excavations. During the excavation of Holder A, one or more sumps will be established as early as possible in order to suppress the groundwater in the vicinity of the work. Water accumulating on the material staging pads will also be collected as needed.

Prior to the Holder A excavation, the potential for the accumulation of a high volume of construction water is limited. During the early phases of the project, DAC will provide a single frac tank for the storage of any impacted water resulting from excavation work or equipment decontamination. This

water will be stored until the temporary water treatment plant (WTP) is mobilized, at which point the accumulated water will be used as part of the initial demonstration batch testing.

Once mobilized, the WTP will be located on the King Street staging area as described previously. The system components for the design will include the following items:

- Influent water storage shall include one (1) wier tank for oil / water separation, and one (1) standard frac tank for additional storage. Total influent capacity 40,000 gallons.
- Treated water storage shall include one (1) frac tank for demonstration batch testing and/or system observation during continuous operation and discharge.
- Filtration and treatment technologies shall include:
  - Bag filter particulate filtration
  - Organoclay filtration
  - Activated carbon filtration

Operations and testing frequency (both batch and continuous) will be performed in compliance with the letter from NYC DEC dated April 5, 2011. If any change in water treatment sizing / capacity occurs an updated summary will be provided.

Specifications on treatment system components and media will be supplied separately once the discharge permits, flow rates, and testing criteria have been determined by the various agencies.

**1.16 List of Subcontractors**

The following list represents DAC’s major subcontractors for various items of work:

- |                                    |                       |
|------------------------------------|-----------------------|
| • LVI Environmental Services, Inc. | Asbestos & Demolition |
| • CT Male Associates               | Structural Survey     |
| • Taylor Fence                     | Permanent Fence       |
| • Thew Associates Land Surveyors   | Survey                |
| • Vibra-Tech                       | Vibration Monitoring  |
| • CRL Electric Corp, Inc.          | Electrical            |
| • Midhurst Tree Care               | Clearing and grubbing |
| • Warner Paving and Excavating     | Milling & Paving      |
| • Hayward Baker                    | Pre-drilling          |

Select subcontractor qualifications can be found in Exhibit 3 of this document, additional qualifications will be submitted as they become available.

**1.17 List of Equipment**

The following list represents the major equipment expected to be utilized on site. Equivalent or similar machines may be substituted dependent upon availability and nature of the work.

- IT28 Loader w/forks

- CAT 325 Excavator
- 60-ton crane
- ABI Mobilram
- All-terrain manlift
- Ice 612 vibratory hammer
- Ice 60S diesel pile hammer
- Temporary water treatment system
- Ditch Witch Vac Trailer
- Vibratory roller
- Misc. welders, pumps, saws, etc.

## 1.18 Waste Disposal Facilities

DAC proposes to use the following TSDFs for the waste disposal services on this project:

Non-Hazardous Material for LTTD	ESMI of New York
- Alternate LTTD	Bayshore Soil Management
Clean Asphalt	Bayshore Recycling
Clean Concrete	ESMI of New York
Demolition Debris (RACM Waste)	Minerva Enterprises
Roofing Debris (C&D)	110 Sand Company Landfill
Fluorescent and Sodium Halide Lamps	American Lamp Recycling
Fluorescent Light Ballasts	Clean Harbors
Refrigerants	National Refrigerants
TVs/CRTs	Per Scholas
Fire Extinguisher	Clean Harbors
Batteries	Clean Harbors
Mercury Containing Thermostats	Bethlehem Apparatus
Non-haz Liquids	Clean Harbors
Scrap Metals	Cinelli Iron & Metal
Lead Paint Chips	Clean Harbors

- An alternate for Clean Harbors will be the EQ Company which is also an O&R approved facility.
- Potential alternate for clean concrete, asphalt, C&D, and incidental debris is Taylor Recycling which is also an O&R approved facility.
- Additional information regarding the waste streams to be generated during the demolition activities, and the O&R-approved TSDFs to be used for those waste streams, will be provided under separate cover.

## 1.19 Equipment Decontamination Procedures

### 1.19.1 Equipment Decontamination Pad

The decontamination pad (decon pad) will be installed in-line with the northern site access gate along the exit portion of the route (See Site Layout). The decon pad will be sufficiently sized to allow for decontamination of the largest equipment (dump trailers). Construction of the decon pad will include the following specifications:

- 40-mil LLDPE liner with 4" containment berms
- 12 oz. fabric on top of and below liner
- Wood plank deck surface for vehicle tracking (2"x12' or similar)

The decon pad will be utilized for vehicles which have come into contact with impacted soils (i.e. excavators, loaders, off-road dumps, etc.). It is anticipated that off-site haul trucks will only require decontamination in the event that the exterior bed or wheels of the vehicle come in contact with impacted materials.

Decontamination water collected in the sump during equipment/truck decontamination will be transferred to the untreated water storage tank for management in accordance with the Construction Water Management Plan.

### **1.19.2 Equipment Decontamination**

Decontamination of equipment will be performed to prevent the migration of contaminants off-site and between work areas on the site. All equipment and other tools will be cleaned prior to site entry to remove grease, oil, encrusted dirt, or other materials. An inspection of the equipment will be made by the Project Superintendent prior to approving equipment for use on-site.

Decontamination of small reusable equipment will be performed at a designated location within the contamination reduction zone. Decontamination of equipment will consist of soap and water washing and water rinse.

Following decontamination, clean equipment will be securely stored away from potential contaminants if not immediately used. The Project Superintendent will be responsible for inspecting all equipment leaving the site for adequacy of decontamination.

### **1.19.3 Decontamination Methods**

For general cleanup equipment decontamination will include gross removal of bulk debris at the Decon Pad by brushing or scraping followed by thorough decontamination with a power washer with a minimum 3,000 psi pressure rating and industrial grade degreaser.

Small tools and equipment which cannot be safely pressure washed will be hand washed with a warm detergent solution within the Decon Pad.

Non-disposable equipment cleaning shall be deemed complete based on visual inspection.

Personnel engaged in vehicle decontamination will wear protective clothing and equipment as determined in this HASP.

### **1.19.4 Disposal of Decontamination Wastes**

Personal protective equipment will be co-disposed with bulk solid waste and disposed of at an approved waste facility.

Decontamination water will be collected in a designated sump, pumped to an on-site frac-tank for storage, and treated prior to discharge.

Solid material generated from the decontamination of the equipment shall be co-disposed with bulk-solid waste and disposed at an appropriate waste facility.

### **1.20 Site Restoration**

Upon completion of the Holder A excavation area, the following site restoration activities will occur:

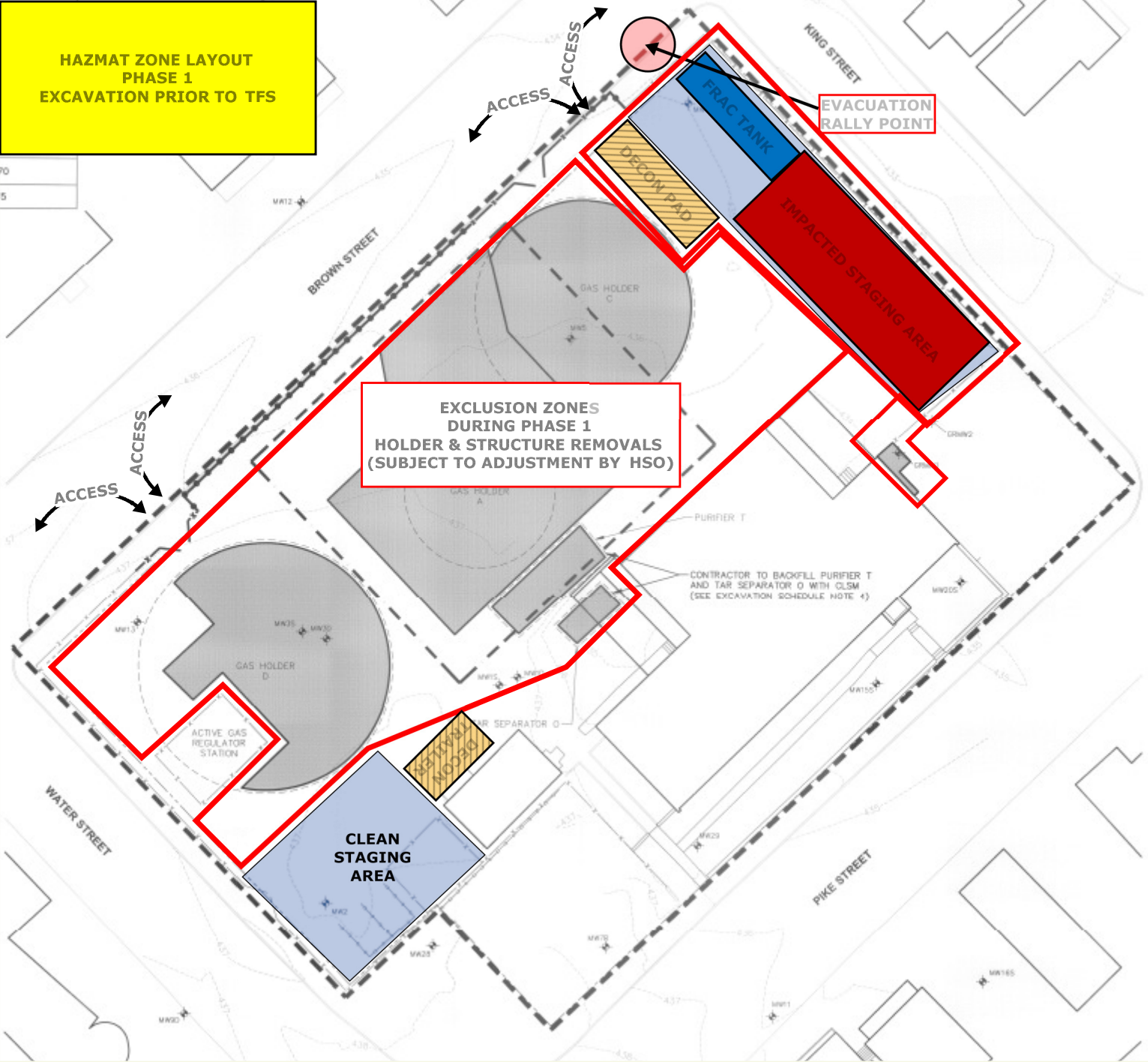
- Removal of the temporary fabric structure and ventilation systems.
- Removal and decontamination of the excavation support system.
- Decontamination and dismantlement of the temporary water treatment plant.
- Removal of the material staging areas including aggregates, liners, and Jersey barrier.
- Decontamination and demobilization of personnel and equipment.
- Placement of soil fill and Type 2 subbase to the asphalt paving subgrade conditions.
- Milling of remaining competent asphalt (where accessible to milling machines).
- Paving of the entire area as shown in Drawing 11.
- Removal of temporary offices and facilities.
- Installation of permanent fence, sidewalks, vegetated areas and other surfaces.
- Post construction structural and sewer inspections.
- Final as-built surveys



## **EXHIBIT 1**

### ***Layout Drawings***

**HAZMAT ZONE LAYOUT  
PHASE 1  
EXCAVATION PRIOR TO TFS**



**EXCLUSION ZONES  
DURING PHASE 1  
HOLDER & STRUCTURE REMOVALS  
(SUBJECT TO ADJUSTMENT BY HSO)**

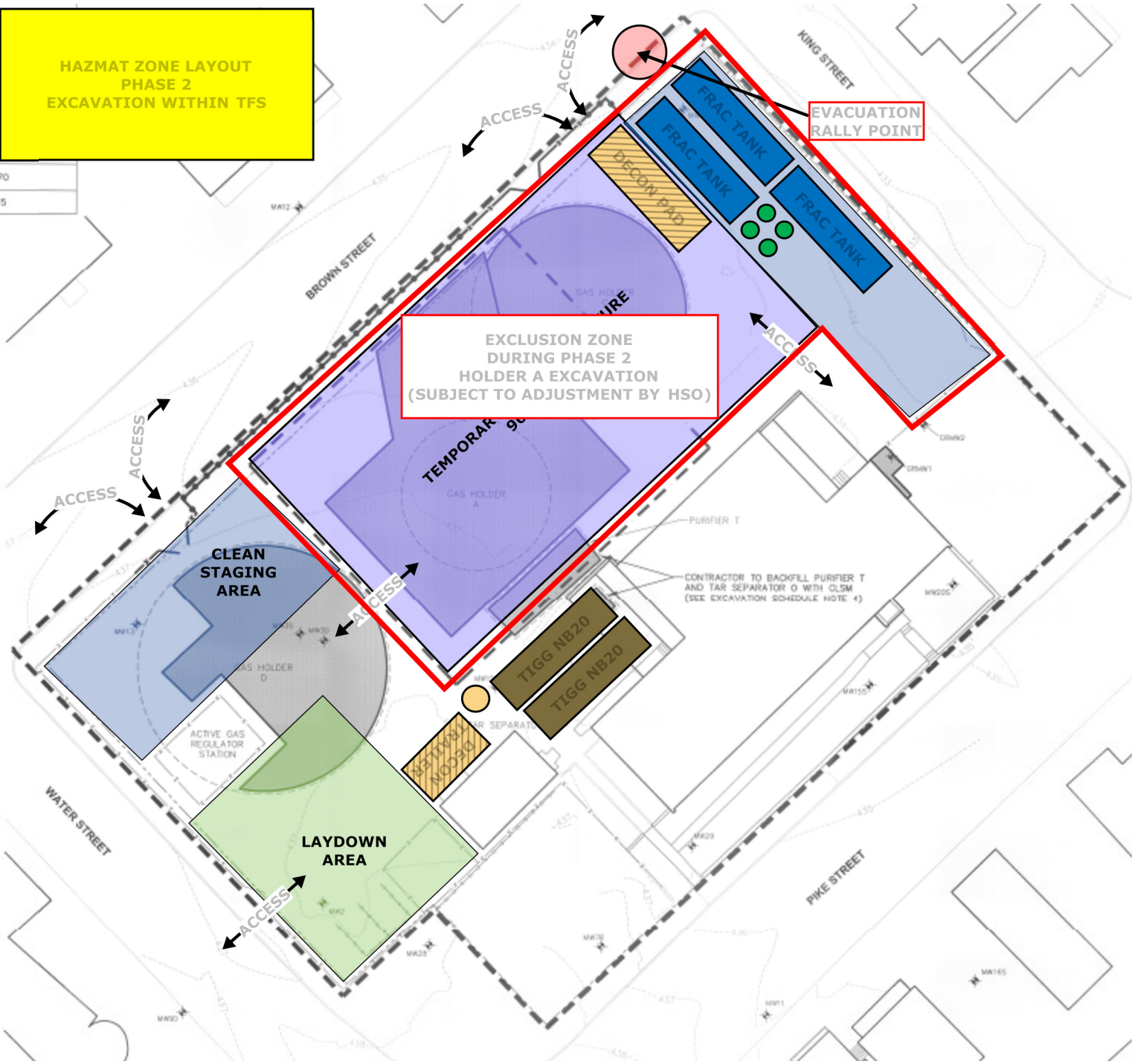
**EVACUATION  
RALLY POINT**

CONTRACTOR TO BACKFILL PURIFIER T  
AND TAR SEPARATOR O WITH CLSM  
(SEE EXCAVATION SCHEDULE NOTE 4)

**CLEAN  
STAGING  
AREA**

**HAZMAT ZONE LAYOUT  
PHASE 2  
EXCAVATION WITHIN TFS**

70  
15



CONTRACTOR TO BACKFILL PURIFIER T AND TAR SEPARATOR O WITH CLSM (SEE EXCAVATION SCHEDULE NOTE 4)

## EXHIBIT 2

### *Resumes*

**DAVID MACDOUGALL**  
**DIRECTOR OF REMEDIATION**



**PROFESSIONAL EXPERIENCE:**  
20 Years of Environmental Contracting

**REGISTRATIONS / CERTIFICATIONS:**  
OSHA 40 Hour HAZWOPER

**EDUCATION:**  
M.Eng., Environmental Engineering  
Rensselaer Polytechnic Institute, 2001

B.S. Environmental Studies  
University of Buffalo, 1992

**PROFESSIONAL HISTORY**

**D.A. COLLINS ENVIRONMENTAL SERVICES, LLC** **2002-PRESENT**  
Director of Remediation responsible for daily management and direction on all facets of D.A. Collins Environmental Services including business development, cost estimating, proposal generation, and project operations. Projects include Superfund sites, Brownfield projects, marine remediation, environmental dredging, MGP sites, landfill operations, and industrial remediation involving contaminants such as pesticides, PCBs, coal tars, solvents, heavy metals, petroleum hydrocarbons, and other constituents.

**AAA ENVIRONMENTAL, INC.** **2000-2002**  
Corporate Manager of Project Development responsible for daily management of all major remediation projects performed by AAA Environmental. Supervised and managed all of AAA's estimators and project managers. Provided daily support and oversight during estimate preparation, proposal development, and project performance. Provided engineering support for projects with technical elements including soil stabilization, heavy metal fixation, chemical oxidation, wetlands restoration, stream flow diversion, wastewater treatment, sampling and analysis protocol, and quality assurance / quality compliance requirements.

**MARCOR REMEDIATION, INC.** **1993-2000**  
General Manager of the Albany, New York office with responsibility for fiscal and operational performance on all projects performed in the region. Coordinated sales and project management staff on business development issues including general sales and marketing, target market development, project bidding strategies, and revenue growth objectives. Competitively bid and managed numerous environmental projects including many with budgets of \$100,000 to \$1 million. Typical projects include PCB cleanups, plant and equipment decommissioning, soil and groundwater remediation, asbestos abatement, solid and hazardous waste management, tank removals and upgrades, emergency spill response, and industrial cleaning.

**TONAWANDA ENVIRONMENTAL CORPORATION** **1991-1993**  
Technical Specialist providing assistance for field operations including waste sampling, characterization and disposal. Prepared waste profiles, manifests, labels, land bans, and other related documents. Designed and maintained TEC's waste management database. Capabilities included waste stream inventory tracking, record keeping and reporting, and document preparation.

## PROJECT EXPERIENCE

### NEWBURGH MGP SEDIMENT REMEDIATION

### CENTRAL HUDSON GAS & ELECTRIC

Project Director for a \$16MM sediment remediation on the Hudson River in Newburgh, New York requiring the removal of over 23,000 CY of coal tar impacted river sediments with dredge prism depths ranging from 2' to 20' bg. Prior to dredging, an active 30" storm sewer and 48" STP discharge line were realigned around the site, and a 480 LF sheetpile barrier wall was installed along the shoreline. The barrier wall was a combination wall design using 60' king piles (W36x210) and 32-40' watertight sheets (PZC-13/18). During dredging water quality and turbidity were controlled using two technologies: DAC's mobile dredge cell system was used in the 'PAH Area' where the dredge prism was located furthest from the shoreline, while a more traditional sheetpile containment wall (900 LF) was installed around the nearshore 'NAPL Area' where sediment removal depths and contaminant levels were most challenging. Following dredging, the NAPL area was backfilled with imported gravel. The final phases included the installation of a NAPL collection trench system behind the barrier wall, using biopolymer slurry methods during installation of the drainage stone and piping. Waste management included an on-site 100' x 200' temporary fabric structure for storage and containment prior to off-site disposal of over 45,000 tons of sediment and debris.

### OIL TERMINAL – DREDGE & BARRIER WALL

### GLOBAL COMPANIES, LLC

Project Director for a \$2.9MM sediment and upland remediation in an active oil terminal at the Port of Albany, New York. Due to heavy upland impacts, free product was generating an active sheen along the Hudson River shoreline. The scope of work included the installation of a 137 LF watertight sheetpile barrier wall to block NAPL migration and provide excavation support during shoreline excavation. Shoreline removal included the excavation and mechanical dredging of over 1,600 CY of bed sediments and bank soils while contained with a two tiered turbidity curtain system. Upland work including additional excavation followed by a phytoremediation plot using 180 hybrid poplars planted at 16' depth.

### IPARK EDGEWATER

### NATIONAL RE/SOURCES

Project Director for a \$2.8MM remediation of an urban waterfront redevelopment site located in Edgewater, New Jersey. Scope of work included the excavation and off-site disposal of 21,000 CY of soil and debris impacted with heavy metals (lead, arsenic), pitch tar, and PCBs. Excavations were performed 'in the wet' due to high groundwater conditions. Waste management included segregation of the various soil types, moisture management with lime kiln dust, and stabilization of leachable lead and arsenic with Portland cement.

### OIL TERMINAL NAVIGATIONAL DREDGING

### APEX OIL

Project Director for a \$1.2MM dredging project comprising of two separate oil terminals in the Port of Albany area, each requiring 1,400 CY and 5,000 CY of sediment removal. Due to low level PCB impacts in the sediments, both terminals were mechanically dredged using DAC's mobile dredge cell concept and a CableArm environmental clamshell. Dredge sediments were transported to the Glenmont terminal for offloading and management. Class B sediments were recycled on-site in a state approved fill placement area. Class C sediments were shipped off-site for landfill disposal.

### ST. LAWRENCE RIVER REMEDIATION PROGRAM

### ALCOA

Project Director for a \$4.5MM PCB and PAH subaqueous cap installation over 6 acres within the St. Lawrence River in Massena, New York. Project scope included construction of a subaqueous cap system over 6 acres in area, excavation/dredging of approximately 500 cubic yards of sediment within four near-shore cells performed from land using a long-stick excavator and standard digging buckets. The capping work was performed using DAC's patented mobile capping cell (MCC) technology, allowing for discrete placement of subaqueous cap layers with precision control on horizontal limits and cap layer thicknesses. The near-shore dredging and capping was performed using traditional mechanical methods.

