

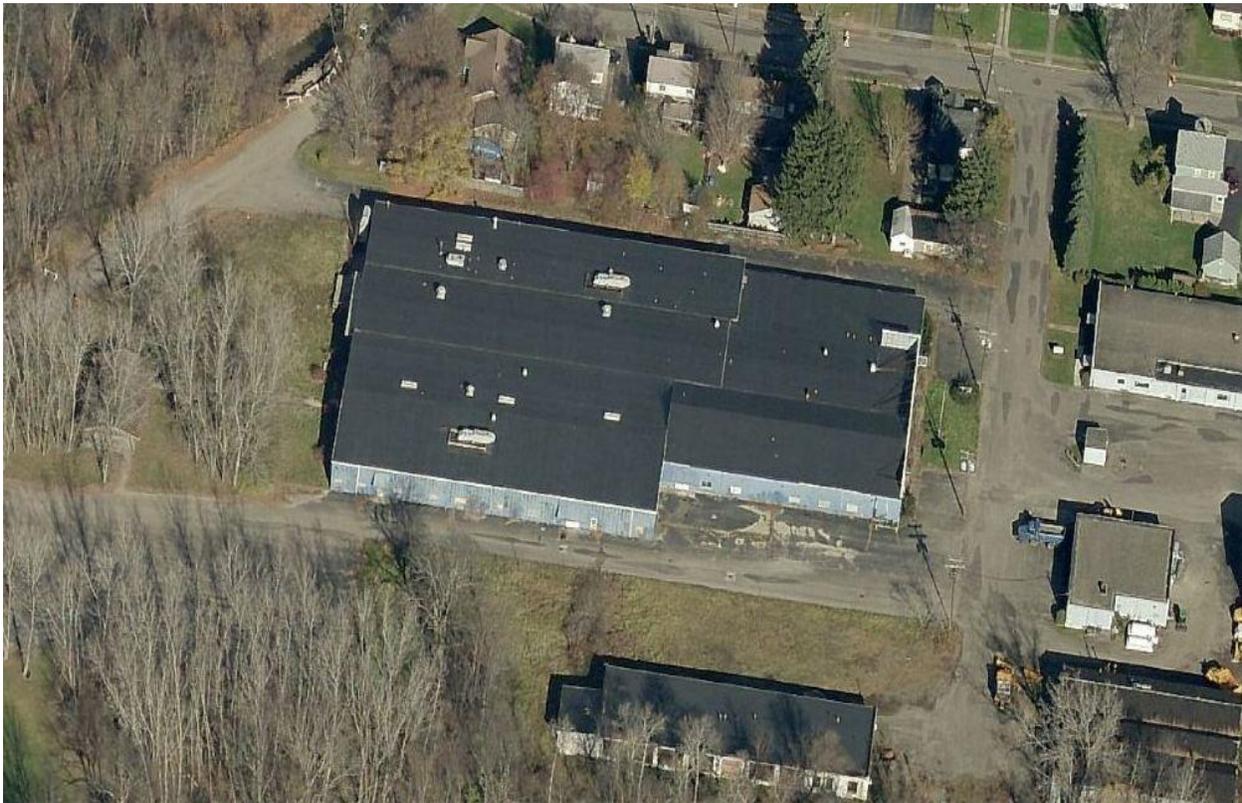


BERGMANN
ARCHITECTS ENGINEERS PLANNERS

DASNY - GOWANDA

VOLUNTARY CLEANUP PROGRAM SITE NO. V-00463-9

ADDITIONAL SUBSURFACE INVESTIGATION PLAN



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1.0 INTRODUCTION

Bergmann is submitting this Additional Subsurface Soil Investigation (ASIP) Work Plan at the former Gowanda Day Habilitation Center facility at 4 Industrial Place, Gowanda, New York (Site). The ASIP has been prepared on behalf of the Dormitory Authority of the State of New York (DASNY) and the New York State Office of People with Developmental Disabilities (OPWDD). The OPWDD, as the volunteer, entered into a Voluntary Cleanup Agreement (VCA) on August 16, 2001 with the New York State Department of Environmental Conservation (NYSDEC) to conduct investigations and implement remedial measures in accordance with VCA Site No. V-00463-9.

Residual concentrations of chlorinated solvents remain in the source area located on the south side of building and also at a limited down gradient area along the property line with residential properties on Torrance Place. The Site building is currently vacant and was formerly used as a learning center that included a maintenance/machine shop at the south side of the building, believed to be the source of trichloroethene release during previous ownership of the site. The building and associated property of the Site are presented on Figure 1 – Site Vicinity Map.

This ASIP was prepared based on fluctuating levels of volatile organic compounds (VOCs) in groundwater samples taken during routine quarterly sampling events. VOC levels have shown a historic pattern of increasing with higher groundwater levels and decreasing with lower groundwater levels. This historic trend suggests that the VOC contamination may be residual within the soil, specifically in source areas. As part of the ASIP, Bergmann proposes to collect soil samples to evaluate this potential condition of VOCs in soils within localized areas.

The elements of the scope of work detailed in this ASIP were discussed with the NYSDEC and DASNY during a June 26, 2018 telephone conversation and previous written correspondence requesting proposed additional subsurface investigation activities. The specific details and requirements for the methods and procedures to implement the proposed investigation are presented in this ASIP.

1.1 BACKGROUND

The Gowanda Day Habilitation Site consists of a 5.94-acre parcel located at 4 Industrial Place with a building previously used by several manufacturing operations during several time periods between circa 1948 and 1987 followed by renovations during 1987-1988. New York State agencies have occupied the building since 1982. New York State acquired the parcel in 1989. The building was most recently operated by the OPWDD as a Day Habilitation Center for mental care clients from 1989 through 2001 and was formerly known as Western New York Developmental Disabilities Services Office. In April 2001, on-site operations ceased. The nature and extent of contamination at the Gowanda Day Habilitation Center was documented as part of the 2003 Site Investigation and 2004 Supplemental Site Investigation reports. Trichloroethene (TCE) was the most commonly detected VOC in the subsurface soil and groundwater samples. TCE degradation products Cis-1,2-Dichloroethene (Cis-DCE), Trans-1,2-Dichloroethene (Trans-DCE), and Vinyl Chloride (VC) were also detected.

A Groundwater Treatment System (GTS) and Soil Vapor Extraction System (SVES) were activated on May 10, 2005 as Interim Remedial Measures (IRM). An additional groundwater recovery well, designated G-3, was installed outside the building and adjacent to MW-17 in November 2008. The GTS (pump and treat) consisted of seven groundwater recovery wells, an air compressor, a network of controller-less pneumatic pumps and an air stripper treatment system to process recovered groundwater. Recovered groundwater was pumped to the equalization tank for settling of sediment and discharged to the