### TROY MGP AIR PLENUM

### NATIONAL GRID USA

Project Director for a \$1.7MM remediation at a former MGP plant site consisting of the demolition and cleanout of approximately 900 LF of air plenum tunnel structure. Demolition including concrete breaking followed by removal of the brick arch ceilings of each tunnel. Cleanout required dewatering of the tunnel followed by in-situ stabilization of pure coal tar material using WasteLock polymer. Over 1,400 CY of pure coal tar was removed from the air plenum. The plenum was then filled with flowable fill concrete and a surface treatment.



**LUZERNE ROAD PCB REMEDIATION****NYS DEC**

Project Director for a \$25MM remediation of a PCB impacted soil located in Queensbury, NY. Scope included excavation of approximately 80,000 CY of PCB contaminated soils, which included segregation of TSCA and Non-TSCA soils at various depths within the excavation grids. The non-TSCA soils were treated in a mobile direct heated Thermal Desorption Unit and the TSCA soils were shipped off-site to a TSCA permitted landfill. Treated soils were returned to the excavation areas. The project also included the excavation and segregation of over 1,000 tons of PCB large capacitors, which were separated for off-site incineration.

**WARD PRODUCTS STREAM REMEDIATION****PRIVATE REALTY**

Project Director for an \$800,000 sediment removal project related to storm drainage from a former upland plant. Heavy metal contamination occurred in several locations along a 3,200 LF drainage in Amsterdam, New York. Sediment removals were required in four (4) disconnected and significantly differing areas including a small stormwater retention pond, a deep ravine adjacent to an active railroad, a surface drainage channel, and an active creek which discharged to the Mohawk River. Work on the river area required the utilization of turbidity curtains and current diversion structures. Excavation methods varied by area with sediment removal and disposal totaling over 3,300 tons. Restoration included various stone and gravel fill materials as required for the various habitats.

**BOUCHARD JUNKYARD****NYS DEC**

Project Director for a \$9MM soil excavation and disposal project in New Lebanon, New York. Project scope included site clearing and preparation on a 17-acre mixed use rural site, excavation and disposal of PCB contaminated soil, and site restoration. Excavation of TSCA and non-TSCA regulated soils required removal of over 41,000 CY of contaminated soil and disposal of 59,000 tons of non-TSCA soil and 16,000 tons of TSCA soil. Additional work included specialty excavations in wetlands areas, on residential and commercial properties, and in close proximity to State Route 20. Site restoration included a similar volume of imported fill and topsoil and several hundred tree and shrub plantings both within the wetlands and on the residential / commercial properties.

**GE BLDG. 271 INTAKE DREDGE****GENERAL ELECTRIC**

Project Superintendent for a \$255,000 near shore sediment dredging project (with suspected PCBs) on the Mohawk River in Schenectady, New York. Scope of work included environmental dredging of approximately 200 CY of sediment deposited in front of a river intake building. Dredge spoils were transported to the main plant for solidification and off-site disposal. Turbidity controls included the utilization of an environmental clamshell bucket and full perimeter turbidity curtain.

**HERRICK HOLLOW CREEK RESTORATION****HONEYWELL / AMPHENOL**

Project Director for a \$1.1MM restoration of a small Catskill stream located in a NYC DEP watershed. The restoration project was a full scale demonstration of advanced stream design theory with significant agency oversight including USEPA, NYS DEC, and NYC DEP. Restoration work included the excavation and realignment of over 3,200 linear feet of streambed to add sinuosity and reduce gradient. In-stream structures included a significant number of rock cross vane, log cross vanes, rock cascades, and a vehicle ford. Wetland restoration work included the construction of several vernal pools and the reestablishment of wetland plants through an aggressive tilling, soil amendment, and wetland seeding program over six acres of affected area. Plantings included over 600 shrubs and 24,000 live stake plantings.

**SCHOOL ST. HYDRO – PCB DREDGING****NATIONAL GRID & BROOKFIELD POWER**

Project Director for a \$180,000 near shore PCB impacted sediment dredging project on the Mohawk River in Cohoes, New York. Scope of work included environmental dredging of approximately 150 CY of sediment deposited upstream of the hydroelectric intake building. Dredge spoils were solidified and shipped for off-site disposal. Turbidity controls included the utilization of an environmental clamshell bucket and full perimeter turbidity curtain.

**34 FREEMAN'S BRIDGE ROAD****NYS DEC**

Project Director for a \$22MM soil remediation and on-site thermal treatment project in Glenville, New York. Project scope elements included removal and treatment/disposal of over 99,000 cubic yards of Non-TSCA and TSCA soil and debris, and site restoration. The excavation plan called for a complicated 50'x50' grid system of excavations in 2' increments to terminal depths of 6-9' below grade. Excavation grids typically contained a combination of both TSCA and non-TSCA layers were then segregated for treatment or disposal. Excavations also frequently encountered drums with unknown wastes that required special handling. Non-TSCA soils (45,000 CY) were thermally treated in ESMI's mobile thermal

treatment plant where all organic contaminants (PCBs, VOCs, SVOCs) were destroyed. Approximately 33,000 tons of TSCA soil and debris were shipped to an off-site TSCA landfill for disposal. An additional 21,000 tons of non-TSCA debris (from screening) was also shipped to a non-hazardous landfill.

#### **SPA STEEL MGP REMEDIATION**

#### **NATIONAL GRID**

Project Director for a \$900,000 MGP remediation in the City of Saratoga Springs, New York. Scope of work included the construction of a 'cap and containment' design for coal tar impacts occurring at >25' depth adjacent to, but outside of, an existing sheetpile containment. Tasks included pre-excavation and utility abandonment, installation of over 3,000 SF of watertight sheeting, installation of grout columns for sheetpile tie-ins, and construction of all cap components. The cap components included geocomposite drainage, 30-mil PVC liner, perimeter trench drains, monitoring wells, and one extraction well. All work was performed in a high profile environment with close proximity to both public commercial and residential facilities.

#### **NYACK MGP OUI – UPPER TERRACE & HUDSON VISTA ISS**

#### **ORANGE & ROCKLAND UTILITIES**

Project Director for a \$4.3MM remediation of a former MGP located in the Village of Nyack, New York. Scope of work included in-situ solidification (ISS) of approximately 2,500 CY of coal tar impacted soil and the excavation and disposal of over 27,000 tons of impacted soil and debris. The ISS was performed with a vertical rotary auger with over 200 individual columns ranging in depth from 7-19' below grade. Excavation and disposal was largely performed while inside a 132' x 248' temporary fabric structure with three TIGG NB-20 vapor control systems. Demolition and debris handling included the removal of several holder bases and related MGP subsurface structures. All work was performed in close proximity to the Hudson River, high density residential properties, and high value commercial properties with close scrutiny by the Village of Nyack. Daily operations were very successful in maintaining strict compliance with the site traffic control plan and odor suppression plan.

#### **RICHARDSON HILL ROAD LANDFILL**

#### **HONEYWELL & AMPHENOL**

Project Director for a \$2.5MM landfill capping (over 7 acres) and wetland restoration project located at the Richardson Hill Road Superfund site in Sidney Center, New York. Scope of work included construction of extensive stormwater controls for landfill runoff including sediment catch basins, rip-rap swales, and an extensive culvert system. Wetland restoration required the installation of coir mattresses, coir fascines, turf reinforcement mats, and related erosion protection features along a ½ mile streambed. Landfill capping elements included the removal of over 6,000 cy of off-spec drainage sand already placed on top of an existing LLDPE liner, subgrade repairs & improvements, liner repairs, and installation of the final cap layers which included 34,000 SY of geocomposite drainage net, barrier soil (23,000 CY), topsoil, and erosion control blankets.

#### **WATER ST. MGP, TROY AREA 4**

#### **NATIONAL GRID USA**

Project Director for a \$17MM+ remediation of a former coal tar disposal site located on the shoreline of the Hudson River in Troy, New York. Project scope elements included removal and disposal of over 90,000 cubic yards of coal tar and soil, removal of tar weeps in the river tidal zone, construction of riverside retaining walls, and construction of a six (6) acre engineered RCRA cap system (16 oz. cushion layer, 40 mil. LLDPE, tri-planar geocomposite, geogrid). Work along the shoreline requires installation and maintenance of over 3,000' of turbidity curtain plus additional controls during removal of tar weeps from the tidal river. Construction of the retaining walls included both soldier pile walls and gabion walls.

#### **GE NEWELL ST. AREA II**

#### **G.E. POWER SYSTEMS**

Project Director for a \$1.5MM soil excavation and capping project at one of GE's PCB remediation sites in Pittsfield, Massachusetts. Scope of work included the excavation and removal of over 14,000 CY of PCB contaminated soil and debris located in a site directly adjacent to the Hoosatic River. Excavation of debris included the removal and overpacking of several hundred buried drums containing various wastes. Other excavation areas contained thousands of PCB capacitors which were segregated from the soil with a vibratory screen and consolidated in drums for separate disposal. Site restoration included the construction of a 3.5 acre engineered cap including 16 oz. cushion fabric, 60 mil. LLDPE liner, and geocomposite drainage net. Other restoration work included extensive plantings and seedings in accordance with a natural resource restoration plan. This project was performed in close proximity to residential properties with strict oversight by multiple EPA officials.



**BASS RIVER MGP SEDIMENT REMEDIATION****NATIONAL GRID USA**

Project Director for a \$1.5MM dredging remediation of the Bass River - Beverly MGP site in Beverly, Massachusetts. Scope of work required mechanical dredging of 2,200 CY of river sediment and coal tar as necessary to install a subaqueous cap system over the remaining coal tar. Dredging cuts were typically 3' in water depths varying from 5-24' deep. Environmental protection included a dredge-cell style turbidity curtain system, extensive NAPL management, and dust / odor / vapor management. Saltwater conditions, a 9' tide, and bidirectional flow all complicated various aspects of the project which was completed during severe winter conditions. The subaqueous cap system included a 3' layer of a high organic, high silt capping media secured with scour control mats.

**TARRYTOWN FORMER MGP****NATIONAL RE/SOURCES**

Project Director for a \$6.3MM, multi-phase remediation of an industrial site on the Hudson River, just north of the Tappan Zee bridge. Project scope elements included mechanical dredging of 2,750 CY of coal tar contaminated sediments, reconstruction of a 160' river bulkhead wall, installation of DNAPL collection trenches using biopolymer slurry wall methods, and removal and disposal of DNAPL and LNAPL contaminated soils. River dredging was performed using a barge mounted, mechanical dredge which utilizes a sealable clamshell bucket on a hydraulically controlled boom. River depths for this project range from 10-25 feet with target sediment removal depths of approximately 2-7'.

**GENESSEE RIVER SEDIMENT DREDGING****CSX TRANSPORTATION**

Project Director for a \$1.3MM dredging remediation of the Genessee River in Rochester, New York. Scope of work included mechanical dredging of 3,000 CY of river sediment contaminated with methylene chloride and acetone. Dredging cuts ranged from 4-6' deep in water depths varying from 6-24' deep. River conditions (high storm flows and heavy debris) required the utilization of a floating dredge cell approach with a suspended turbidity curtain system. Restoration included the installation a subaqueous cap and modifications to an existing sheetpile bulkhead adjacent to the dredge area.

**GE LANDFILL NO. 6 CLOSURE****G.E. SILICONES**

Project Engineer for the closure and capping of the last RCRA hazardous waste landfill at GES's Waterford, New York plant. The scope of work included subgrade preparation, engineered cap construction (GCL and 40 mil LLDPE), gas vent installation, drainage controls, and installation of barrier soils over a 1.4 acre parcel at the top of the landfill. Due to the presence of hazardous waste, the work was performed with a high level of regulatory scrutiny with extra measures taken to protect the waste from water intrusion and wind erosion during grading and cap construction.

**DEWEY-LOEFFEL T11A REMEDIAL ACTION****GE CORPORATE ENVIRONMENTAL**

Project Engineer for a Remedial Action at the Dewey Leoffel site in Nassau, New York. Remediation activities required the removal of over 1,000 tons of PCB contaminated sediments from a 2,000' tributary stream (T11a) that discharges to the Valatie Kill. Ecological preservation of both T11a and the Valatie Kill required innovative methods to remove fine-grained sediments from the streambed without stripping the area of morphological features such as larger stone, natural contours, and bank vegetation. Stream diversion required a multiple dam and pump system capable of flows up to 1,500 gpm with reliable service through seasonal floods and sub-zero temperatures.

**CDS FINAL CAP CONSTRUCTION****CORNELL UNIVERSITY**

Project Director for the CDS (Chemical Disposal Site) final cap construction at a hazardous waste landfill located in Ithaca, New York which was formerly used for the disposal of laboratory waste by Cornell University. The scope of work included concrete entombment of a gas cylinder disposal area and construction of an engineered cap (GCL, 60 mil LLDPE, geocomposite drainage, biotic barrier, & barrier soils). Mechanical work included upgrades to the leachate collection system and permanent connections from the wells to the water treatment plant.

**PULVERIZING SERVICES CERCLA RESPONSE ACTION****PPG INDUSTRIES, INC.**

Senior Project Manager for a Superfund Response Action at the Pulverizing Services Site in Moorestown, New Jersey. The site was a 24 acre former pesticide processing facility with multiple areas of concern contaminated with DDT and related chlorinated pesticides. Tasks included the removal of over 15,000 cubic yards of pesticide contaminated soil, wetlands restoration (3 acres), building demolition, remedial investigation, placement of over 30,000 cubic yards of backfill, and general site restoration. Total project value exceeded \$3 million.

**POTTSVILLE MGP SITE REMEDIATION****PPL ELECTRIC UTILITIES**

Senior Project Manager / Environmental Engineer for Interim Remedial Actions at a former MGP facility in Pottsville, Pennsylvania. Tasks included excavation and disposal of over 17,000 tons of coal tar residuals and contaminated soil, pumping and treatment of contaminated groundwater, backfilling, and general restoration. Excavation also required locating and cleaning five subsurface vessels including two large former gas holders. All remediation activities on the large gas holders were performed inside a temporary sprung structure equipped with an air emissions treatment system. All work was performed with strict environmental controls for odor, dust, and vapor emissions to protect nearby residents.

**KENTUCKY AVENUE WELLFIELD INDUSTRIAL DRAINAGEWAY****VIACOM, INC.**

Project Manager for Interim Remedial Measures at the Kentucky Avenue Wellfield site in Horseheads, New York. The project goals were to remove PCB and cadmium contaminated sediment from an industrial drainage streambed, banks, and pond. Tasks included design and operation of a 6,000 gpm stream diversion system with multiple pumps and 2,000 feet of 16" HDPE fusion welded piping, mechanical dredging of over 2,000 cubic yards of sediment from the stream and pond, chemical stabilization of cadmium containing sediments, and restoration of natural stream features and wetlands.

**TROY MGP SITE - FORMER GAS HOLDER DECOMMISSIONING****NATIONAL GRID USA**

Project Coordinator for the cleaning and decommissioning of a 60' diameter, above-ground gas holder containing a mixture of water, petroleum, coal tar wastes, and large debris. Project tasks included pumping out approximately 200,000 gallons of liquids (including pumpable coal tar), removal of residual solids and debris, and decontamination and demolition of the steel gas holder walls, superstructure, and base. Related work included the excavation and decommissioning of a large purifier box, closure of two subsurface valve boxes, and general site restoration including paving over the former holder base.

**HARBOR POINT MGP SITE - SEWER CLEANING & INSPECTION****NATIONAL GRID USA**

Project Manager for a sewer cleaning project at Niagara Mohawk's Harbor Point MGP site in Utica, NY. Tasks included the isolation and cleaning of 1,600 feet of 18" and 36" storm sewer piping containing coal tar residuals, water, and sediment. Due to the water treatment restrictions, the sewers were cleaned manually utilizing vacuum truck removal of all waste materials. Liquids were separated and pre-treated for particulates, oil, and grease prior to discharge at the on-site WWTP. Sediment and coal tar sludge were solidified with cement kiln dust and stockpiled on-site for subsequent disposal by NMPC. Final inspections were performed with a remote video system.

**GE LEBANON – PLANT DECOMMISSIONING****G.E. ENVIRONMENTAL SYSTEMS**

Project Manager for a two-year, \$3MM facility decommissioning and dismantlement at General Electric's Environmental Services division in Lebanon, Pennsylvania. Work areas included several production buildings with tools, equipment, materials, and building surfaces requiring decontamination. Primary contaminants were PCBs, lead, and other heavy metals. Tasks included PCB decontamination, confirmatory sampling, waste disposal, asbestos abatement, lead abatement, structural demolition, soil excavations, groundwater investigation, and concrete scarification.

**DEAN BLODGETT**  
**SITE SUPERINTENDENT**



**PROFESSIONAL EXPERIENCE:**  
32 Years of Construction & Environmental Contracting

**REGISTRATIONS / CERTIFICATIONS:**  
OSHA 40 Hour HAZWOPER  
Red Cross First Aid & CPR

**EDUCATION:**  
Construction Management  
  
Hudson Valley Community College, 1979  
BOCES – Building Trades, 1977

**PROFESSIONAL HISTORY**

**D.A. COLLINS ENVIRONMENTAL SERVICES / D.A. COLLINS CONSTRUCTION** **1999-PRESENT**  
Project Superintendent for Heavy/Highway construction projects and environmental remediation projects valued up to \$55MM. Typical projects include MGP remediation, landfill capping, steel bridge restoration, concrete structures, sheeting and shoring, marine construction, and hydroelectric construction. Responsible for maintaining safety and productivity on the jobsite, coordinating work schedules, and managing project budgets.

**SHULTS COMPANIES** **1996-1999**  
Project Manager & Estimator for various bridge and highway rehabilitation. Duties included project management, budgeting, engineering support services, construction quality control, operations performance evaluations, project reporting.

**D.A. COLLINS COMPANIES** **1986-1996**  
Project Superintendent for Heavy/Highway construction projects a valued up to \$20MM. Typical projects steel bridge restoration, concrete structures, sheeting and shoring, marine construction, and hydroelectric construction. Responsible for maintaining safety and productivity on the jobsite, coordinating work schedules, and managing project budgets.

**SJ GROVES/ATKINSON** **1979-1986**  
Quality Control Manager for various bridge and highway rehabilitation valued up to \$72MM. Responsibilities include quality control testing on concrete, rebar and other construction CQA inspections.

**PROJECT EXPERIENCE**

**OIL TERMINAL NAVIGATIONAL DREDGING** **APEX OIL**  
Project Superintendent for a \$1.2MM dredging project comprising of two separate oil terminals in the Port of Albany area, each requiring 1,400 CY and 5,000 CY of sediment removal. Due to low level PCB impacts in the sediments, both terminals were mechanically dredged using DAC’s mobile dredge cell concept and a CableArm environmental clamshell. Dredge sediments were transport to the Glenmont terminal for offloading and management. Class B sediments were recycled on-site in a state approved fill placement area. Class C sediments were shipped off-site for landfill disposal.

**TROY MGP AIR PLENUM** **NATIONAL GRID USA**  
Project Director for a \$1.7MM remediation at a former MGP plant site consisting of the demolition and cleanout of approximately 900 LF of air plenum tunnel structure. Demolition including concrete breaking followed by removal of the brick arch ceilings of each tunnel. Cleanout required dewatering of the tunnel followed by in-situ stabilization of pure coal

tar material using WasteLock polymer. Over 1,400 CY of pure coal tar was removed from the air plenum. The plenum was then fill with flowable fill concrete and a surface treatment.

**BOUCHARD JUNKYARD****NYS DEC**

Project Superintendent for a \$9MM soil excavation and disposal project in New Lebanon, New York. Project scope included site clearing and preparation on a 17-acre mixed use rural site, excavation and disposal of PCB contaminated soil, and site restoration. Excavation of TSCA and non-TSCA regulated soils required removal of over 41,000 CY of contaminated soil and disposal of 59,000 tons of non-TSCA soil and 16,000 tons of TSCA soil. Additional work included specialty excavations in wetlands areas, on residential and commercial properties, and in close proximity to State Route 20. Site restoration included a similar volume of imported fill and topsoil and several hundred tree and shrub plantings both within the wetlands and on the residential / commercial properties.

**34 FREEMAN'S BRIDGE ROAD****NYS DEC**

Project Superintendent for a \$22MM soil remediation and on-site thermal treatment project in Glenville, New York. Project scope elements included removal and treatment/disposal of over 99,000 cubic yards of Non-TSCA and TSCA soil and debris, and site restoration. The excavation plan called for a complicated 50'x50' grid system of excavations in 2' increments to terminal depths of 6-9' below grade. Excavation grids typically contained a combination of both TSCA and non-TSCA layers were then segregated for treatment or disposal. Excavations also frequently encountered drums with unknown wastes that required special handling. Non-TSCA soils (45,000 CY) were thermally treated in ESMI's mobile thermal treatment plant where all organic contaminants (PCBs, VOCs, SVOCs) were destroyed. Approximately 33,000 tons of TSCA soil and debris were shipped to an off-site TSCA landfill for disposal. An additional 21,000 tons of non-TSCA debris (from screening) was also shipped to a non-hazardous landfill.

**SPA STEEL MGP REMEDIATION****NATIONAL GRID**

Project Superintendent for a \$900,000 MGP remediation in the City of Saratoga Springs, New York. Scope of work included the construction of a 'cap and containment' design for coal tar impacts occurring at >25' depth adjacent to, but outside of, an existing sheetpile containment. Tasks included pre-excavation and utility abandonment, installation of over 3,000 SF of watertight sheeting, installation of grout columns for sheetpile tie-ins, and construction of all cap components. The cap components included geocomposite drainage, 30-mil PVC liner, perimeter trench drains, monitoring wells, and one extraction well. All work was performed in a high profile environment with close proximity to both public commercial and residential facilities.

**WATER ST. MGP, TROY AREA 4****NATIONAL GRID**

Project Superintendent for a \$17MM+ remediation of a former coal tar disposal site located on the shoreline of the Hudson River in Troy, New York. Project scope elements included removal and disposal of over 90,000 cubic yards of coal tar and soil, removal of tar weeps in the river tidal zone, construction of riverside retaining walls, and construction of a six (6) acre engineered RCRA cap system (16 oz. cushion layer, 40 mil. LLDPE, tri-planar geocomposite, geogrid). Work along the shoreline requires installation and maintenance of over 3,000' of turbidity curtain plus additional controls during removal of tar weeps from the tidal river. Construction of the retaining walls included both soldier pile walls and gabion walls.

**GE NEWELL ST. AREA II****G.E. POWER SYSTEMS**

Project Superintendent for a \$2MM soil excavation and capping project at one of GE's PCB remediation sites in Pittsfield, Massachusetts. Scope of work included the excavation and removal of over 19,000 CY of PCB contaminated soil and debris located in a site directly adjacent to the Hoosatic River. Excavation of debris included the removal and overpacking of several hundred buried drums containing various wastes. Other excavation areas contained thousands of PCB capacitors which were segregated from the soil with a vibratory screen and consolidated in drums for separate disposal. Site restoration included the construction of a 3.5 acre engineered cap including 16 oz. cushion fabric, 60 mil. LLDPE liner, and geocomposite drainage net. Other restoration work included extensive plantings and seedings in accordance with a natural resource restoration plan. This project was performed in close proximity to residential properties with strict oversight by multiple EPA officials.

**RICHARDSON HILL ROAD LANDFILL****HONEYWELL & AMPHENOL**

Project Superintendent for a \$2.5MM landfill capping (over 7 acres) and wetland restoration project located at the Richardson Hill Road Superfund site in Sidney Center, New York. Scope of work included construction of extensive stormwater controls for landfill runoff including sediment catch basins, rip-rap swales, and an extensive culvert system.

Wetland restoration required the installation of coir mattresses, coir fascines, turf reinforcement mats, and related erosion protection features along a ½ mile streambed. Landfill capping elements included the removal of over 6,000 cy of off-spec drainage sand already placed on top of an existing LLDPE liner, subgrade repairs & improvements, liner repairs, and installation of the final cap layers which included 34,000 SY of geocomposite drainage net, barrier soil (23,000 CY), topsoil, and erosion control blankets.

**KEITH R. CHADWICK**  
**HEALTH & SAFETY OFFICER**



**PROFESSIONAL EXPERIENCE:**

9 Years of Environmental Health & Safety and Remediation Oversight

**REGISTRATIONS / CERTIFICATIONS:**

OSHA 40 Hour HAZWOPER  
Hazardous Material Specialist  
Incident Communication Technician  
Confined Space Rescue

**PROFESSIONAL HISTORY**

**D.A. COLLINS COMPANIES**

**2005-PRESENT**

Health and Safety Officer (HSO) and Environmental Technician for various environmental remediation and general construction projects. Duties include daily enforcement and implementation of health and safety plans and programs, safety audits, job hazard analysis (JHAs), air monitoring (personal & community), environmental sampling, instrument calibration and maintenance, data collection and reporting, work permits, risk analysis, PPE selection, site control, and emergency response. Responsible for the selection, inventory, and maintenance of all safety equipment and materials including instrumentation, PPE, and emergency response materials. Provides assistance to the Project Engineers in technical and Regulatory matters.

**PROFESSIONAL SERVICES INDUSTRIES**

**2004-2005**

Environmental Technician II, specializing in Phase I and Phase II environmental site assessments. Including drafting reports, site reconnaissance, and sampling. Oversight of asbestos abatement projects including air monitoring, personal sampling and bulk material sampling.

**UNITED STATES COAST GUARD**

**1998-2004**

Petty Officer. While stationed at the USCG Communication Area Master Station Atlantic (CAMSLANT) as Health and Safety Petty Officer and, Supervisor of fellow Coast Guard members while on watch. Responsibilities include the security and integrity of classified material. Assigned as a Response Technician while stationed at the USCG Atlantic Strike Team (AST). Also provided oversight for the U.S. Environmental Protection Agency (EPA), which included oversight of contractors on Superfund sites and large oil spills.

**PROJECT EXPERIENCE**

**NEWBURGH MGP SEDIMENT REMEDIATION**

**CENTRAL HUDSON GAS & ELECTRIC**

Health & Safety Officer (and Technical Specialist) for a \$16MM sediment remediation on the Hudson River in Newburgh, New York requiring the removal of over 23,000 CY of coal tar impacted river sediments with dredge prism depths ranging from 2' to 20' bg. Prior to dredging, an active 30" storm sewer and 48" STP discharge line were realigned around the site, and a 480 LF sheetpile barrier wall was installed along the shoreline. The barrier wall was a combination wall design using 60' king piles (W36x210) and 32-40' watertight sheets (PZC-13/18). During dredging water quality and turbidity were controlled using two technologies: DAC's mobile dredge cell system was used in the 'PAH Area' where the dredge prism was located furthest from the shoreline, while a more traditional sheetpile containment wall (900 LF) was installed around the nearshore 'NAPL Area' where sediment removal depths and contaminant levels were most challenging. Following dredging, the NAPL area was backfilled with imported gravel. The final phases included the installation of a NAPL collection trench system behind the barrier wall, using biopolymer slurry methods during installation of the drainage stone and piping. Waste management included an on-site 100' x 200' temporary fabric structure for storage and containment prior to off-site disposal of over 45,000 tons of sediment and debris.



**ST. LAWRENCE RIVER REMEDIATION PROGRAM****ALCOA**

Health and Safety Officer for a \$4.5MM PCB and PAH subaqueous cap installation over 6 acres within the St. Lawrence River in Massena, New York. Project scope included constructions of a subaqueous cap system over 6 acres in area, excavation/dredging of approximately 500 cubic yards of sediment within four near-shore cell performed from land using a long-stick excavator and standard digging buckets. The capping work was performed using DAC's patented mobile capping cell (MCC) technology, allowing for discrete placement of subaqueous cap layers with precision control on horizontal limits and cap layer thicknesses. The near-shore dredging and capping was performed using traditional mechanical methods.

**LUZERNE ROAD PCB REMEDIATION****NYS DEC**

Health and Safety Officer for a \$25MM remediation of a PCB impacted soil located in Queensbury, NY. Scope included excavation of approximately 80,000 CY of PCB contaminated soils, which included segregation of TSCA and Non-TSCA soils at various depths within the excavation grids. The non-TSCA soils were treated in a mobile direct heated Thermal Desorption Unit and the TSCA soils were shipped off-site to a TSCA permitted landfill. Tasks included enforcement and monitoring the HASP, personal and community air monitoring compliance, calibrated and maintained monitoring equipment, sampled and tracked multiple waste streams, and characterized and assessed risks of work activities. Community air monitoring included monitoring for PCB (EPA method TO-10A) and dust (PM<sub>10</sub>) collected at the four stationary sampling locations and personal air monitoring.

**SHANDAKEN TUNNEL INTAKE CHANNEL DREDGING****NYCDEP**

Health and Safety Officer for a \$6.6M project to perform maintenance dredging of approximately 5,000 cubic yards of sediment and debris from the Schoharie Reservoir to improve water transmission into the Shandaken Tunnel. Accumulated sediments in the channel were removed mechanically through the utilization of a crane mounted on segmental floats, and transport barges shuttled material in containers which were then off-loaded to trucks with a large crane on shore. Hydraulic dredging equipment was also used by divers to remove sediments from a bar rack attached to the intake chamber building. Dredged material was trucked upland to designated stockpile areas, which were prepared for passive dewatering and infiltration. New bar racks were also fabricated and installed within two weeks after dredging concluded, in order to reopen the Shandaken Tunnel sluice gates. Safety duties included HASP oversight of the dredge, earthwork and dive crews, daily safety reporting, coordination with DEP safety department personnel, and related tasks. Additional duties included technical assistance with the digital positioning systems utilized on the dredge.

**34 FREEMAN'S BRIDGE ROAD****NYS DEC**

Health and Safety Officer / Quality Control Officer for a \$20MM remediation of a PCB impacted soil located in Glenville, NY. Scope included excavation of approximately 69,000 CY of PCB contaminated soils, which included segregation of TSCA and Non-TSCA soils at various depths within the excavation grids. Excavation soils were stockpiled for pre-processing, which included screening, crushing and amending with LKD. After pre-processing the non-TSCA soils were treated in a mobile direct heated Thermal Desorption Unit and the TSCA soils were treated in a mobile indirect heated Thermal Desorption Unit. Tasks included overseeing several Safety Technicians who enforced and monitored HASP and personal and community air monitoring compliance, calibrated and maintained monitoring equipment, sampled and tracked multiple waste streams, and characterized and assessed risks of work activities. Site engineering support included CQC inspections, report generation, record keeping, cost tracking, quantity calculations and analytical sampling coordination. Community air monitoring included monitoring for PCB (EPA method TO-4A), PAH (EPA method TO-13A), VOC (EPA method TO-15) and dust (PM<sub>10</sub>) collected at the four stationary sampling locations and personal air monitoring for metals (including lead and mercury), respirable dust, PCB and VOC (EPA method TO-17).

**RICHARDSON HILL ROAD LANDFILL****HONEYWELL & AMPHENOL**

Health & Safety Officer for a \$2.5MM landfill capping (over 7 acres) and wetland restoration project located at the Richardson Hill Road Superfund site in Sidney Center, New York. Scope of work included construction of extensive stormwater controls for landfill runoff including sediment catch basins, rip-rap swales, and an extensive culvert system. Wetland restoration required the installation of coir mattresses, coir fascines, turf reinforcement mats, and related erosion protection features along a ½ mile streambed. Landfill capping elements included the removal of over 6,000 cy of off-spec drainage sand already placed on top of an existing LLDPE liner, subgrade repairs & improvements, liner repairs, and installation of the final cap layers which included 34,000 SY of geocomposite drainage net, barrier soil (23,000 CY), topsoil, and erosion control blankets. Tasks included enforced and monitored HASP and air monitoring compliance, calibrated and maintained monitoring equipment, sampled and tracked multiple waste streams and characterized and

assessed risks of work activities. Tasks included enforced and monitored HASP and air monitoring compliance, calibrated and maintained monitoring equipment, sampled and tracked multiple waste streams and characterized and assessed risks of work activities.

**NYACK MGP – UPPER TERRACE & HUDSON VISTA ISS****ORANGE & ROCKLAND UTILITIES**

Health & Safety Officer for a \$4.3MM remediation of a former MGP located in the Village of Nyack, New York. Scope of work included in-situ solidification (ISS) of approximately 2,500 CY of coal tar impacted soil and the excavation and disposal of over 27,000 tons of impacted soil and debris. The ISS was performed with a vertical rotary auger with over 200 individual columns ranging in depth from 7-19' below grade. Excavation and disposal was largely performed while inside a 132' x 248' temporary fabric structure with three TIGG NB-20 vapor control systems. Demolition and debris handling included the removal of several holder bases and related MGP subsurface structures. All work was performed in close proximity to the Hudson River, high density residential properties, and high value commercial properties with close scrutiny by the Village of Nyack. Daily operations were very successful in maintaining strict compliance with the site traffic control plan and odor suppression plan. Tasks included enforced and monitored HASP and air monitoring compliance, calibrated and maintained monitoring equipment, sampled and tracked multiple waste streams and characterized and assessed risks of work activities. Due to the work performed under the temporary fabric structure each employee was closely monitored using a personal air monitoring which were analyzed for benzene and the work area was monitored using air monitoring station, consisting of Photo Ionization Detectors (PIDs) to detect Volatile Organic Compounds (VOCs) Benzene monitoring with Dräger tubes, and Dust Traks to detect ambient dust.

**NEWELL STREET AREA 2****GENERAL ELECTRIC**

Health and Safety Officer for a \$2MM remediation of a PCB impacted soil located in Pittsfield, MA. Coordinated efforts with client, Engineer, USEPA and other regulatory agencies. Enforced and monitored HASP and air monitoring compliance, calibrated and maintained monitoring equipment, sampled and tracked multiple waste streams, and characterized and assessed risks of work activities. Site engineering support included CQC inspections, report generation, record keeping, cost tracking, quantity calculations and analytical sampling coordination. Tasks included enforced and monitored HASP and air monitoring compliance, calibrated and maintained monitoring equipment, sampled and tracked multiple waste streams and characterized and assessed risks of work activities.

**SCENECTADY, NY – PHASE I ENVIRONMENTAL SITE ASSESSMENTS****SCENECTADY COUNTY**

Environmental Technician conducting several site recons on properties that the County of Schenectady was planning to purchase. Conducted site sampling as needed if the site required further investigation. Developed closeout reports and summary findings.

**SCENECTADY, NY – BUILDING 49****GENERAL ELECTRIC**

Environmental Technician responsible for extensive sampling program for numerous pieces of equipment intended to be either reused, sold, or scrapped due to a building demolition.

**HUDSON RIVER PCB DREDGING INVESTIGATION****GENERAL ELECTRIC**

Environmental Laboratory Technician assisting with lab processing of sediment core samples. Categorized the type and nature of sediment found in the samples.

**WASHINGTON, DC – ANTHRAX CASES****US DEPARTMENT OF HOMELAND SECURITY**

Petty Officer assisted the USCG and other government agencies to establish an Incident Command System during Anthrax decontamination response. Responsible for contractor oversight and air sampling during decontamination.

**NEW YORK CITY, NY – GROUND ZERO****US DEPARTMENT OF HOMELAND SECURITY**

Petty Officer assisting the USCG and other government agencies to establish an Incident Command System. Performed air monitoring and sampling under the direction of USCG NSF.



**Laura Stone**  
**PROJECT ENGINEER**



**PROFESSIONAL EXPERIENCE:**

5 Years General / Environmental Contracting

**REGISTRATIONS / CERTIFICATIONS:**

I.E. – Intern Engineer  
OSHA 10-Hour Training Course  
OSHA 40-Hour HAZWOPER  
NYSDEC Erosion & Sediment Control Training

**EDUCATION:**

B.S. Environmental Engineering  
Rensselaer Polytechnic Institute, 2007

**PROFESSIONAL HISTORY**

**D.A. COLLINS CONSTRUCTION COMPANY**

**2007 - PRESENT**

Project Engineer responsible for cost estimates, proposal generation, preparation and maintenance of project schedules, submittals, subcontract agreements / negotiations, vendor coordination, and job cost analysis. Projects include but are not limited to bridge and heavy highway construction / rehabilitation, highway reconstruction / resurfacing, and environmental remediation projects.

**PROJECT HISTORY**

**EMERGENCY BRIDGE REPAIR CONTRACT REGIONS 1-10**

**NYSDOT**

Project Manager for a \$4M project consisting of multiple emergency bridge repairs and temporary bridge installations, in particular following destruction caused by Hurricane Irene and Tropical Storm Lee. Within the span of two months, 10 temporary bridges were erected and 1 complete bridge demolition and replacement was completed. Multiple bridges were underway at any given time and the project sites were spread over 6 counties. Temporary bridges were a challenge because it was a requirement to build them off-line to ensure they were out of the way for construction of future permanent bridges. This created access and obstruction issues. For each one, abutments were built with crane mats, followed by launching of temporary bridge sections. They were then backfilled and graded so they were travelable. The complete bridge replacement site involved carefully removing the old damaged bridge, driving piles, pouring new abutments, setting steel girders and precast panels, followed by paving and guide rail. Extensive documentation was required for all aspects of work.

**NEWBURGH MGP SEDIMENT REMEDIATION**

**CENTRAL HUDSON GAS & ELECTRIC**

Assistant project engineer responsible for daily reporting and documentation for a \$16M sediment remediation on the Hudson River in Newburgh, New York requiring the removal of over 23,000 CY of coal tar impacted river sediments with dredge prism depths ranging from 2' to 20' bgs. Prior to dredging, an active 30" storm sewer and 48" STP discharge line were realigned around the site, and a 480 LF sheetpile barrier wall was installed along the shoreline. The barrier wall was a combination wall design using 60' king piles (W36x210) and 32-40' watertight sheets (PZC-13/18). During dredging water quality and turbidity were controlled using two technologies: DAC's mobile dredge cell system was used in the 'PAH Area' where the dredge prism was located furthest from the shoreline, while a more traditional sheetpile containment wall (900 LF) was installed around the nearshore 'NAPL Area' where sediment removal depths and contaminant levels were most challenging. Following dredging, the NAPL area was backfilled with imported gravel. The final phases included the installation of a NAPL collection trench system behind the barrier wall, using biopolymer slurry methods during installation of the drainage stone and piping. Waste management included an on-site 100' x 200' temporary fabric structure for storage and containment prior to off-site disposal of over 45,000 tons of sediment and debris.

**D.A. COLLINS COMPANIES**  
**D.A. COLLINS CONSTRUCTION COMPANY**

**SCHOHARIE COUNTY – EMERGENCY REPAIR OF ROAD & STRUCTURES****SCHOHARIE COUNTY**

Project Manager for a \$627,000 emergency project involving repairs following the storm events of Irene and Lee in three different locations in Schoharie County. One damaged bridge was demolished and the superstructure removed from a stream, one bridge required jacking and miscellaneous repairs, and one section of roadway required extensive repairs due to large washouts, cleanup of downed trees and other debris was performed and a stream was relocated to its original location and repaired. Over 18,000 tons of material was imported to repair the washouts. Documentation was critical on this project due to the emergency nature of the project and FEMA involvement.

**ON-DEMAND STEEL REPAIRS TO DAMAGED & DETERIORATED BRIDGE, SIGN, AND CANAL, SYRACUSE DIVISION****NYSTA**

Project Manager for a \$100,000+ project involving miscellaneous steel and other repairs to bridge, sign, and canal structures in the Syracuse division of the NYSTA. A major component of this project was repairing a breach in the Old Erie Canal at the Butternut Aqueduct along with a temporary cofferdam and associated improvements which contained multiple design-build elements.

**ROUTE 28A ROAD REALIGNMENT & RECONSTRUCTION****NYCDEP**

Assisted project Engineer on a \$15M project including a \$6M redesign change order consisting of realigning 2.5 miles of a two-lane roadway along the south side of the Ashokan Reservoir in Ulster County. Responsible for quantity takeoff, three-dimensional computer modeling of the entire site, support and updates for GPS-equipped machines and devices, and assistance with miscellaneous daily activities. The owner was required to institute a major redesign of this project which called for over 100,000 cubic yards of excavation material, and over 50,000 cubic yards of fill, in order to reconstruct major portions of the road. Scope also included full depth roadwork and shoulder reconstruction, installation of concrete cross-culverts and stormwater detention basins, underdrain, slope/bank stabilization and ditch reshaping. Two intersections were reconstructed, along with a 1-acre Wetland Mitigation site on Route 28 as a requirement by the Army Corps of Engineers.

**34 FREEMAN'S BRIDGE ROAD****NYS DEC**

Assisted Project Engineer on a \$22M soil remediation and on-site thermal treatment project in Glenville, New York. Project scope elements included removal and treatment/disposal of over 99,000 cubic yards of Non-TSCA and TSCA soil and debris, and site restoration. The excavation plan called for a complicated 50'x50' grid system of excavations in 2' increments to terminal depths of 6-9' below grade. Excavation grids typically contained a combination of both TSCA and non-TSCA layers were then segregated for treatment or disposal. Excavations also frequently encountered drums with unknown wastes that required special handling. Non-TSCA soils (45,000 CY) were thermally treated in ESMI's mobile thermal treatment plant where all organic contaminants (PCBs, VOCs, SVOCs) were destroyed. Approximately 33,000 tons of TSCA soil and debris were shipped to an off-site TSCA landfill for disposal. An additional 21,000 tons of non-TSCA debris (from screening) was also shipped to a non-hazardous landfill.

**SPA STEEL MGP REMEDIATION****NATIONAL GRID**

Assisted Project Engineer on a \$900,000 MGP remediation in the City of Saratoga Springs, New York. Scope of work included the construction of a 'cap and containment' design for coal tar impacts occurring at >25' depth adjacent to, but outside of, an existing sheetpile containment. Tasks included pre-excavation and utility abandonment, installation of over 3,000 SF of watertight sheeting, installation of grout columns for sheetpile tie-ins, and construction of all cap components. The cap components included geocomposite drainage, 30-mil PVC liner, perimeter trench drains, monitoring wells, and one extraction well. All work was performed in a high profile environment with close proximity to both public commercial and residential facilities.

**GE HUDSON RIVER SEDIMENT REMEDIATION CONTRACT 6  
RAIL CAR LOADING OPERATIONS****MHF-LS/GENERAL ELECTRIC**

Generated complex project schedule for the rail car loading operations at the GE Hudson River Dewatering Facility located in Fort Edward, NY. MHF-LS contracted D.A. Collins Construction Co., Inc. to load approximately 3,600 rail cars with dredge and processed sediment from the Hudson River. The project scope of work included the installation of poly liners in each rail car and loading 30-40 rail cars per day with dredge sediment.

## **EXHIBIT 3**

### ***Subcontractor Qualifications***

Our strong track record for performance and safety enable us to recruit the most qualified employees, many of which remain at LVI their entire career. We provide extensive training in workplace operations and safety and maintain incentive programs for all levels of operating management with performance criteria keyed to on-schedule performance, no loss-time injuries and no environmental violations. Our corporate culture fosters teamwork, respect and constant improvement. The result is stability, continuity and exceptional work quality. We take great pride in the personal service we provide. We don't just do business – we build relationships.

### Self Performing is Cost Effective

LVI performs our work with our own highly trained employees. By eliminating labor suppliers, we provide higher quality work in compliance with your specifications and requirements.

Our health and safety training program benefits from stability in our workforce. Cross-training in more than one specialty trade helps provide greater flexibility in staffing projects to peak performance. LVI's staff of approximately 3,000 professionals and qualified field personnel can meet your current as well as unanticipated needs.

### One of the Largest Fleets of Heavy Equipment

LVI owns one of the largest fleets of heavy equipment in the industry, significantly reducing downtime on the project site. We also own the largest fleet of sophisticated ultra-high reach (UHR) demolition equipment in North America for demolition of tall structures in confined spaces, making LVI the only choice for the most challenging jobs.

### Pioneering Innovative Technology

LVI is a leader in the use of innovative technologies for the benefit of our clients and the industry. LVI piloted the use of high pressure water jets to more efficiently remove asbestos.

LVI also employs a sophisticated, real-time, fully integrated computer cost accounting system to monitor labor, equipment, supplies, subcontractors and other project costs daily with perpetual inventory identifying in detail all consumables and small tools used on every project.

Additionally, LVI installs biometric time clocks for its payroll system on projects. These clocks minimize payroll errors and improve jobsite security. All field worker time is recorded and transmitted via satellite to our payroll center. It provides accurate cost accounting information and is a better method of tracking time on the job in the field. This is supplemented by issuance of debit cards enabling LVI to deliver payroll to its field personnel in a paperless, efficient and secure manner. LVI is the only specialty contractor of its kind that has incorporated this technology into its business operations.



### Overview

LVI Services Inc. (LVI) is recognized as a leader in demolition and environmental remediation services. LVI was founded in 1986 and has a 25-year stable history of success in our industry. LVI has an international network of 35 offices, average annual revenues in the last five years over \$400 million and bonding capacity in excess of \$250 million. Engineering News Record (ENR) has ranked LVI as the #1 abatement contractor in the US since 1999, and we have continually been recognized as one of the largest demolition & wrecking contractors. LVI was also ranked as the 5<sup>th</sup> largest All-Environmental firm in the US by ENR.

#

### Project Services

LVI has completed over 25,000 individual projects worth over \$1.5 billion in the last five (5) years. We specialize in some of the most complex projects for industrial, nuclear, governmental and commercial clients. We have at our disposal one of the largest fleets of heavy equipment in the industry, and we own the largest fleet of sophisticated ultra-high reach (UHR) demolition equipment in North America. Our project services include:

- Structural and Interior Demolition
- Hazardous Material Abatement
- Hazardous Waste Management & Hauling
- Nuclear Decontamination & Decommissioning
- Biological and Chemical Decontamination
- Mold Remediation
- Infection Control
- Fireproofing
- Design-Build General Construction
- Radiation Portal Monitor (RPM) Installation
- Land Port of Entry (LPOE) Design-Build Construction
- Emergency Response
- Disaster Recovery & Clean-Up
- Fire, Water & Smoke Damage Restoration
- Temporary Housing & Facilities
- Millwrighting & Rigging



We are routinely asked to perform our services in close proximity to operating units without disrupting continued operations. We have the experience and talent to develop detailed work plans to safely and systematically dismantle and abate equipment and structures while minimizing vibrations and other impacts to surrounding operations.

#

### People & Mobilization Power

The backbone of our success is our people. Collectively, our management team brings more years of experience in our field than any of our competitors. In total, LVI has a growing team of 2,500 of the most qualified and highly-trained professionals in the industry, with rapid mobilization capacity of an additional 3,000 or more operations and field staff to meet any emerging need.

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## About Us

### Company Overview

Founded in 1986, LVI Services' mission is to provide the most cost-effective, schedule-efficient, highest-quality environmental remediation and facility services available nationwide and to exceed client expectations.

With turnkey offerings from lead paint and asbestos abatement to complete demolition, LVI has worked with some of the largest companies in the country on their facility service needs. We are also able to be on site quickly after disaster strikes with personnel and equipment to get our clients' businesses back online as rapidly and with as little business interruption as possible.

Our people have decades of combined professional experience that is unmatched by anyone else in the industry.

For information on our specific product offerings, the industries we serve or our executive team, please visit the appropriate section on this Web site or contact us at 1-800-283-2933.



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## Our Services: Asbestos Abatement

### The Nation's Top Asbestos Abatement Contractor.

No other company has the history and experience that LVI brings to the table in the asbestos abatement market, and we enjoy a record of compliance in this highly regulated industry. We have more than 50 million hours of removing asbestos over the past 20 years and have performed more than 17,700 asbestos abatement projects just since 2000.

Asbestos abatement has been the hallmark of our service offerings throughout our history. We've worked on a variety of large-scale projects in government buildings, schools, hospitals, hotels, industrial facilities and more.

We have a proven track record in the proper abatement of asbestos-containing materials, while keeping our workers safe with exceptionally low experience modification rates (EMR) and OSHA incident rates to back up our work and our commitment to health and safety on the job. In partially occupied buildings, we perform our services while assuring the safety of other building occupants.

In fact, from 2001-2008, *Engineering News-Record*, the leading construction magazine in the United States, ranked LVI as the top asbestos abatement contractor in the country.



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## Asbestos Abatement Project Descriptions

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### Sunoco Refinery, Philadelphia, PA

Sunoco came to LVI with a demolition and decommissioning project at a Philadelphia refinery. Work began in January 2006 and will run through most of this year. Utilizing LVI's specialized equipment, the crew is performing asbestos abatement work and removing more than 25,000 linear feet of piping, amidst other equipment in the refinery that is still in use.

Prior to this project, the refinery had never undertaken a demolition of this magnitude, and all other demolition work had been performed by mechanical contractors, which cost the company much more because of the methods employed.

LVI's skilled operators have worked more than 50,000 man hours on this project without a single OSHA recordable incident or regulatory compliance violation.

Major planning has been required throughout the demolition to ensure that everyone on site understands each aspect of the job. Because of the attention to detail and breadth of experience that LVI brings to the table, the project has been extremely successful to date.

### BHP Inc. Copper Smelter Smokestack, San Manuel, AZ

Often beginning at sunrise, work at this remote location began in September 2006. The job site, formerly a large copper smelting operation, was mostly demolished except for two stacks. Each of the stacks is 510 feet tall – the equivalent of 50-story buildings – making decontamination before demolition no small feat.

When thinking of the southwestern U.S., weather delays for a project may seem unlikely. But high winds, lightning and even rain have been the biggest challenges LVI has faced on this job.

To get the work done quickly and effectively, LVI is using its own high-pressure cleaning equipment and an access plan that utilizes mast climbers in lieu of rigging swing stages.

BHP brought in safety experts from as far away as South America to review LVI's plan of operation, all of whom were impressed with LVI's on-site management team and the quality of work. Because of the high-risk nature of the work, extreme safety measures were put into place, including arrangements with the Arizona Department of Safety to have a rescue helicopter on site within 10 minutes if required.

### Bank One Plaza, Chicago, Illinois

LVI's ability to provide an integrated service offering and meet an aggressive time schedule was key to being awarded the contract to perform interior demolition, asbestos abatement, and re-fireproofing work on this major project. The project consisted of:

- Total interior demolition, asbestos abatement and replacement of structural fireproofing on 19 floors, ranging from 28,000 feet to 46,000 square feet.
- Simultaneous work on multiple floors requiring upwards of 100 workers per shift.
- Removal of all interior partition walls and all mechanical, electrical and plumbing components.
- Removal of an average of 4,800 to 5,500 bags of asbestos-containing fireproofing.

Following interior demolition and asbestos abatement, LVI replaced the structural fireproofing. Several floors required an accelerated around the clock work schedule (at the owner's request), with multiple crews performing the application and cleanup activities. As a precaution, extra fireproofing equipment and material remained on site to minimize the possibility of work stoppage resulting from equipment failure. The accelerated schedule also created the condition of dealing with excessive moisture buildup. To address this issue and increase cure time, LVI installed negative air units to both exhaust and circulate air. All floors met or exceeded the schedule requirements.

### Newton Auditorium, Denver, Colorado

LVI performed structural demolition, asbestos abatement and hazardous materials removal in this 80-year-old building, owned by the Denver Historical Society. Because it is a historic property, additional precautions and attention had to be paid to the job.

LVI's scope of work included:

- Interior demolition of all concrete post-tension slabs and walls.



- Proper shoring of the 150,000-pound trusses within the interior ceiling to allow dismantling in sections and avoid the collapse of the exterior perimeter wall.
- Shoring of the first-floor concrete slab from the basement level, allowing for strategic placement of a 150,000 pound excavator within the building.

Asbestos abatement included 26,600 square feet of asbestos containing plaster, 8,000 square feet of HVAC thermal system insulation, 17,000 square feet of drywall, 6,000 lineal feet of thermal system insulation, 10,000 square feet of spray-applied structural fireproofing, 10,000 square feet of VAT, and associated floor mastic.

The remaining asbestos was removed from hidden locations, along with all fluorescent light tubes, mercury vapor bulbs, PCB ballasts, PCB oil-filled transformers, and elevator hydraulic fluids throughout the facility.

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#### **Aladdin Hotel, Las Vegas, Nevada**

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- Liquidation of all furniture, fixtures and equipment.
- Abatement of approximately 500,000 square feet of asbestos materials.
- Complete demolition of approximately two million square feet of casino, hotel and convention buildings, including implosion of the main hotel tower.

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#### **The Mall at 163rd Street, Miami, Florida**

As part of the redevelopment of this retail property, LVI performed asbestos abatement, interior demolition and demolition of structures. The project consisted of:

- Demolition of one three-story parking garage of approximately 216,000 square feet, one two-story parking garage of approximately 325,000 square feet, and a four-story Mervyn's department store of approximately 288,000 square feet and approximately 74,000 square feet of common areas.
- Interior renovation of the existing Burdines Department Store.
- Removal of approximately 77,000 square feet of asbestos-containing fireproofing, 7,022 linear feet of pipe insulation, 4,848 square feet of transite material (fireproofing, composite made of asbestos and cement) and approximately 7,558 square feet of floor tile and mastic (a high-strength, adhesive compound)

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#### **Pentagon Renovations, Washington, DC**

LVI performed complete asbestos and lead-based paint abatement and demolition of all mechanical, electrical, communication, plumbing systems and interior architectural and structural finishes throughout 1 million square feet of Wedge 2 of the Pentagon, completing the work one and a half months ahead of schedule. LVI is currently performing work on Wedge 3, utilizing both mechanical and manual demolition and abatement methods while managing more than 200 laborers. Work on Wedge 4 is scheduled to begin in the fall of 2006, and Wedges 3, 4 and 5 are scheduled to be completed by 2012 or sooner.

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#### **Junipero Serra State Office Building, Los Angeles, California**

LVI abated hazardous materials from the Junipero Serra State Office Building consisting of nine floors of offices, a full basement and a penthouse that contained the building mechanical systems. Total area of building is approximately 550,000 square feet.

The work performed included the abatement of:

- Asbestos-containing materials (fireproofing, floor tile/mastic/mechanical systems insulation, roofing systems, plaster and drywall mud).
- Lead-based paint materials (ceramic tile, paint).
- Mercury-containing materials (switches, thermostats, and light tubes).
- Polychlorinated biphenyl (PCB)-containing materials (lighting ballasts)

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#### **Yale University, New Haven, Connecticut**

Each year, Yale University chooses one of its residential colleges for major renovation, including installation of modern conveniences and utilities, safety equipment and handicap-accessible features. In 2005, LVI was awarded a contract for asbestos abatement, interior demolition and select structural demolition of Trumbull College, a 118,000-square-foot residential complex consisting of several interconnected buildings ranging from three to five stories.

Special care had to be taken because of the historical significance of the buildings, but the work was on a very tight schedule to allow the buildings to reopen for school in the fall. And, unforeseen circumstances also required change and flexibility on the part of the contractors.

LVI was also awarded the contract for Silliman College, Yale's largest ever renovation, with work beginning in May 2006. Based on LVI's success on other projects at Yale, LVI was awarded the entire contract for Silliman when originally the job was to be split between two firms.

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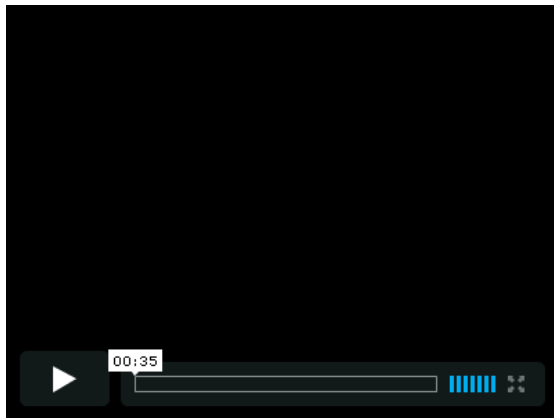
## Our Services: Demolition

### From Walls to Entire Buildings, LVI Can Tackle It

LVI offers total turnkey demolition services and has performed major demolition projects for Las Vegas resorts, Hollywood movie sets, industrial manufacturing and chemical plants, power plants, commercial facilities and more. Our state-of-the-art demolition equipment enables us to perform large-scale concrete cutting, crushing and separating, as well as steel cutting and equipment dismantling.

Our demolition experience ranges from selective interior/exterior demolition to the leveling of entire commercial building complexes. From knocking out interior walls to imploding buildings, LVI offers comprehensive demolition services and provides unequalled performance, safety and efficiency.

When the project involves the removal of all building structures, we will remediate the site of hazardous materials and remove all of the building improvements, including, where appropriate, the recycling of materials. The entire project will be performed by LVI, assuring our clients that the work will be completed on or ahead of schedule and in the safest and most cost-effective manner possible.



Video of Aladdin Casino demolition

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### Our Services: Project Descriptions

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- [Infection Control Project Descriptions](#) | [Mold Remediation Project Descriptions](#)
- [Additional Services Project Descriptions](#)

LVI Services | 150 West 30th Street | New York, NY 10001 | (212) 951-3660

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## Demolition Project Descriptions

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### Consolidated Edison, Manhattan, NY

The total dismantlement of Consolidated Edison's steam/electricity power plant in midtown was a phased demolition that began in 2002 and was completed in August 2007. The site of the plant posed the greatest logistical problems.

The 5-block Kips Bay, multi-building campus was densely constructed and squeezed between the FDR Drive on the east, First Avenue on the west and the Queens-Midtown Tunnel vents on the north with the tunnel running under the Con Ed property.

The first structures to be demolished were the 11-story office building and support structures. Dust control was a major consideration because these buildings contained significant amounts of asbestos – even in the caulking around the windows. The support structures, a switch house and frequency house, had to be dismantled very carefully. The roof was like that of a gymnasium. There was the potential for the walls to become unstable when a domed roof was removed.

The biggest challenge was during the last phase. Two 300-foot stacks once towered over the two 17-story power plants were dismantled in a very controlled demolition. Additionally, the walls of the power plants rose flush to the sidewalk boundary requiring hand demolition on these exposed walls to protect pedestrians, traffic and contiguous property.

Once the core machinery was visible, the final phase work began. After removing the PCBs and machine oil, the old generators were broken using machine power. The remaining pieces were extracted with specialized machinery.

### Philadelphia Convention Hall, Philadelphia, PA

The Convention Hall was part of a complex of buildings scheduled to be demolished to make way for new medical facilities associated with the University of Pennsylvania. Before demolition began in 2005, architecturologists, who specialize in architectural antiques and artifacts, excavated, salvaged and recycled many of the Art Deco-style architectural items from these early 1900s buildings.

The Convention Hall had a 200-foot lateral center height and a vast interior expanse. Implosion was not an option in this case due to the close proximity of Children's Hospital and University-owned buildings. A unique "hinging" process was developed to modify the domed structure for controlled demolition. A customized LRD 750 with a 160-foot boom was used to "snip" and dismantle the center span supports.

The LRD 750 has a near-tool mounted water cannon to reduce dust and to extinguish potential fire. It also has a mounted video camera to safely monitor demolition details from the ground. Dust and noise had to be kept to a minimum and pedestrian traffic could not be interrupted.

Large pieces of steel removed by the LRD were cut and sorted along with limestone and recyclables. To keep the site safe and productive, containers were regularly circulated throughout the site to continuously haul away debris.

The main roads around the site and the adjacent railroad remained open during demolition which was completed in January 2006.

### FAA Traffic Control Tower, Newark Airport, Newark, NJ

To modernize airport services and infrastructure, the FAA built a newer, taller control tower at Newark Airport. The "old" control tower, with a radar dome on the roof, was scheduled for demolition after asbestos abatement was completed.

While the old tower was structurally sound, the building was beginning to need roof repairs and other regular maintenance. Also, as the airport grew to meet the demands of the aviation industry, the old tower no longer offered traffic controllers a full view of the ground activity. In 2004 it was demolished while the airport maintained its active schedule.

Long reach demolition (LRD) equipment was used to pulverize the concrete structure. Working in a secure area meant all arriving and departing vehicles carting supplies and demolition debris had to have security escorts to and from the project site.

The old tower was located within the envelope of the arriving and departing aircraft. If there had been an emergency, all machinery had to be able to be moved within a ten-minute time limit. At night, temporary red-flashing lights had to be placed on the LRD equipment and tower to alert aircraft of the potential hazard within their scope.

Abatement and demolition were completed in five months.

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**Resorts International, North Tower, Atlantic City, NJ**

When gaming came to Atlantic City, a "free-standing" hotel became the "North Tower" when a casino was added adjacent to the hotel. As the hotel and casino business grew, a complex of new wings and towers provided modern hotel accommodations. The North Tower had out lived its useful life. It was scheduled to be demolished to make way for a newer, modern, larger addition to the casino.

This 12-story building had to be selectively demolished so that the casino could remain active/open at all times. Work was performed around the clock with strict guidelines not to interfere with the active casino and hotel amenities

Where the casino abutted the old tower, workers had to saw cut the tower free. Demolition of the North Tower was completed in 2002.

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**Sunoco Refinery, Philadelphia, PA**

Sunoco came to LVI with a demolition and decommissioning project at a Philadelphia refinery. Work began in January 2006 and will run through most of this year. Utilizing LVI's specialized equipment, the crew is performing asbestos abatement work and removing more than 25,000 linear feet of piping, amidst other equipment in the refinery that is still in use.

Prior to this project, the refinery had never undertaken a demolition of this magnitude, and all other demolition work had been performed by mechanical contractors, which cost the company much more because of the methods employed.

LVI's skilled operators have worked more than 50,000 man hours on this project without a single OSHA recordable incident or regulatory compliance violation.

Major planning has been required throughout the demolition to ensure that everyone on site understands each aspect of the job. Because of the attention to detail and breadth of experience that LVI brings to the table, the project has been extremely successful to date.

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**BHP Inc. Copper Smelter Smokestack, San Manuel, AZ**

Often beginning at sunrise, work at this remote location began in September 2006. The job site, formerly a large copper smelting operation, was mostly demolished except for two stacks. Each of the stacks is 510 feet tall – the equivalent of 50-story buildings – making decontamination before demolition no small feat.

When thinking of the southwestern U.S., weather delays for a project may seem unlikely. But high winds, lightning and even rain have been the biggest challenges LVI has faced on this job.

To get the work done quickly and effectively, LVI is using its own high-pressure cleaning equipment and an access plan that utilizes mast climbers in lieu of rigging swing stages.

BHP brought in safety experts from as far away as South America to review LVI's plan of operation, all of whom were impressed with LVI's on-site management team and the quality of work. Because of the high-risk nature of the work, extreme safety measures were put into place, including arrangements with the Arizona Department of Safety to have a rescue helicopter on site within 10 minutes if required.

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**Bank One Plaza, Chicago, Illinois**

LVI's ability to provide an integrated service offering and meet an aggressive time schedule was key to being awarded the contract to perform interior demolition, asbestos abatement, and reroofing work on this major project. The project consisted of:

- Total interior demolition, asbestos abatement and replacement of structural fireproofing on 19 floors, ranging from 28,000 feet to 46,000 square feet.
- Simultaneous work on multiple floors requiring upwards of 100 workers per shift.
- Removal of all interior partition walls and all mechanical, electrical and plumbing components.
- Removal of an average of 4,800 to 5,500 bags of asbestos-containing fireproofing.

Following interior demolition and asbestos abatement, LVI replaced the structural fireproofing. Several floors required an accelerated around the clock work schedule (at the owner's request), with multiple crews performing the application and cleanup activities. As a precaution, extra fireproofing equipment and material remained on site to minimize the possibility of work stoppage resulting from equipment failure. The accelerated schedule also created the condition of dealing with excessive moisture buildup. To address this issue and increase cure time, LVI installed negative air units to both exhaust and circulate air. All floors met or exceeded the schedule requirements.

---

**Newton Auditorium, Denver, Colorado**

LVI performed structural demolition, asbestos abatement and hazardous materials removal in this 80-year-old building, owned by the City-County of Denver. Because it is a historic property, additional precautions and attention had to be paid to the job.

LVI's scope of work included:

- Interior demolition of all concrete post-tension slabs and walls.
- Proper shoring of the 150,000-pound trusses within the interior ceiling to allow dismantling in sections and avoid the collapse of the exterior perimeter wall.
- Shoring of the first-floor concrete slab from the basement level, allowing for strategic placement of a 150,000 pound excavator within the building.

Asbestos abatement included 26,600 square feet of asbestos containing plaster, 8,000 square feet of HVAC thermal system insulation, 17,000 square feet of drywall, 6,000 lineal feet of thermal system insulation, 10,000 square feet of spray-applied structural fireproofing, 10,000 square feet of VAT, and associated floor mastic.

The remaining asbestos was removed from hidden locations, along with all fluorescent light tubes, mercury vapor bulbs, PCB ballasts, PCB oil-filled transformers, and elevator hydraulic fluids throughout the facility.

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**Martin County Schools, Martin County, Florida**

Hurricane Frances hit Florida in early September 2004, making landfall in Martin County on the state's southeast coast. The high winds and driving rain caused varying amounts of damage throughout the Martin County School District, based in Stuart. Schools were closed for seven days, after also being closed for one day in mid-August because of Hurricane Charley.

Three weeks later, Hurricane Jeanne took a Frances-like path through the Sunshine State, and the Martin County schools were once again in the direct line of fire. Ultimately, all 20 Martin County school buildings suffered some damage.

After consulting with other school systems hit by Hurricane Charley, the Martin County district established a "first alert" contract with LVI Services. The contract ensures rapid response in times of unscheduled need, such as natural disasters, or fires. In setting up the no-cost agreement just days before Frances hit the area, the school district provided information on its buildings and operations, and the parties agreed to pre-negotiated rates for labor and materials. The school district activated the contract immediately after the hurricane hit, allowing cleanup and recovery to begin immediately.

Martin County and LVI were very successful in prioritizing their post-storm activities and customizing their response levels. For example, cafeterias and gymnasiums were often cleaned up first because they had large open spaces to get air flowing and to use as a staging area for books and furnishings that could be dried out and salvaged. A high priority was placed on having the power restored so HVAC and ventilation systems could be used to help the drying process and prevent mold.

The prioritization of schools was based on visual inspection of damage and water intrusion. If it appeared the roofs were still intact and that water could be rapidly and efficiently extracted, damaged or saturated areas were blocked off so the rest of the school could reopen. Work on the damaged areas was done after hours to minimize disruption of the

school day. A systematic approach to "moisture mapping" enabled LVI to determine where to start, which areas needed the most attention, and where cleanup efforts were most likely to be successful.

LVI mobilized a trained work force of about 300 people – from its Florida office as well as company offices from as far away as Colorado, New York and Texas – to respond to the school district's damage. Moving and housing hundreds of workers was difficult, especially because the storms closed or washed away many roads and left millions, including many nearby hotels, without power. The lack of power also meant that backup power sources were needed for ventilation and air sampling equipment.

In the end, LVI's partnership with Martin County Schools allowed the buildings to be tended to in a very organized and prompt manner to minimize disruption to students and teachers.

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LVI Services | 150 West 30th Street | New York, NY 10001 | (212) 951-3660

**NEW YORK STATE - DEPARTMENT OF LABOR**

DIVISION OF SAFETY AND HEALTH  
LICENSE AND CERTIFICATE UNIT  
STATE CAMPUS BUILDING 12  
ALBANY, NY 12240

**ASBESTOS HANDLING LICENSE**

LVI Environmental Services Inc.

462 Getty Avenue

Clifton, NJ 07011

FILE NUMBER: 99-0960

LICENSE NUMBER: 29651

LICENSE CLASS: FULL

DATE OF ISSUE: 10/17/2011

EXPIRATION DATE: 10/31/2012

Duly Authorized Representative – Peter Demeropoulos:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.



Maureen A. Cox, Director  
FOR THE COMMISSIONER OF LABOR



*Pre- and Post-Construction Structural Survey  
City of Newburgh Sewage Treatment Plant  
Central Hudson Gas & Electric Former MGP*



*CLIENT:*  
D.A. Collins Environmental  
Services  
Wilton, NY

*CLIENT CONTACT:*  
David MacDougall  
(518) 664-9855

*STATUS:*  
Completed in 2010

C.T. Male was retained by D.A. Collins Environmental Services to conduct a pre-construction and post-construction structural survey of selected buildings and structures at the City of Newburgh, NY Sewage Treatment Plant, which is located on the west bank of the Hudson River. D.A. Collins was retained by Central Hudson Gas & Electric Corporation to conduct an environmental remediation project for this former manufactured gas plant. In order to remove the contaminated soils along the river bank, the project required the installation of driven steel sheet piling, which could have caused vibrations and potential damage to the nearby buildings and structures of the treatment plant.

The primary purpose of this survey was to visually observe and document existing conditions of the selected buildings and structures prior to the commencement and after the completion of construction activities, with a particular focus on any existing joints, cracks, areas of deterioration, or areas of damage located on these structures. The secondary purpose of this survey was to provide recommendations for monitoring the observed areas of concern throughout the duration of the project.

The pre-construction and post-construction surveys completed by C.T. Male provided D.A. Collins with the information necessary to document that remediation project did not adversely affect the condition of the buildings and structures within the sewage treatment plant.

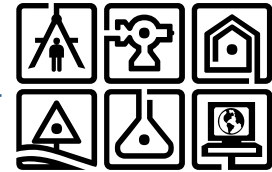
**C.T. MALE  
ASSOCIATES**  
Latham, NY 12110

*Architecture & Building  
Systems Engineering  
Civil Engineering  
Environmental Services  
Land Information Services*



CHRISTOPHER M. SHAVER, P.E.  
Managing Structural Engineer

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Mr. Shaver has over 23 years of experience as a structural engineer and project manager. His responsibilities have included conducting structural evaluations and preparing reports, performing structural analysis and design, developing engineering and construction cost estimates, writing technical specifications, observing construction activities, and managing projects.

### **Select Project Experience**

**Pre-Construction and Post-Construction Structural Survey – City of Newburgh Sewage Treatment Plant - D.A. Collins Environmental Services.** Conducted a pre-construction and post-construction structural survey of selected buildings and structures at the City of Newburgh Sewage Treatment Plant as part of an environmental remediation project that was conducted by D.A. Collins Environmental Services through Central Hudson Gas & Electric Corporation. Prepared reports that documented existing conditions of the selected buildings and structures prior to the commencement and after the completion of construction activities.

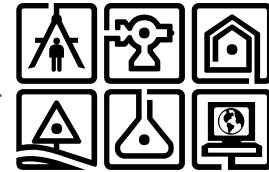
**Structural Evaluation of Existing Fire Stations – Boght Fire District, Colonie, NY; Beukendaal Fire District, Glenville, NY; Schonowe Fire Department, Schenectady, NY; Westmere Fire District, Guilderland, NY; Stanford Heights Fire Department, Colonie, NY; Midway Fire Department, Stations 1 and 2, Colonie, NY; Thomas Corners Fire Department, Glenville Fire District No. 7, Glenville, NY; Jonesville Fire District, Station No. 2, Clifton Park, NY; Fairview Fire Department, Poughkeepsie, NY.** Performed visual evaluations of these existing fire stations to evaluate existing structural condition and feasibility of future renovations and/or expansion. Prepared reports documenting existing conditions, observed deficiencies, areas of concern, and recommended response actions.

**Structural Evaluation of Existing Building for Proposed New Fire Station; City of Cohoes, NY.** Performed a structural evaluation of an existing building under consideration of purchase by City for reuse as part of a new fire station. Prepared report documenting existing conditions, observed deficiencies, areas of concern, and recommended response actions.

**Structural Evaluation of Utility Tunnel – Mid Hudson Forensic Psychiatric Center, New Hampton, NY; Dormitory Authority, State of New York;** Served as lead structural engineer to visually inspect the interior surfaces of the 1500 foot long reinforced concrete utility tunnel that lies beneath the grounds of this facility. Prepared a detailed report that documented existing conditions and provided recommendations for repair.

**Structural Evaluation of Existing Postal Facilities - United States Postal Service; Troy, Lake Placid, Plattsburgh, Oneonta, Brushton, AuSable Forks, Wynantskill, Lake Clear, Albany, and Schenectady, NY.** Performed visual evaluations of these post office facilities to evaluate existing structural conditions. Prepared report documenting existing conditions, observed deficiencies, areas of concern, and recommended response actions.

**Structural Evaluation – Eagle Island Camp; Santa Clara, NY.** Performed a visual evaluation of numerous building structures at this facility in Upstate NY, which is owned and operated by the Girls Scouts Heart of New Jersey. Prepared a report that documented existing conditions, observed structural deficiencies and items of concern, and provided a prioritized list of recommendation repairs.



**Structural Evaluation - Herkimer County Jail, Herkimer, NY, and Essex County Jail, Elizabethtown, NY; New York State Commission of Correction.** Performed a structural evaluation of the existing facilities, and prepared reports identifying items of structural concern and items found that were not in compliance with the Property Maintenance Code of New York State.

**Structural Evaluation of Existing Waste Water Treatment Plant - Berkshire Mall; Lanesboro, MA.** Conducted a visual evaluation of the building structure as part of an overall evaluation of the existing waste water treatment plant at this facility. Provided input to a report that documented existing conditions, identified observed deficiencies, and provided recommendations for repair and replacement.

**Structural Evaluation - Town of Caroga Municipal Office Building; Caroga Lake, New York.** Conducted a structural evaluation of the existing Municipal Office Building to document existing conditions, identify items of structural concern, and provide recommendations for repairs. Served as project manager for this project, which also included an evaluation of the existing roofing systems, surveys for asbestos-containing materials and mold, preparation of specifications for asbestos abatement prior to demolition of a portion of this building.

**Structural Evaluation of Exterior Masonry Walls - Saratoga County Office Complex; Ballston Spa, New York.** Conducted a structural evaluation of the exterior brick masonry walls of three existing buildings at this complex. Provided a report that documented existing conditions, identified items of structural concern, and provided recommendations for repairs.

**Structural Evaluation- Schreiber Foods; Mt. Vernon, Missouri - Building Survey.** Conducted a structural evaluation of an abandoned facility under consideration for purchase by client. Visually evaluated facility for deficiencies, documented existing conditions, and prepared a detailed report with order-of-magnitude cost estimate for repairs.

**Structural Evaluations - Georgia-Pacific Corporation; Port Edwards and Nekoosa, Wisconsin.** Numerous projects involving structural evaluations, report preparation, and design of repairs as required for various items such as deteriorated concrete, corroded structural steel, and building deflections and settlement.

**Structural Evaluations - Procter & Gamble; Green Bay, Wisconsin.** Numerous projects involving structural evaluations, report preparation, and design of repairs as required for various items such as deteriorated concrete, corroded structural steel, and building deflections and settlement.

**Structural Evaluation - Crown-Vantage; St. Francisville, Louisiana.** Participated in a structural evaluation of the entire paper mill facility. Visually inspected facility for structural deficiencies, documented existing conditions, and prepared a detailed report for client's use in developing a facility maintenance program.

### **Professional Background and Affiliations**

B.S. in Civil Engineering, Clarkson University, 1989  
Professional Engineer - New York and Wisconsin  
Member of the American Society of Civil Engineers  
Member of the American Concrete Institute



# Qualifications of Vibra-Tech Engineers, Inc.



**Vibra-Tech**

MONITORING • ANALYSIS • REPORTING

[www.geosonicsvibratech.com](http://www.geosonicsvibratech.com)

1-866-806-9676

## Company Overview

Vibra-Tech Engineers, Inc. has been in the vibration consulting business for over 60 years.

The company began in 1949 as a partnership under the name of Vibration Engineering Company in Hazleton, Pennsylvania. Located in the anthracite coal regions of Pennsylvania, this region of the country used more explosives than anywhere in the world. The Vibration Engineering Company was created in response to a rise of complaints about blasting vibrations from property owners.

One of the original partners was Dr. L. Don Leet, a noted Harvard University seismologist who developed a blasting seismograph in the late 1930's. The first notable use of this instrument was during the first atomic test blast in Alamogordo, New Mexico on July 16, 1945. The company used the Leet seismograph during the early consulting days. The Vibration Engineering Company was incorporated in 1955. Our name became Vibra-Tech Engineers, Inc. in 1960 following a dispute concerning similar names with Vibration Measurement Engineers, Inc. Vibra-Tech Engineers would later buy this company and take over their office. In 1995, Vibra-Tech Engineers, Inc. joined forces with GeoSonics, Inc. Our sister company, GeoSonics, was started by Phillip R. Berger, one of Dr. Leet's assistants at Harvard University.

Together Vibra-Tech and GeoSonics employ over 100 people in 18 offices throughout the United States. We maintain over 25 distributors worldwide. This combination of engineers, geologists, geophysicists and other professionals have worked on a variety of projects for clients located globally.

Today GeoSonics/Vibra-Tech provides Re:mote™ Monitoring Technology, the industry's first fully automated monitoring system with web-based data access. Our Re:mote instrumentation operates without an onsite operator. This technology automatically converts your site data into valuable engineering information that is stored in our encrypted database. GeoSonics/Vibra-Tech sets up a customized, password-protected website for each client—so accessing data is as simple as logging on to the Internet. Whether you need vibration, noise, dust, geotechnical or environmental monitoring, water level depth measurements or continuous noise level measurements, our Re:mote monitoring capabilities bring the field to you—saving you operational time and resources. In addition, we also offer inspections, damage claim investigations, expert testimony, project criteria development, geophysical surveys, vibration control plans and seismograph manufacturing and service to meet our client's needs.

## Vibra-Tech Services and Capabilities

Vibra-Tech Engineers, Inc. offers a wide variety of services to meet the needs of our clients.

**Vibration Monitoring** – Do you need to monitor vibration to make sure you stay within established project criteria? Our Re:remote™ Monitoring Technology continuously collects the vibration data you need, while keeping your project personnel up to date through email or text messaging.

**Inspections** – Let us help you protect your business and help manage risk. The best way to avoid or defend against complaints is to hire someone you trust to conduct thorough construction or blasting inspections.

**Blast Consulting** – Are you concerned about ground vibrations disrupting nearby neighbors? Using our Iso-Seis and Vibra-Map technologies we understand structural response and can help minimize complaints.

**Geotechnical Monitoring** – Want to ensure your construction/demolition project doesn't affect adjacent foundations? We offer geotechnical surveys and continuous monitoring, tailored to your project needs.

**Structural Dynamic Engineering** – Do you have a unique structure that requires additional monitoring? We have developed criteria for historical landmarks, pipelines, dams and landfills.

**Geophysical Exploration** – Want to estimate rock quantities? Using our geophysical evaluation, we can give you the ability to see what lies beneath the surface.

**Dust Monitoring** – Are nearby residents complaining about dust from your project worksite? Let us record PM10 or PM2.5 concentrations and correlate wind speed and wind direction to help you and your neighbors identify a solution to keep the peace.

**Sound Monitoring** – Our monitors collect results to help you address community noise issues, show relative change and establish compliance with ordinance criteria for existing or new permits.

**Community Relations** – Your job is to get the work done, but someone needs to let the community know what is happening and how it may impact them. Our experts can help you explain the project and provide honest, accurate answers in community forums or in one-on-one meetings.

**Expert Testimony** – We not only provide the data you need, we can back that data up with expert testimony for litigation, public meetings or hearings.

**Seismograph Manufacturing and Service** – You can count on us to provide exceptional service on seismograph sales and leases as well as calibration and repairs. Our Research and Development team continually strives to bring forth new technology and can develop customized solutions for our customers.

Our other services include **Acoustic/Noise Evaluation**, **Environmental Analysis** and **Vibration Services**.

**To learn more about how we can help meet your project needs, call Vibra-Tech at 866.806.9676.**

## Consultant Projects – Client List

The following list contains companies Vibra-Tech has worked for in the capacity of vibration consultants. Services we have performed include Structural Inspections, Damage Claim Investigations, Water Well Investigations, Vibration Monitoring, Vibration Prediction and Control and Legal Testimony.

### Construction and Engineering Companies

AECOM Technology Corp.  
Alexander Building Construction Co.  
Allan A. Myers, Inc.  
Anderzack-Pitzen Construction, Inc.  
Austin Industries, Inc.  
Balfour Beatty Construction  
Beyer Blinder Belle Architects & Planners LLP  
Black & Veatch  
Bloomsdale Excavating Co.  
Boeing Services Co.  
Brasfield & Gorrie, LLC  
BRH – Garger Construction LP  
Brunalli Construction Co.  
Callahan & Nannini Excavating  
Callanan Industries, Inc.  
Carolina Sunrock LLC  
Clark Construction Group, LLC  
Clark/McCarthy  
Clearwater Excavating Corp.  
Clough Harbour & Associates  
CH2M HILL  
Creamer Environmental, Inc.  
Damon-Purcell Construction  
Danis  
Edward Kraemer & Sons, Inc.  
Engineering & Testing Services, Inc.  
Explosives Experts, Inc.  
Flatiron Construction Corp.  
Flintco, LLC  
Fluor Corporation  
Fred Weber, Inc.  
Furgo (USA), Inc.  
G. Donaldson Construction Company, Inc.  
Gannett Fleming, Inc.  
Granite Construction  
HDR, Inc.  
Hensel Phelps Construction Co.  
Holder Construction Company  
Independence Excavating  
Intech Construction  
John Rocchio Corp  
Kelly/Maiello, Inc.  
Kiewit Corporation  
Manafort Brothers, Inc.  
McCarthy Holdings, Inc.  
McCormick Taylor, Inc.  
Mid-South Drilling, Inc.  
Miller Bros Construction, Inc.  
Morgan Corp.  
Mosser Construction, Inc.  
MWH Global, Inc.  
Parsons Brinckerhoff  
PJ Dick, Trumbull, and Lindy Paving  
P.J. Keating Company  
Posen Construction, Inc.  
Professional Service Industries, Inc.  
QORE, Inc.  
Robert Silman Associates  
R.G. Johnson Company, Inc.  
S&ME, Inc.  
Skanska  
Sundt Construction, Inc.  
Tectonic Engineering & Surveying Consultants P.C.  
Terracon Consultants, Inc.  
Kokosing Construction Company, Inc.  
The Kleinfelder Group, Inc.  
The Lane Construction Corporation  
The Shaw Group, Inc.

The Walsh Group Ltd.  
W. E. O'Neil Construction Co.  
Webber LLC  
Weeks Marine, Inc.

Wood Group Mustang  
WorleyParsons Group, Inc.  
Zachry Holdings, Inc.

### **Mines and Quarries**

Alpha Natural Resources  
APAC Quarries, Inc.  
Arch Coal, Inc.  
Arch Materials, LLC  
Austin Powder Company  
BHP Billiton  
Boxley Materials Company  
Buffalo Crushed Stone, Inc.  
Carmeuse Lime and Stone  
Catenary Coal Company, LLC  
CEMEX USA  
Cliffs Natural Resources  
CONSOL Energy, Inc.  
Edward C. Levy Company  
E. Tetz and Sons, Inc.  
E.R. Jahna Industries, Inc.  
Graymont Dolime, Inc.  
Great Lakes Aggregates  
Hanson  
Holcim, Inc.

INCO Limited  
J.M. Huber Corporation  
Lafarge, Inc.  
Lehigh Cement Company  
Luck Stone Corporation  
Martin Marietta Materials  
National Lime and Stone Company  
National Quarry Services, Inc.  
Oldcastle Industrial Minerals, Inc.  
Peabody Energy  
Pennsy Supply, Inc.  
Pritchard Mining Company  
Rogers Group, Inc.  
Sandusky Crushed Stone  
Stoneco, Inc.  
The Eveleth Taconite Company  
Tilcon Connecticut Inc.  
Tilcon New York  
Vulcan Materials Company

### **Seismic Exploration Companies**

Bay Geophysical, Inc.  
Great Lakes Geophysical, Inc.  
Halliburton



## **Pile Driving Projects**

**Client Name:** D.A. Collins Environmental Services  
269 Ballard Road, Wilton, NY 12831

**Project Name:** Teterboro Landing Project  
Teterboro, New Jersey

**Description:** Conducted inspections of adjacent structures before pile driving activities began. Sheet pile cofferdam was installed, creating a soil enclosure for the thermo treatment. Vibration monitoring data was collected during pile driving to ensure vibrations were within established limits.

**Client Name:** Severson Environmental Services, Inc.  
2749 Lockport Road, Niagara Falls, NY 14305

**Project Name:** Former Bridgeton Manufactured Gas Plant  
Bridgeton, New Jersey

**Description:** Prior to construction, structures in close proximity to the project site were inspected. Crack gauges and vibration monitoring equipment were installed along with geotechnical equipment like tilt plates and inclinometer casings along the earth slope. Sheet piles with soil anchors were installed along the top of the earth slope. Vibration and crack gauge monitoring was performed during the pile driving, excavation of contaminated soil and backfilling of clean soil. Earth slope stability was monitored with a portable inclinometer probe and readout box. Structures located at the top of the slope were monitored with tilt meters to detect any wall rotations.

**Client Name:** Creamer Environmental, Inc.  
215 Union Street, 2<sup>nd</sup> Floor, Hackensack, NJ 07601

**Project Name:** Former Mount Vernon Works MGP Site  
Mount Vernon, New York

**Description:** This project involved driving sheeting to support excavation during the removal of contaminated soil and subsequent filling with clean soil. Vibra-Tech developed a vibration monitoring and control plan to protect residential and commercial structures surrounding the site. Pre-inspections of the surrounding structures were conducted to document baseline conditions. Crack gauge monitors were installed on selected structures to detect potential movement. Remote monitoring technology was utilized to measure offsite vibration from excavation activity. A field technician was onsite during all pile driving and pile removal activities to monitor resulting vibrations and document piling activity.



**Client Name:** Creamer Environmental, Inc.  
215 Union Street, 2nd Floor, Hackensack, NJ 07601

**Project Name:** Former South Street MGP Site  
Elizabeth, New Jersey

**Description:** This project involved driving sheeting to support excavation during the removal of contaminated soil and subsequent filling with clean soil. Vibra-Tech developed a vibration monitoring and control plan to protect residential and commercial structures surrounding the site. Pre-inspections of the surrounding structures were conducted to document baseline conditions. Remote monitoring technology was utilized to measure offsite vibration from excavation activity. A field technician was onsite during all pile driving and pile removal activities to monitor resulting vibrations and document piling activity.

**Client Name:** Fru-Con Construction, Inc.  
15933 Clayton Rd, Ballwin, MO 63011

**Project Name:** U.S. Army Corps of Engineers – Wyoming Valley Levee Raising Project  
Scranton, Pennsylvania

**Description:** Conducted pre-pile driving investigations and continuous vibration monitoring during the pile driving activity for the Wyoming Valley Levee Project where levee and floodwalls were raised to protect nearby communities.

**Client Name:** Underwood Engineering Company  
143 Harding Avenue, Bellmawr, NJ 08031

**Project Name:** Navy Foundry and Propeller Center  
Philadelphia, Pennsylvania

**Description:** Monitored pile driving activities for building addition to the propeller center.

**Client Name:** Tri-State Design Construction Company, Inc.  
7401 Old York Road, Elkins Park, PA 19027

**Project Name:** U.S. Army Corps of Engineers – Wyoming Valley Levee Raising Project  
Scranton, Pennsylvania

**Description:** Conducted pre-pile driving investigations and continuous vibration monitoring during the pile driving activity for the Wyoming Valley Levee Project where levee and floodwalls were raised to protect nearby communities.

**Client Name:** Tri-State Design/KC Construction  
7401 Old York Road, Elkins Park, PA 19027

**Project Name:** Olyphant Flood Control  
Olyphant, Pennsylvania

**Description:** Conducted pre-construction inspections of surrounding structures and performed continuous vibration monitoring during the pile driving activity for the Olyphant Flood Control Project.

**Client Name:** Tri-State Design/KC Construction  
7401 Old York Road, Elkins Park, PA 19027

**Project Name:** Scranton Flood Control  
Scranton, Pennsylvania

**Description:** Conducted pre-construction inspections of surrounding structures and performed continuous vibration monitoring during the pile driving activity for the Scranton Flood Control Project.

## **Federal Government – Research**

### **1982 - United States Department of Interior**

#### **Mining Research Contract - U. S. Bureau of Mines**

The goal of this research was to determine the effects of surface mine blasting on water quality or quantity in a 300 foot deep test well. The well was subjected to increasing particle velocities over an 18 month period as mining advanced toward the water well.

### **1985 - United States Department of Interior**

#### **Mining Research Contract - U. S. Bureau of Mines**

The aim of this research was to determine the effect of local geology on ground vibration and test methods of choosing the proper delay interval such that blast vibrations would destructively interfere minimizing vibrations effects on surrounding structures.

### **1987 - United States Department of Interior**

#### **Office of Surface Mining Reclamation and Enforcement**

Contract to write the Blasting Guidance Manual which was distributed to all surface coal mines in the United States to help guide blasters in following federal regulations.

### **1987 - United States Department of Interior**

#### **Mining Research Contract - U. S. Bureau of Mines**

The goal of this research was to develop a geophysical method that could assess the condition of the subsurface prior to a subsidence event and use this relationship to understand the reaction of the subsurface preceding the subsidence. Seismic techniques were judged to be the most insensitive due to the urban nature of the sites and most closely related to the physical and material properties of the subsurface.

## **Federal Government – Projects**

### **1996 - United States Department of Energy**

#### **Savannah River Nuclear Waste Facility (Aiken, SC)**

Deployed an array of accelerometers to measure the vibration from the direct impact of a collapsed 300 foot tall smokestack onto the array. Data was used to determine the vibration effects on buried utilities located throughout the facility.

### **1995 - United States Department of Interior**

#### **National Park Service - Lincoln Memorial (Washington, DC)**

Measure ambient vibrations from airport and vehicular traffic and develop vibration criteria for proposed construction activity near the memorial.

### **1994 - United States Department of Defense**

#### **Pentagon Renovation Project (Washington, DC)**

Perform structural inspections of building interior prior to construction activity. Monitor vibrations from pile driving operations being performed interior to the structure.

### **1994 - United States Department of Health & Human Services**

#### **Center for Disease Control (Atlanta, GA)**

Perform structural inspections of building interior prior to construction activity. Monitor vibrations from pile driving and blasting operations to assure adherence to vibration limits.

### **1993 - United States Department of Energy**

#### **Savannah River Nuclear Waste Facility (Aiken, SC)**

Monitored vibrations produced by dynamic compaction using 50 digital seismometers for a six week period. The seismometers were deployed in the cap containment area of a low level radioactive waste landfill.

### **1993 - United States Department of Defense**

#### **Navel Air Warfare Center (Warminster, PA)**

Measure vibrations produced by horizontal accelerator and design an isolation system for base of accelerator to reduce vibrations to surrounding equipment.

## **State Government – Projects**

### **Michigan Department of Transportation**

#### **I-75 Bridge over Zilwaukee River (Saginaw, MI)**

Perform dynamic analysis of collapsed bridge structure to establish vibration levels to ensure worker safety. Monitor vibrations from construction activity to assure adherence to established criteria.

### **Georgia Department of Transportation**

#### **Decatur Belt Railway Upgrade (Decatur, GA)**

Performed vibration impact study for residential structures located along proposed train alignment. The study involved predicting what vibration levels could be expected from the new alignment and their effects on structures.

### **Texas Department of Transportation**

#### **Highway 1604 New Construction Project (San Antonio, TX)**

Performed structural inspections of residential and commercial buildings prior to blasting and construction activity. Monitored operations to ensure compliance with established vibration criteria.

### **Pennsylvania Department of Transportation**

#### **S.R. 0095, Section CCA (Philadelphia, PA)**

Performed vibration impact study for residential and commercial structures located along the proposed alignment of this urban highway. During the construction phase of the project, structural inspections were performed on hundreds of buildings to document their existing condition prior to construction activity. Vibration monitoring was performed for blasting and pile driving activity to assure compliance to recommended vibration criteria.

### **State of Texas**

#### **Old Spanish Missions (San Antonio Area)**

Performed vibration and air overpressure monitoring of military aircraft flying over the old Spanish Missions in order to determine the possible effects on these structures.

## **Fortune 500 Companies - Projects**

### **AT&T Corporation**

#### **Fiber Optic Cable Division**

Retained as vibration consultant for blasting near fiber optic cables on nationwide basis. Employed by hundreds of contractors on various projects to measure vibrations and maintain Bell Laboratories criteria for the cable.

### **Bethlehem Steel Corporation**

#### **Sparrows Point, MD and Bethlehem, PA Plants**

Measure effects of vibration on concrete platforms due to pouring of molten steel. Measure vibration produced by pile driving operations and develop criteria for protection of brick furnaces.

### **Merck Pharmaceutical Corporation**

#### **Allentown, PA Facility**

Measure ambient vibrations resulting from day to day operations and design isolation system for injection molding equipment.

### **Toyota Motor Manufacturing Corporation**

#### **Georgetown, KY Facility**

Measure ambient vibrations from day to day operations and determine dynamic characteristics of floor system.

### **Hershey Food Corporation**

#### **Laboratory & Science Building, Hershey, PA**

Prediction of dynamic floor response due to vibration loading using modal analysis techniques.

### **E. I. Dupont Corporation Spruance Facility**

#### **Wilmington, DE**

Measure vibrations produced by construction activity and establish vibration criteria for sensitive equipment located within the facility.

## **Resumes for Project Principals**

# PROFESSIONAL QUALIFICATIONS OF DOUGLAS RUDENKO, P.G.

## Education

- B.S. - Geophysics, Pennsylvania State University, 1984.

## Continuing Education Programs

- Short Course in Shallow Seismic Reflection Methods, EG & G Geometrics, Sunnyvale, CA; (June 1988).
- Short Course in Ground Penetrating Radar, SoftEarth Associates, Inc., Downers Grove, IL; (Sept., 1990).
- Research Workshop - Geophysical Characteristics of Contaminants in the Subsurface, Society of Exploration Geophysicists Annual Meeting, Houston, TX; (Nov., 1991).
- Short Course - Introduction to Engineering & Environmental Geophysics, Bell West Geoservices, Inc., Hazleton, PA; (July, 1992).
- Short Course – Controlled Blasting for Rock Slopes, Blast Dynamics, Inc. Reno, NV; (Oct., 1999).
- Certification Program - Practical Blasting Fundamentals, International Society of Explosive Engineers, Allentown, PA; (April, 2000)
- Short Course – Geotechnical Instrumentation for Field Measurements University of Florida, Cocoa Beach, FL; (March, 2001)
- Short Course – Air Quality Dispersion Modeling, NSSGA Environmental Health & Safety Forum, Phoenix, AZ (Sept., 2003)
- Short Course - Structural Vibration Analysis, ASCE, St. Louis, MO; (Oct., 2004)
- Applied Mechanics: Statics & Strength of Materials, Penn State University; (April – May, 2006)
- Geotechnical Instrumentation and Monitoring Bootcamp, ASCE, Cincinnati, OH; (Feb., 2010)
- Structural Condition Assessment of Existing Structures, ASCE, Orlando, FL (Feb., 2011)

## Professional Registration

Certified Professional Geologist	American Institute of Professional Geologist	CPG-8690
Registered Geologist	Commonwealth of Pennsylvania	PG-730-G
Registered Geologist	Commonwealth of Kentucky	PG-856
Registered Geologist	State of Missouri	RG-0540
Registered Geologist	State of Illinois	196-000198
Registered Geoscientist	State of Texas	3744
Licensed Blaster	Commonwealth of Pennsylvania	BL-0338
OSHA 29 CFR 1910.120	40 Hr. Hazardous Waste Training	



## **Professional Societies**

- American Institute of Professional Geologists
- American Society of Civil Engineers
- Association of Engineering Geologists
- Environmental and Engineering Geophysical Society (Founding Member)
- National Fire Protection Association
  - Member of the Technical Committee on Explosives
- Pennsylvania Council of Professional Geologists
- Society of Exploration Geophysicists
  - Member of the Executive Committee, Engineering and Groundwater 1988-1992
  - Member of the Near-Surface Geophysical Committee, 1993-2004
- Society of Explosive Engineers
  - Member of the Blast Vibration and Seismograph Section
  - Member of the Standards Committee
- Society of Mining Engineers

## **Professional Background**

### **July, 1998 to Present**

#### **Vibra-Tech Engineers, Inc. - Hazleton, Pennsylvania**

#### **Present Position – Vice President & Northeast Regional Manager**

Mr. Rudenko is currently Vice President and Northeast Regional Manager for Vibra-Tech Engineers, Inc. He is responsible for the direction and supervision of Vibra-Tech's professional staff in six offices located in the Northeastern United States.

Mr. Rudenko has worked for twenty-seven years in the field of engineering seismology, specializing in the analysis of seismic effects from blasting, pile driving, dynamic compaction, seismic operations, traffic and industrial vibrations. He has observed, recorded and analyzed the effects of vibrations on various types of structures throughout the United States and abroad. Some examples of hallmark projects that Mr. Rudenko has managed include determining appropriate vibration criteria for frescos in the U.S. Capitol building utilizing ultra-sonic measurements and frequency response function techniques. Developing vibration criteria and implementing a monitoring plan for the historic lobby in the Alfred Smith Building such that demolition activity that included jack hammering of the upper floors in the structure could safely be completed. Developing vibration criteria and implementing a monitoring plan for the historic Jefferson County Courthouse in Nashville, TN such that blasting activity for an underground parking garage could safely be completed.

Mr. Rudenko has also been invited by MSHA, ISEE, Fire Marshalls Association, NSSGA, NY Department of Labor and commercial explosive companies to lecture blasters, engineers, and regulators on fundamental seismology, the effects of ground vibration and air overpressure on structures, and vibration control through blast design. He has provided expert testimony for environmental hearing boards, state and local regulatory agencies, and various courts in the field of blasting, geophysics, geology, and seismology with particular emphasis on vibration standards and the effects of vibration on structures.

Mr. Rudenko serves on the Standards Committee for the International Society of Explosive Engineers. The Standards Committee was responsible for developing the performance specifications for blasting

seismographs as well as field practice guidelines for blasting seismographs. Mr. Rudenko is also a member of the National Fire Protection Association Technical Committee on Explosives. This committee has the primary responsibility for documents on the manufacture, transportation, storage and use of explosives and related materials as found in the Explosive Materials Code (NFPA 495).

Mr. Rudenko has also performed investigations for several insurance companies regarding alleged damage to residential wells and aquifers resulting from blasting operations. In 1993, Mr. Rudenko provided testimony on behalf of the Pennsylvania Council of Professional Geologist at public hearings pertaining to Senate Bill 351 which provides for the conservation and management of water resources within the Commonwealth.

**January, 1995 to Present**

**Vibra-Tech Engineers, Inc. - Hazleton, Pennsylvania**

**Present Position – Manager of Technical Services**

Mr. Rudenko is a Senior Geophysicist and Manager of the Technical Services Group at the corporate headquarters of Vibra-Tech Engineers, Inc. in Hazleton, Pennsylvania. As manager of this group Mr. Rudenko directly oversees 4 full-time and 3 part time employees. His responsibilities include the management and planning of all geophysical investigations including budgetary monitoring, major technical decisions, scheduling and staff management. In addition he is responsible for a detailed review of technical calculations, drawings, figures, and maps; preparation of draft and final reports and client contact.

Mr. Rudenko is also responsible for the development and planning of all Iso-Seismic and Vibra-Map surveys performed by both Vibra-Tech. The Iso-Seismic system is an array of 170 digital seismometers deployed around a quarry site to measure blast vibrations. The data is used to pinpoint chronic vibration areas around the quarry that maybe related to the geology. Vibra-Map calculations are then employed to determine the proper firing time to use for a production blast in order to produce a vibration signal that minimizes structural response. Mr. Rudenko oversees the planning of these surveys, budgetary monitoring, scheduling and staff management, and review of final reports.

Mr. Rudenko also oversees the analysis and processing of analog tapes of vibration events from over one hundred clients nationwide. He is responsible for reviewing all final reports of the processed data before final delivery to the client.

**September, 1984 to December, 1994**

**Vibra-Tech Engineers, Inc. - Hazleton, Pennsylvania**

**Position - Senior Geophysicist**

Since joining Vibra-Tech, Mr. Rudenko has been primarily involved in the development and organization of the geophysical services department. For the past thirteen years Mr. Rudenko has been instrumental in introducing, developing and updating Vibra-Tech's geophysical capabilities. The new capabilities introduced at Vibra-Tech by Mr. Rudenko include ground penetrating radar, electromagnetic and magnetic methods, crosshole and downhole seismic techniques, and seismic tomography. Other tasks that he has been involved with include the development of a geophysical training program for geologists at Vibra-Tech and technical advisor for a senior level engineering design project at Wilkes University involving the development of a new crosshole source

Mr. Rudenko has used a wide variety of geophysical techniques on various environmental and geotechnical projects throughout the Northeast. Projects he has managed include the use of geophysical techniques in dam site investigations; foundation studies for power plant facilities; subsurface investigations for highway and utility alignments; geophysical and geological investigations for mining, quarrying, and dredging operations; investigations of subsurface conditions related to new and existing landfill facilities; delineation of contamination plumes; detection of buried waste, and the use of geophysical techniques in mine subsidence, sinkhole, and tunnel investigations.

Other projects Mr. Rudenko has been responsible for include the development of a recording system, procedures, and analysis for several environmental impact studies involving the measurement and prediction of traffic vibrations on structures adjacent to proposed highway alignments.

Mr. Rudenko has also been involved in two different research projects sponsored by the U.S. Bureau of Mines. In 1985 he assisted with the collection and reduction of geophysical data for a mining research contract entitled **“Geologic Factors Affecting Vibration from Surface Mine Blasting”**. The aim of this study was to determine the effect of local geology on ground vibration and test methods of choosing the proper delay interval such that blast vibrations would destructively interfere.

In 1987 he was responsible for the acquisition and reduction of all geophysical data collected for a three year research contract entitled **“Design and Implementation of a Monitoring System to Detect Imminent Subsidence in the Anthracite Region of North Eastern Pennsylvania”**. The goal of this study was to develop a geophysical method that could assess the condition of the subsurface prior to a subsidence event and use this relationship to understand the reaction of the subsurface preceding the subsidence. Seismic techniques were judged to be the most insensitive due to the urban nature of the sites and most closely related to the physical and material properties of the subsurface.

## **Publications**

**“Monitoring and Advanced Evaluation Techniques for Aggregate Mining in Urban Settings”** with Jeffery Straw, Proceedings of the 2011 Society of Mining Engineers Annual Meeting, Denver, CO (2011).

**“Particulate Matter as an Air Pollutant, Past, Present, and Future”** with Jonathan Ferdinand, Proceedings of the 5th Biennial Blasting Vibration Technology Conference, Key West, FL (2004).

**“The Court of Public Opinion: Winning Through Science”** with Philip Berger, Jr., AggMan, Pages 47-49, February 2002.

**“Blasting Near Domestic Water Supplies – Facts and Myths”**, Proceedings of the 4th Biennial Blasting Vibration Technology Conference, Key West, FL (2002).

**“Airblast – An Often Overlooked Cause of Structural Response”**, Proceedings of the 10<sup>th</sup> Hi-Tech Seminar on Blasting Technology, Instrumentation and Explosives Applications, Nashville, TN (2001).

**“Diagnosing and Solving Blasting Problems”**, Aggregates Manager, Pages 25-30, July 2000.

**“An Analytical Approach for Diagnosing and Solving Blasting Complaints”** Proceedings of the 9<sup>th</sup> Hi-Tech Seminar on Blasting Technology, Instrumentation and Explosives Applications, Orlando, FL (2001).

**“Structural Response – The Primary Cause of Blasting Complaints”**, Proceedings of the 3rd Biennial Blasting Vibration Technology Conference, Key West, FL (2000).

**“Understanding Blast Vibrations – A Key to Gaining Control”**, Proceedings of the 2nd Annual Blasting Vibration Technology Conference, Key West, FL (1998).

**“Blast Vibrations – Planning for the Future”**, Proceedings of the 2nd Annual Blasting Vibration Technology Conference, Key West, FL (1998).

**“Engineering Geophysics for the Mining and Construction Industries”**, Proceedings of 8th Hi-Tech Seminar on Blasting Technology, Instrumentation and Explosives Applications, Nashville, TN (1998).

***“Optimizing Seismic Characterization of Longwall Coal Mine Overburden Using CAD and Computer-Enhanced Techniques: Case Study from Longwall Mining Operations, Western Maryland, USA”*** with K. Kluger Cohen and M.A. Trevits, Proceedings from the Third Canadian Conference on Computer Applications in the Mineral Industry, Montreal, Canada (1995).

***“Concepts of Seismic Refraction Processing”***, Special Compilation for Bobby Timmons used in “Prospecting for Natural Aggregates: An Update; Rock Products, Pages 32-33, January, 1995.

***“Seismic Refraction Technique Applied to Highway Design in a Strip Mined Area of Southwestern Pennsylvania”*** with W.M. Lorence, H.D. Ackermann, Proceedings of the 42nd Annual Highway Geology Symposium, Albany, NY (1991).

***“P-wave and S-wave Velocity Measurements Related to Subsidence Over a Longwall Mine”*** with J.S. Walker, A.M. Richardson, H.D. Ackermann, and J.W. Reil, Proceedings of the 59th Annual Meeting of the Society of Exploration Geophysicists, Dallas, TX (1989).

***“Use of Geophysical Methods in a Geotechnical Investigation”*** with K.H. Early, Proceedings of the 2nd International Conference on Case Histories in Geotechnical Engineering, St. Louis, MO (1988).

## Technical Presentations

- 2011 38<sup>th</sup> Annual Kentucky Blasting Conference, ***“Controlling Structure Response to Reduce Blasting Complaints”***, Lexington, KY.
- 2011 Fifteenth Pennsylvania Blasting Conference, ***“The Development of a Blasting Vibration Criteria for a Sand Dyke in Suriname, South America”***, University Park, PA
- 2010 AGG1 Academy – NSSGA 2010 Annual Convention, ***“Public Perception Through Blast Design”***, Cincinnati, OH
- 2009 West Virginia Department of Environmental Protection Annual Blaster Refresher Training, ***“Controlling Ground Vibrations and Air Overpressure with Seismograph Measurements”***, South Charleston, WV.
- 2008 35<sup>th</sup> Annual Kentucky Blasting Conference, ***“Controlling Ground Vibration and Air Overpressure with Seismograph Measurements”***, Lexington, KY.
- 2007 6<sup>th</sup> Blasting Vibration Technology Conference, ***“New Electronic Detonator Applications”***, Key Largo, FL
- 2007 National Stone, Sand, and Gravel Association, Effective Drilling and Blasting Seminar, ***“Controlling the Effects of Blasting”***, Chantilly, VA.
- 2007 15<sup>th</sup> Annual Conference Explosives, Drilling and Blasting Techniques, ***“Influencing the Court of Public Opinion - Dual Measurement Monitoring”***, Johannesburg, South Africa
- 2004 Symposium: State of the Art Techniques for Monitoring and Protecting Historic Structures, ***“Protecting Historic Structures During Construction Activity”***, Columbia University, New York, NY
- 2004 Risk Management Workshop, ***“Managing Risk through Public Perception”***, New York Construction Materials Association, Albany, NY
- 2003 Plant Operations Workshop, ***“Vibration Control Techniques”***, Pennsylvania Aggregates and Concrete Association, Grantville, PA
- 2001 Tenth Pennsylvania Blasting Conference, ***“Water Well Damage Claims – Facts and Fiction”***, University Park, PA
- 2001 Blasting Analysis International, Inc. Tenth High-Tech Seminar, ***“Airblast – An Often Overlooked Cause of Structural Response”***, Nashville, TN

- 2001 Mine Blasting Safety and Application Seminar, ***“An Analytical Approach for Diagnosing and Solving Blasting Complaints”***, National Mine Health and Safety Academy, Beckley, WV
- 2000 3<sup>rd</sup> Biannual Blasting Vibration Technology Conference, ***“Structural Response: The Primary Cause of Blasting Complaints”***, Key West, FL.
- 2000 Blasting Analysis International, Inc. Ninth High-Tech Seminar, ***“An Analytical Approach for Diagnosing and Solving Blasting Complaints”***, Orlando, FL.
- 1999 National Stone Association, Effective Drilling and Blasting Seminar, ***“Vibration Control & Public Relations”***, Philadelphia, PA.
- 1999 Georgia Crushed Stone Association – Technology Conference on Blast Vibrations: Structure & Human Response ***“Diagnosing and Controlling Dynamic Geologic Response”***, Atlanta, GA
- 1998 2<sup>nd</sup> Annual Blasting Vibration Technology Conference, ***“Understanding Blast Vibrations — A Key to Gaining Control”***, Key West, FL.
- 1998 2<sup>nd</sup> Annual Blasting Vibration Technology Conference, ***“Blast Vibrations — Planning for the Future”***, Key West, FL
- 1998 Blasting Analysis International, Inc. Eight High-Tech Seminar, ***“Engineering Geophysics for the Mining and Construction Industries”***, Nashville, TN.
- 1998 Geological Society of America Annual Meeting, ***“A Multi-Media Field Laboratory and the Development of an Undergraduate Methods Training Course in Subsurface Hydrogeology”***, Toronto, Ontario.
- 1997 Eighth Pennsylvania Blasting Conference, ***“Advancements in Vibration Prediction and Control”***, University Park, PA.
- 1997 XXIII Convencion De Ingenieros De Minas Del Peru, ***“A Down to Earth Approach to Vibration Prediction and Control”***, Arequipa, Peru.
- 1997 1st Annual Blasting Vibration Technology Conference, ***“Advancements in Vibration Prediction and Control”***, Key West, FL.
- 1996 Society of Explosive Engineers - Great Plains Chapter, ***“Innovative Techniques for Understanding and Controlling Ground Vibrations from Production Blasting Operations”***, St. Louis, MO.
- 1996 National Stone Association, Effective Drilling and Blasting Seminar, ***“Vibration Control & Public Relations”***, Albany, NY.
- 1994 Society of Explosive Engineers - Potomac Chapter, ***“A Technique to Evaluate the Subsurface for Pre-Bid Estimating”***, Sterling, VA.
- 1993 American Society of Civil Engineers - Knoxville Chapter, ***“Seismic Techniques for Civil Engineers”***, Knoxville, TN.
- 1993 Sixth Pennsylvania Blasting Conference, ***“An Unconventional Technique to Eliminate Pre-Bid Guesswork”***, University Park, PA.
- 1985 Second Pennsylvania Blasting Conference, ***“Prediction and Control of Blast-Induced Ground Vibration: A Scientific Approach”***, University Park, PA.

# PROFESSIONAL QUALIFICATIONS OF MOHAMAD SHARIF, P.E.

## Education

- B.S. & M.E. – Civil Engineering, University of Louisville, 1981.

## Continuing Education Programs

- Computer Aided Vibration Design via Modal Analysis, University of Louisville, Louisville, KY.
- Understanding Of Modal Analysis, Bruel & Kjaer Seminar, Dayton, OH.
- Pile Integrity Test Workshop, Pile Dynamics, Inc., Cleveland, OH.
- Contemporary Seismic Design Workshop, University of Louisville, Louisville, KY
- Predictive Maintenance, Machinery Diagnostics, Vibration Reduction and Vibration Signature Analysis, IRD Mechanalysis, Columbus, OH.
- Vibration Control and Analysis, Pennsylvania State University, State College, PA.

## Professional Registration

Professional Engineer	Commonwealth of Kentucky	46292
Professional Engineer	State of Illinois	062-045987
Professional Engineer	State of Florida	46292
Professional Engineer	State of Maryland	21550
Professional Engineer	State of New Jersey	GC39588
Professional Engineer	State of New York	072844
Professional Engineer	State of North Carolina	16665
Professional Engineer	State of Ohio	E-52177
Professional Engineer	State of Texas	80505

## Professional Societies

- Chi Epsilon (National Civil Engineering Honor Society)
- ASCE (American Society of Civil Engineers)
- Vibration Institute (Vibration Society, IMOK Chapter, Indiana, Michigan, Ohio and Kentucky)

## Professional Background

### November 1984 to Present

#### Vibra-Tech Engineers, Inc. – Louisville, Kentucky

#### Present Position – Structural Dynamic Analyst

Conduct computer aided analysis of structures to determine dynamic response, including seismic response. Design isolation systems to reduce vibration transmissibility from or to machinery foundations. Responsible for preparation, scheduling and cost estimates for each project. Manage and supervise all projects, in addition to presenting written and oral reports to clients to demonstrate the company's ability to meet necessary objectives and goals in solving dynamic problems.

**January 1983 to November 1984**

**VME-Nitro Consult (Division of Nitro Nobel) – Louisville, Kentucky**

**Position - Engineer**

Primarily involved in the inspection and evaluation of structures subjected to ground vibrations produced by blasting, traffic, machinery and construction activity. Developed and implemented programs to eliminate or reduce the detrimental effects of noise and/or vibrations produced by equipment or products considered a probable harmful source to surrounding properties.

**December 1981 to January 1983**

**University of Louisville, Civil Engineering Department – Louisville, Kentucky**

**Position – Research Associate**

Developed a general dynamics analysis program for complex structural systems.

# PROFESSIONAL QUALIFICATIONS OF JONATHAN FERDINAND

## Education

- Inter-College Ecology Graduate Degree Ph. D Program – course work completed 1998.
- M.S. – Science and Ecology, Pennsylvania State University, 1996.
- B.S. – Science, Pennsylvania State University, 1991.

## Continuing Education Programs

- Structural Vibration Analysis, Design, and Troubleshooting, American Society of Civil Engineers. 3.1 CEU
- Applied Acoustics and Noise Control Theory and Applications. AVNC Consulting Engineers in Acoustics and Vibration. 3.0 CEU
- Air Dispersion Modeling-AERMOD Regulatory Dispersion Model. Trinity Consultants. 2.0 CEU
- Geotechnical Instrumentation and Monitoring Workshop, American Society of Civil Engineers. 2.0 CEU
- CR1000/Loggernet Training and Programming. Campbell Scientific, 2.8 CEU
- Visible Emissions Evaluation Program – EPA FRM 9. The Pennsylvania State University. 1.0 CEU
- OSHA 29 CFR 1910.120 40 Hr. Hazardous Waste Training
- MSHA-HAZCOM Surface, Metal, Non-Metal, Underground Safety Trained
- New York City – MTA Track Safety Training
- Philadelphia – PATCO Track Safety Training

## Professional Background

**May 2004 to Present**

**Vibra-Tech Engineers, Inc. – Hazleton, PA**

**Present Position – Vibration and Noise Specialist**

Mr. Ferdinand is responsible for developing scope of work and cost proposals for vibration, noise, dust and geotechnical monitoring projects. In addition, he completes field installations as well as data analysis and project report preparation in cooperation with our structural and geotechnical engineer.

In the area of geotechnical monitoring, Jonathan is familiar with geotechnical instrumentation including tilt beams and sensors, crack gauges (LVDT and vibrating wire), convergence meters, strain gauges, multiple point borehole extensometers, inclinometers and various fluid based settlement monitoring systems. As part of this monitoring, he is also experienced in the configuration and programming of



remote data logger systems for geotechnical data collection, as well as SQL data base and web page integration for web hosting of data.

### **Professional Experience**

- INTECH Construction, Inc.—Curtis Institute of Music, Philadelphia, Pennsylvania  
Responsible for vibration monitoring as well as bi-axial (vertical and horizontal) tilt monitoring of existing structures and PATCO subway tunnel immediately adjacent to the demolition and construction activity. All vibration and bi-axial tilt sensors are remotely monitored.
- Triton Construction Inc.—Oliverhouse Condominium Project, Brooklyn, New York  
Provide remote vibration and settlement profile monitoring within approximately two hundred and thirty linear feet of MTA subway tunnel. For settlement monitoring, a web based data collection and reporting system has been installed to provide monitoring results directly to the client. This project web site is updated every hour with the latest readings.
- Solomon R. Guggenheim Foundation—Museum Restoration Project, Manhattan, New York  
As part of the Guggenheim museum exterior restoration project, Vibra-Tech was retained to conduct long term structural monitoring prior to the restoration. In addition, a long term monitoring program was put into place after restoration work to evaluate the effectiveness of several building restoration techniques and materials. Monitoring for this project includes crack displacement, convergence measurements of walls, and strain measurements of various materials.
- WRS Compass Environmental—White Plains, New York  
During deep excavation immediately adjacent to a Con Ed substation, Vibra-Tech has provided a system of automated vertical tilt monitoring for a retaining wall near the substation and excavation. All vertical tilt monitoring data is collected via a remote data logger system equipped with a visual alarm. A web based data collection and reporting system has also been configured to provide the client with immediate access to all data and project criteria alarms for allowable wall movement. For this project, the web page data is updated every 30 minutes.
- Pennsy Supply Inc.—Small Mountain Quarry, Dorrance Pennsylvania  
Retained as consultant to determine potential noise impacts to surrounding community resulting from relocation of quarry equipment closer to residential homes. Conducted ambient noise monitoring and noise level projection analysis. Provided expert testimony to local zoning hearing board.
- St. Lawrence Cement Company—Camden, New Jersey  
Determine the noise and vibration impact that the St. Lawrence Cement Operation was having on the surrounding community, including truck noise along the designated truck route during

delivery to the plant. Vibration impact due to truck traffic was also evaluated.

- Preferred Real Estate Investment, Inc.—Conshohocken, Pennsylvania  
The purpose of this study was to record the sound and vibration levels relative to the operation of the nearby SEPTA Regional Rail, Chestnut Hill Branch. A noise and vibration assessment based on land use type was conducted as per Federal Transit Administration guidelines.
- Aquarion Water Company of Connecticut—Stamford Water Treatment Plant  
Monitored particulate matter as PM10 during blasting and construction activities during the expansion of the Stamford water treatment plant. Dust monitoring was conducted at four locations in the community surrounding the site. All PM10 levels were compared to the established criteria set for the project.
- Hines, Inc.—Devon Energy World Headquarters, Oklahoma City, Oklahoma  
In order to monitor potential ground settlement and static water level adjacent to the construction of the tower, Vibra-Tech installed three (3) Multiple Point Borehole Extensometers (MPBX) and one (1) Piezometer. Each MPBX consists of three vibrating wire transducers that detect settlement at three depths; ground surface, 10 feet, and 25 feet below the ground surface. All data for the project automatically posted to a project web site.

**REMEDIAL SURVEYING SERVICES  
FORMER MGP SITE**

**CITY OF PORT JERVIS, ORANGE COUNTY, NEW YORK**

**AN ABBREVIATED STATEMENT OF QUALIFICATIONS  
FOR**

**Thew Associates**  
**LAND SURVEYORS**

**PO Box 463  
6431 US HIGHWAY 11  
CANTON, NEW YORK 13617**

**[www.thewassociates.com](http://www.thewassociates.com)**

**GENERAL INFORMATION**

Company Name: **Thew Associates PE-LS, PLLC**

Address: **PO Box 463  
6431 US Highway 11  
Canton, New York 13617**

Contact Name & Title: **James S. Thew, PLS – Principal**

Phone Number: **315/386-2776**

Fax Number: **315/386-1012**

E-mail: **[jthew@thewassociates.com](mailto:jthew@thewassociates.com)**

Branch Office Address: **9478 River Road  
Marcy, New York 13403**

Contact Name & Title: **Robert H. Korosec, PLS – Operations Manager**

Phone Number: **315-733-7278**

Fax Number: **315-797-1957**

E-mail: **rkorosec@thewassociates.com**

Location of work to be performed from: **Canton, New York**

Organization has been in business as a service firm: **40 years**

Services Provided:

**ALTA/ACSM Land Title Surveys  
Boundary Surveys and Subdivision Design  
Topographic and Utility Surveys  
Subsurface Utility Engineering  
Concrete Investigations utilizing Ground Penetrating Radar  
Construction and As-Built Surveys  
Structural Deformation and Monitoring Surveys  
Hydrographic Surveys  
Aerial (Photogrammetric) Mapping**

**CORPORATION INFORMATION**

Type of Firm: **Professional Limited Liability Company**

Year Organized: **1972 (dba Spencer F. Thew, PE-LS)**

Date of Incorporation: **October 27, 2000**

State of Incorporation: **New York**

**STAFF INFORMATION**

Total Number of Staff by Classification:

<b>Professional Land Surveyors</b>	<b>5</b>
<b>Professional Engineers</b>	<b>1</b>
<b>Surveyors/CAD Operators</b>	<b>12</b>

## INTRODUCTION

Thew Associates PE-LS, PLLC (Thew) has been providing professional surveying services to the architectural and engineering communities since 1972. As a result of our commitment to quality and service, Thew is among the most respected surveying firms practicing in New York State.

Thew has offices in Canton and Utica, New York and provides professional surveying services throughout the Northeastern United States. Thew is also licensed to practice in the State of Vermont and Pennsylvania and has professional relationships with land surveyors licensed throughout the Northeast.

Our staff operates under the following basic premises:

- Responsiveness:

In the architectural, engineering, and development community, the topographic, utility, and/or boundary survey serves as the foundation for project development. Thew prides itself with timely response to our client's requests for proposal; assigning, planning, and executing the project efficiently; and submitting the deliverables on or before the client's deadline.



- Quality of Deliverables:

In the surveying profession, our deliverable is often a map (paper and/or electronic) or a legal description. Frequently, a prospective clients' opinion regarding the accuracy, completeness, presentation, and overall quality are assumed, and that all surveys are equal. However, our experience indicates that there is a wide variation in the quality of the deliverables. Thew prides itself on ensuring the information shown on our surveys is technically accurate, the information required by the client is present, and the presentation of the information is clear, concise, and aesthetically pleasing.

The following are five testimonials that demonstrate our dedication to quality and responsiveness. The first three testimonials were from new clients, while the fourth and fifth testimonials were from a established clients.

"...Thanks! Nick I have to tell you that you and your company are the best and most responsive surveyors I have ever worked with!" – Penny Epler-Carl, Esquire, Taconic Title Agency, LLC

"...We looked over the survey, sent to us electronically this morning, and I have to compliment you and your guys. This is one of the best surveys I've seen in a while." - Paul Whittington, Duplantis Design Group, PC

"...It was a pleasure working with you and your staff. I really appreciate the caliber of staff you provided and their hard work." – Tom Abrams, Parsons

“...Thanks very much...We really appreciate Thew's "can do" attitude. Patrick and I agree that your maps are much cleaner and easier to read than many of your competitors. We like working with your company.” – Sandra Hahn, Harter Secrest & Emery, LP

“...I think this is the first time this has ever happened. I am not going to prepare a letter for this review because there is so little that needs to be done to the map... Good work. I wish they were all this easy to review.” – Terry, Potter, PLS, New York City Department of Environmental Protection

- Client Relationships:

Building and maintaining relationships with our clients are the basis for securing a majority of our projects. Typically, once we have secured a client, that client will continue to utilize Thew to fulfill their future surveying requirements. These relationships are fostered through our responsiveness, quality of service, and the respect shown to our clients.

- Reasonable Fee:

In today's competitive business environment, professional services are frequently awarded based on the lowest fee to provide those services. Thew is committed to providing services of exceptional quality, while only requesting a reasonable fee for those services. In a competitive bid environment, our firm typically will not have the lowest fee since we will not sacrifice quality to secure a project. A majority of our projects are secured due to the quality of service rather than the cost of those services. We find that clients are willing to pay a reasonable fee for a submittal that they know satisfies their requirements.



### **CAPABILITIES**

Thew's technical staff consists of 16 people, and is capable of simultaneously mobilizing six fully equipped survey crews, while providing office support (professional oversight, project management and CAD support) for each field crew.

Productivity and efficiency are essential in successfully executing our business model. Thew invests heavily in technology to ensure that we are collecting reliable spatial information and processing that information in an efficient manner. In 1987, Thew began utilizing GPS technology as a more efficient means of collecting spatial data (in the proper environment). Our staff has been extensively educated and trained in methods and applications of GPS technology and is considered a leader in New York State in our GPS capability and the means in which we apply GPS technology. Currently, Thew owns 20 Trimble and/or Leica Dual Frequency GPS Receivers with differential positioning (RTK) capabilities.

Thew has also invested in robotic total stations, which greatly enhance productivity as a single person can collect spatial and topographic information that traditionally took a two-person crew to accomplish.

The following is a listing of equipment Thew possesses for the execution of field surveys, survey computations, and map generation.

- |                             |  |
|-----------------------------|--|
| <b>GNSS/GPS Receivers:</b>  | <ul style="list-style-type: none"> <li>3 - Trimble R8 Dual Frequency Receivers, with Differential Positioning Capabilities</li> <li>3 - Trimble 5800 Dual Frequency Receivers, with Differential Positioning Capabilities</li> <li>8 - Leica System 530 Dual Frequency Receivers, with Differential Positioning Capabilities</li> <li>6 - Leica System 300 Dual Frequency Receivers, with Differential Positioning Capabilities</li> </ul> |
| <b>Total Stations:</b>      | <ul style="list-style-type: none"> <li>1 - Trimble S3 Robotic total Station</li> <li>2 - Focus 10 Robotic total Station</li> <li>2 - Topcon GTP-3003</li> <li>2 - Topcon GTS-233 W</li> <li>2 - Leica TC-805</li> <li>1 - Leica TC-800A</li> </ul>   |
| <b>Data Collectors:</b>     | <ul style="list-style-type: none"> <li>6 - TDS Ranger with Survey Pro Software</li> <li>4 - TDS Recon with Survey Pro Software</li> </ul>  |
| <b>Utility Locators</b>     | <ul style="list-style-type: none"> <li>1 - Radio Detection, Inc. RD-8000 Radio Frequency Pipe and Cable Locator with subaquatic</li> </ul>   |
| <b>Utility Locators</b>     | <ul style="list-style-type: none"> <li>2 - Subsurface Instruments, Inc. - PL-2000 Digital Radio Frequency Pipe and Cable Locator</li> <li>2 - Schonstedt – MAC-51B Underground Utility Locator</li> </ul>  |
| <b>Plotters:</b>            | <ul style="list-style-type: none"> <li>2 - Hewlett Packard 1055CM Colored Inkjet (E-Size)</li> </ul>   |
| <b>Software:</b>            | <ul style="list-style-type: none"> <li>AutoCAD 2012 Civil 3D</li> <li>Intergraph Microstation Release 8</li> <li>Intergraph Site Works and Field Works Release 5.0</li> <li>Spectra Precision Survey Office</li> <li>Leica SKI and SKI-Pro - GPS Post-Processing Software</li> <li>Hypack and PDS2000 bathymetric data collection and post-processing software</li> </ul>  |
| <b>Specialty Equipment:</b> | <ul style="list-style-type: none"> <li>1 - Reson - Navisound 215 single-beam echo sounder</li> <li>1 - RD Instruments – Sentinel 1200kHz Acoustic Doppler Current Profiler (velocity meter)</li> <li>1 - Sensors &amp; Software – Noggin Plus 250MHz GPR Unit</li> <li>1 - Sensors &amp; Software – Conquest 1000MHz GPR Unit</li> <li>1 - Vermeer 100 Vacuum Excavator</li> </ul>   |

**WHY THEW ASSOCIATES**

As surveyors, our client deliverable is typically a map or CAD file, and clients often believe that quality among surveyors is assumed. After successfully completing our 39<sup>th</sup> year in business, we have learned that not all surveys or surveyors are created equal. Thew’s staff has been trained, and are keenly aware that responsiveness, communication, accuracy, attention to detail, and a well presented deliverable sets our firm apart from others.

We consider ourselves to be a mid-sized land surveying firm, where we have the resources to successfully execute term contracts and large projects, yet are small enough to efficiently



manage and execute those projects. Thew utilizes a field-to-finish approach with two levels of professional oversight. The Project Surveyor (licensed professional) is responsible for overall management (technical and professional) of multiple projects. A Project Manager is assigned a specific project to manage and execute under the direction of the Project Surveyor. The Project Manager assigned to a project will perform document research, establish project control, serve as a member of the field crew, perform survey computations, and generate the mapping. Throughout the execution of each project, the Project Surveyor is providing professional technical assistance and performing quality control checks (e.g. network closures, verification of computations, DTM review, and boundary line resolution). The Principal Surveyor also provides professional technical assistance throughout the process, and performs a final review of all deliverables, ensuring the mapping is accurate, well presented, and meets the client's requirements.

Open and honest, external and internal communication is essential for successful project execution. Thew's staff has been trained to communicate with our clients to provide periodic updates on project progress, issues and challenges, and overall project execution, whether positive or negative. Effective internal communication allows us to assign staff and equipment to ensure the project schedule is achieved, and allows the Principal Surveyor to ensure the final deliverable meets the client's expectations and are technically accurate.

### **SERVICE AREAS**

Thew offers a variety of services to satisfy most land surveying requirements.

#### **Thew surveying services summary:**

##### ***ALTA/ACSM Land Title Surveys***

- Commercial, retail, and industrial conveyances and mortgages.

##### ***Boundary Surveys***

- Commercial, retail, and industrial conveyances and mortgages;
- Project boundary determination for architectural planning and engineering design;
- Acquisition mapping for State agencies (e.g. Department of Transportation – highway acquisitions, New York Power Authority – transmission line acquisitions and/or right-of-ways);
- Subdivision Design, including lot configuration, septic system, stormwater retention, and roadway design; and
- Boundary line dispute resolution.

##### ***Topographic and Utility Surveys***

- Project development and civil site design;
- Municipal water distribution, sanitary sewer, and stormwater collection systems;
- Photogrammetric (aerial) mapping of large tracts or inaccessible sites; and
- Underground utility tracing, locating, and mapping.

##### ***Subsurface Utility Engineering***

- ASCE Level B and A subsurface utility surveys
- Subsurface utility tracing utilizing radio frequency (RF) devices;





- Subsurface utility identification utilizing ground penetrating radar (GPR);
- Subsurface utility excavation utilizing vacuum excavators; and
- Three-dimensional subsurface utility locating and mapping.

#### ***Concrete Investigations - GPR***

- Structural reinforcement (rebar) locating in concrete structures
- Structural reinforcement (rebar) depths in concrete
- Subsurface utility identification in concrete; and
- Void investigations

#### ***Construction Surveying***

- Layout for grading, site improvements, structures, roadways, site utilities (e.g. storm, sanitary, water, electric, natural gas, and communications), and stormwater retention facilities;
- Column and anchor bolt layout, anchor bolt as-built verification, and plumbing structural steel;
- Digital Terrain Model creation for GPS machine control and conventional or GPS staking; and
- As-built surveys of site improvements and utilities.



#### ***Geodetic Control utilizing GPS Technology***

- Community Based Network (CBN) densification utilizing static GPS surveying techniques;
- Establishing horizontal and vertical control at project sites;
- Establishing horizontal and vertical control, utilizing static and differential (RTK) GPS surveying techniques, for photogrammetric mapping; and
- GPS training seminars.

#### ***Structural Deformation Monitoring***

Monitoring surveys are offered to clients where there is a need to determine if movement is occurring in a structure due to natural or man-made causes. Our GPS equipment, coupled with conventional optical instruments can detect sub-centimeter positional shifts.

- Precise monitoring of structures for lateral or vertical movement (dams, bridges, buildings, etc.);
- Monitoring movements of unstable soils; and
- Use GPS and traditional surveying techniques to monitor movement.

#### ***Hydrographic Surveys***

- Bathymetry
  - Continuous water bottom profiling;
  - Slope monitoring; and
  - Dredge support services:
    - Pre- and post-dredge surface topography;
    - As-built surface topography; and
    - Dredge volume calculations.
- Velocity and current studies
  - Construction and remediation design data;



- Flow rate and direction determination;  
and
- Hydraulic modeling support;
- Dredge support services:
  - Pre- and post-dredge surface topography;
  - As-built surface topography; and
  - Dredge volume calculations.
- Wave height studies and monitoring
- GPS positioning
  - Centimeter horizontal and vertical accuracies;
  - Sample layout and location; and
  - Sampling vessel navigation.

#### **CORPORATE REFERENCES**

The following is an abbreviated listing of clients Thew has provided surveying services for within the previous 12 months.

**Client:** Atlantic Testing Laboratories  
**Address:** 6431 US Highway 11  
Canton, New York 13617  
**Contact:** Mr. Eric Vanalstyne  
**Telephone:** 845.691.6098  
**Project:** Structural Deformation Monitoring Services – Hoffman Street Bridge, Poughkeepsie, NY

**Client:** D.A. Collins Environmental Services, LLC  
**Address:** 269 Ballard Road  
Wilton, New York 12831  
**Contact:** Mr. David MacDougall  
**Telephone:** 518.664.9855  
**E-mail:** [dmacdougall@dacollins.com](mailto:dmacdougall@dacollins.com)  
**Services:** Topographic and Utility Survey – Skaneateles Aerodrome

**Client:** National Grid  
**Address:** 300 Erie Boulevard West  
Syracuse, New York 13201  
**Contact:** Mr. Edward J. Donegan, PLS  
**Telephone:** 315/428-5995  
**E-mail:** [edward.donegan@us.ngrid.com](mailto:edward.donegan@us.ngrid.com)  
**Project:** Topographic and Boundary Surveys

**Client:** Brookfield Renewable Power  
**Address:** 800 Starbuck Avenue, Suite 802  
Watertown, New York 13601  
**Contact:** Mr. Brian P. Donovan, PLS  
**Telephone:** 315-779-2412  
**E-mail:** [brian.donovan@brookfieldpower.com](mailto:brian.donovan@brookfieldpower.com)  
**Project:** Surveys of Erie Boulevard Hydropower, L.P. hydroelectric developments

**Client:** Parsons Engineering of New York, Inc.  
**Address:** 301 Plainfield Road, Suite 350  
Syracuse, New York 13212  
**Contact:** Mr. Tom Abrams

**Telephone:** 315/451-9560

**Project:** Topographic and Boundary Surveys – Onondaga Lake Remediation Project

### **QUALITY ASSURANCE PROGRAM**

*Thew* maintains separate Quality Assurance Programs for each of its service areas. In addition, project specific Quality Assurance Project Plans are prepared and/or utilized.

A summary statement about *Thew's* Quality Assurance Program follows:

#### **Quality Systems Management (QSM)**

Quality Systems Management at *Thew* is defined as all activities in which the company is engaged. The QSM program is a fundamental part of *Thew's* surveying protocols. The system is used to detect and prevent potential errors during project execution. *Thew's* QSM activities include preventative activities (quality control), assurance activities (quality assurance), technical competency, and corrective activities.

Preventative activities include tasks undertaken prior to initiating the projects. These include the development and consistent use of standard operating procedures, instrument preventative maintenance, calibration of instruments, training of personnel, and strict adherence to the principles of good surveying practices.

Assurance activities are those functions undertaken during project development to determine if the control systems are performing correctly. Assurance activities include the use of standards, peer review, and technical monitoring of all activities.

Technical competency may be achieved by a combination of components, including initial training, work experience, supervision of work, continuing technical and professional education, and proper professional ethics. *Thew* encourages and financially supports staff attendance at seminars, continuing education courses, and formal education.

Corrective actions are undertaken when loss of control (error) or possible error is detected somewhere in the system. Examples of corrective actions are equipment troubleshooting, equipment re-calibration, personnel re-training, updating standards and codes, and continuing education.

#### **Purpose**

It is essential that all work conducted by *Thew* is technically correct. *Thew* maintains quality manuals for the various services provided by *Thew*. The purpose of the manuals is to provide a written directive that accomplishes the following objectives:

- Promotes effective operations within and among the *Thew* staff;
- Assists staff in performing their duties; and
- Ensures that information generated is reliable and correct.

# Attachment B

## Resumes of Project Staff

**Education:**

B.S., Surveying Engineering  
University of Maine, 1991

**Professional Registrations:**

Professional Land Surveyor, New York 1996

**Continuing Education:**

Autodesk Civil 3D 2010 Essentials  
Sensors & Software, Inc. – GPR Training  
Leica Basic GPS Training  
Leica Advanced GPS Training

**Safety Education:**

10-Hr OSHA Construction Safety Training  
40-Hr HAZWOPER Safety Training  
8-Hr HAZWOPER Refresher Safety Training  
American Red Cross–CPR/First Aid Training

**Total Years of Experience:** 27

**Years with Thew Associates:** 27

As a Principal of the firm, Mr. Thew is responsible for the daily operations of the firm, to include client communication, contract negotiation, staff development, quality control and quality assurance, professional review, and project certification.

He has 27 years of experience performing topographic, boundary, subdivision, ALTA/ACSM Land Title, construction, hydrographic (bathymetric and velocity), geophysical, structural deformation, and environmental remediation surveys, ASCE Quality Level A, B and C subsurface utility investigations, and expert witness testimony.

Mr. Thew also serves as the Corporate Health and Safety Officer responsible for safety training, safety audits, accident investigation, maintaining corporate health and safety manuals and procedures, and ensuring that staff is dedicated to creating an maintaining a safe work environment.

He will serve as the Principal Professional responsible for the overall execution of the project and delivery of the submittals.

**Relevant Project Experience:**

**Reynolds Metals Company – St. Lawrence River Remediation Project**

Services: Bathymetric surveys for PAH and PCB contamination investigations  
Role: Principal Professional  
Location: Massena, New York  
Client: ALOCA, Inc.

**Former PSC&G Manufactured Gas Facility - Hackensack River**

Services: Bathymetric surveys for pre-design environmental remediation  
Role: Principal Professional  
Location: Jersey City, New Jersey  
Client: Atlantic Testing Laboratories

**General Electric Company – Hudson River Sediment Sampling Project**

Services: Coordination of three sampling vessels and GPS surveying support for five sampling vessels  
Role: Principal Professional  
Location: Hudson River, New York  
Client: General Electric Company

**Honeywell International – Onondaga Lake Remediation Project**

Services: Bathymetric survey and upland topographic survey of the Geddes Brook and Ninemile Creek  
Role: Principal Professional  
Location: Syracuse, New York  
Client: Honeywell International

**Education:**

A.A.S., Surveying Technology,  
Paul Smith's College (New York), 2002

**Professional Registrations:**

Professional Land Surveyor, New York 2012

**Continuing Education:**

Autodesk Civil 3D 2010 Essentials  
Leica Basic GPS Training  
Leica Advanced GPS Training  
HYPACK and HYSWEEP Training  
PDS Hydrographic Software Training

**Safety Education:**

10-Hr OSHA Construction Safety Training  
40-Hr HAZWOPER Safety Training  
8-Hr HAZWOPER Refresher Safety Training  
American Red Cross—CPR/First Aid Training

**Total Years of Experience:** 10

**Years with Thew Associates:** 10

As a Project Manager, Mr. Sweeney is responsible for the execution of assigned projects, to include client communication, scheduling and oversight of technical personnel, quality control and quality assurance, document research, survey computations, and mapping.

He has 10 years of experience performing topographic, boundary, ALTA/ACSM Land Title, construction, hydrographic (bathymetric and velocity), structural deformation, and environmental remediation surveys, and ASCE Quality Level A, B and C subsurface utility investigations, with a special emphasis performing hydrographic surveys.

Mr. Sweeney will serve as the Project Manager, and will be responsible for client communication, coordinating technical staff, data collection, data processing, data file preparation, and mapping.

**Relevant Project Experience:**

**W. R. Grace Superfund Site**

Services: Bathymetric and topographic surveys for pre- and post-dredge, post-backfill and final as-built surfaces  
Role: Project Manager  
Location: Acton & Concord, Massachusetts  
Client: D.A. Collins Environmental Services, LLC

**Honeywell International, Inc. — Onondaga Lake Remediation Project**

Services: bathymetric surveys of Geddes Brook and Ninemile Creek to facilitate hydraulic modeling for the pending environmental remediation  
Role: Hydrographic Surveyor  
Location: Syracuse, New York  
Client: Parsons Engineering of New York, Inc.

**Brookfield Renewable Power —Proposed Black River Hydroelectric Developments**

Services: Bathymetric transects and structural surveys to support hydraulic modeling for three proposed hydroelectric facilities at existing breached dams  
Role: Hydrographic Surveyor and Project Manager  
Location: Watertown, New York  
Client: Brookfield Renewable Power

**Central Hudson Gas & Electric - Manufactured Gas Plant**

Services: Bathymetric surveys of pre- and post-dredge surfaces, and final as-built surfaces.  
Role: Project Manager  
Location: Newburgh, New York  
Client: D.A. Collins Environmental Services, LLC

**Education:**

A.A.S., Surveying Technology  
SUNY, Wanakena Ranger School, 1999

**Continuing Education:**

Leica Basic GPS Training

**Safety Education:**

10-Hr OSHA Construction Safety Training  
40-Hr HAZWOPER Safety Training  
8-Hr HAZWOPER Refresher Safety Training  
American Red Cross—CPR/First Aid Training  
OSEA Fall Protection, Lockout/Tagout and  
Hearing Conservation

**Total Years of Experience:** 12

**Years with Thew Associates:** 10

As a Technician, Mr. Lago is responsible for the execution performing field surveys on assigned projects, to include document research, establishing control, data collection, data reduction, and survey computations.

He has 12 years of experience performing topographic, boundary, ALTA/ACSM Land Title, construction, hydrographic (bathymetric and velocity), geophysical, structural deformation, and environmental remediation surveys, and ASCE Quality Level A, B and C subsurface utility investigations.

Mr. Lago will serve as a Technician working directly under a Senior Technician responsible for execution of field surveys assigned to him.

**Relevant Project Experience:**

**Onondaga Lake Remediation Project**

Services: Bathymetric and topographic surveys of Geddes Brook and Ninemile Creek to facilitate hydraulic modeling for the environmental remediation.

Role: Technician

Location: Syracuse, New York

Client: Honeywell International

**Hudson River Remediation Project**

Services: GPS surveying support for sediment sample collection and perform topographic and bathymetric surveys.

Role: Technician

Location: Fort Edward, New York

Client: General Electric

**St. Lawrence River Remediation Project**

Services: Bathymetric and topographic surveys of pre- and post-dredge surfaces, and provide GPS surveying support and sediment sample collection.

Role: Technician

Location: Massena, New York

Client: ALCOA, Inc.

**Central Hudson Gas & Electric – Manufactured Gas Plant**

Services: Bathymetric and topographic surveys of pre- and post-dredge surfaces, and final as-built surfaces

Role: Technician

Location: Newburgh, New York

Client: D.A. Collins Environmental Services, LLC



**Education:**

A.A.S. Criminal Justice  
SUNY Canton (New York) 2007

**Continuing Education:**

Leica Basic GPS Training

**Safety Education:**

10-Hr OSHA Construction Safety Training  
40-Hr HAZWOPER Safety Training  
8-Hr HAZWOPER Refresher Safety Training  
American Red Cross–CPR/First Aid Training  
United States Power Squadrons America’s  
Boating Course

**Total Years of Experience: 3**

**Years with Thew Associates: 3**

As a Technician, Mr. Caringi is responsible for performing field surveys on assigned projects, to include document research, establishing control, data collection, data reduction, and survey computations.

He has 3 years of experience performing topographic, boundary, ALTA/ACSM Land Title, construction, hydrographic (bathymetric and velocity), geophysical, structural deformation, and environmental remediation surveys, and ASCE Quality Level A, B and C subsurface utility investigations.

Mr. Caringi will serve as a Technician working directly under a Senior Technician responsible for execution of field surveys assigned to him.

**Relevant Project Experience:**

**W.R. Grace Superfund Site**

Services: Bathymetric and topographic surveys for pre- and post dredge, post-backfill, and final as-built surfaces.  
Role: Technician  
Location: Acton & Concord, Massachusetts  
Client: D.A. Collins Environmental Services, LLC

**Central Hudson Gas & Electric – Manufactured Gas Plant**

Services: Bathymetric and topographic surveys for pre-and post, post-backfill, and final as-built surfaces.  
Role: Technician  
Location: Newburgh, New York  
Client: D. A. Collins Environmental Services, LLC

**Onondaga Lake Remediation Project**

Services: Bathymetric and topographic surveys of Geddes Brook and Ninemile Creek to facilitate hydraulic modeling for the environmental remediation.  
Role: Technician  
Location: Syracuse, New York  
Client: Parsons Engineering of New York, Inc.

**St. Lawrence River Remediation Project**

Services: Bathymetric surveys of pre- and post-dredge, post-backfill, and final as-built surfaces  
Role: Technician  
Location: Massena, New York  
Client: ALCOA, Inc.



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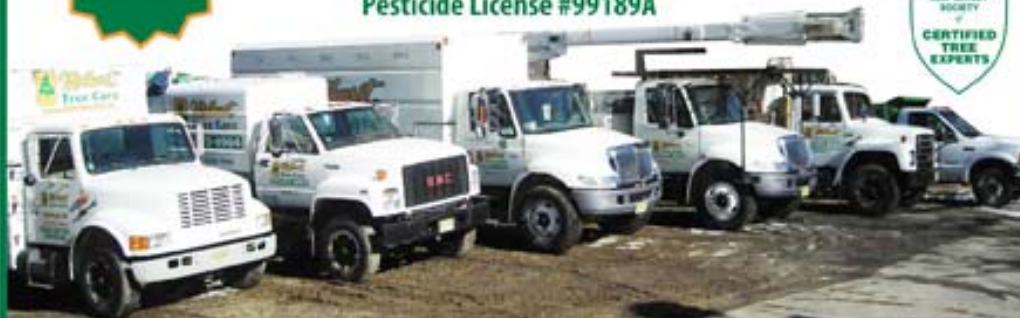
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## History

Warner paving & Excavating is a general contracting company based in Milford, PA. Vince Bassani, our manager and field supervisor has over 37 years of paving & general contracting experience. Both Vince and Dave Malzone, our general foreman do all of our estimating. Here at Warner Paving there are no salesmen making promises that can't be kept. The person that gives you your quote will be there to do your job. We stand behind our work. Also, unlike other companies, we are equipped to do the job right. As you will see in our video, we remove many large surface rock which can become a major problem within a year after paving. Most companies do not have the proper equipment onsite to deal with such problems and pave over them. We treat every home as if it were our own.



We also believe in honesty and integrity, We will never try to talk you into something you do not need. We are fully insured and licensed by the state of Pennsylvania. (lic. # PA009255 ) A certificate of insurance is available upon request. As you will see, we are a full service company in all areas of general contracting. from paving to modular home construction, we do it all. And now, through our affiliation with E-PIPHANY, we also offer home and commercial power generation. (see E-PIPHANY link on this site). Warner Paving also provides worry-free complete property and building management. With our parking lot maintenance services we will perform monthly safety inspections to avoid costly "trip & fall " lawsuits for our commercial customers. A report with cost to repair will be faxed that same day and upon receipt of a work order, corrective actions are taken within 24 hours.



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## About Us

Hayward Baker Inc. (HB) is North America's leading geotechnical contractor, offering the full range of pre and post construction services for foundation rehabilitation, settlement control, liquefaction mitigation, soil stabilization, groundwater control, slope stability, excavation support and underpinning. HB is ranked #1 Specialty Excavation/Foundation Contractor by Engineering News-Record, year after year.

Headquartered in Odenton, Maryland, HB has over 20 offices across the United States, as well as locations in Central and South America, and Canada. Since its inception, HB has established itself in the forefront of geotechnical specialty contracting, evolving and expanding to meet the increasingly complex needs of the construction community. HB is capable of offering full Design-Build services for virtually any geotechnical construction application.

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Hayward Baker North American Headquarters

1130 Annapolis Road Suite 202 Odenton, Maryland 21113 Toll Free: 800-456-6548 Tel: 410-551-8200

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**WATER STREET M.G.P. SITE**

Location - Troy, NY

Owner - National Grid, Syracuse, NY (315) 428-5548

- Drill 30" diameter holes in earth and in rock along the Hudson River for construction of retaining wall.

Contractor - D.A. Collins Construction Corp. – Dave McDougal (518) 664-9855

Summer 2003

**BASKET CREEK RETAINING WALL**

Location – Hancock, NY

Owner – Delaware County DPW (607) 746-2128 – Phil Pierce

Engineer – U.S.A.C.E. – New York, NY (212) 264-9056 – Rodney Abrams

- Drilling of 26" diameter holes in earth and rock for construction of soldier pile retaining wall.

Contractor - D.A. Collins Construction Corp. – Joe Stadelmeyer (518) 664-9855

Summer 2005

**RECONSTRUCTION OF LIME KILN BRIDGE**

Location – South Burlington, VT

Owner – Vermont Agency of Transportation, Montpelier, VT – (802) 828-2561 - Chad Allen

- Drill 24" diameter holes in rock for bridge reconstruction.

Contractor - Kubricky Construction Corp. – John Walsh (518) 792-5864

Fall 2005

**CONSTRUCTION OF SECANT PILE WALL**

Location – 133-145 West 22<sup>nd</sup> Street, New York, NY

Owner – Ascend Group – 826 Broadway, NY, NY (212) 941-9399 – Steve Talay

Engineer – Mueser Rutledge Consulting Engineers – (917) 339-9300 – Tany Canale

- Drill 26" diameter holes in rock for support of excavation using secant piles.

Contractor – John Civetta & Sons – Bronx, NY – (718) 589-9000 – John Civetta

Fall 2006

**OSWEGO RIVERBANK STABILIZATION**

Location – Oswego, NY

Owner – City of Oswego, NY – (315) 342-8175 – Mike Riley

- Drill 24" diameter holes in earth and rock for permanent soldier pile retaining wall.

Contractor – Slate Hill Contractors – (315) 672-8055 – Jeff Hanlon

Spring 2007

**HUDSON RIVER SEDIMENT REMEDIATION - PHASE I FACILITY SITE WORK**

Location – Ft. Edward, NY

Owner – General Electric Company

- Drill 24" diameter holes in earth and in rock for construction of unloading and work wharves as well as staging and turning dolphins.

Contractor - D.A. Collins Construction Corp. – John Walsh (518) 664-9855

Summer 2007

## **EXHIBIT 4**

### ***LKD Information***

## ECO-CAL® LKD (Adams, MA) Calcium Carbonate Co-Product Series

Specialty Minerals' ECO-CAL® LKD is a co-product generated during the calcination of calcite ore mined in Adams, MA. ECO-CAL® LKD, commonly referred to as lime kiln dust (LKD), can be used in a myriad of applications (see below) as well as a lime replacement.

- cement
- waste sludge treatment - municipal, paper mills, heavy metals, pathogen treatment
- waste water treatment
- pH stabilization of sludge and ash
- acid neutralization
- soil stabilization
- flue gas desulfurization
- landfill capping
- agriculture (soil treatment)

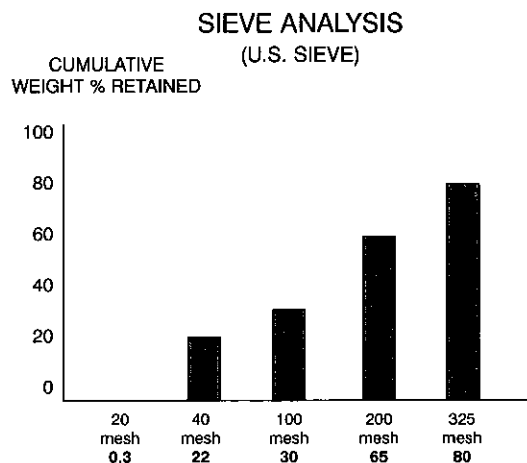


### Typical Properties

Specific Gravity	.....	2.7
Dry Brightness (Hunter Y, Rd value)	.....	74
Bulk Density (pounds/ft <sup>3</sup> ) poured	.....	75-80
(pounds/ft <sup>3</sup> ) tapped	.....	95-100

### Chemical Composition (typical)

Calcium Carbonate	CaCO <sub>3</sub>	61%
Total Calcium Oxide	CaO	56%
Available Calcium Oxide	CaO	27%
Magnesium Oxide	MgO	1%
Moisture (% weight loss @ 110° C)	H <sub>2</sub> O	<0.1%
Loss on Ignition L.O.I.		26
Effective Neutralizing Value		89%
Total Neutralizing Value		103%



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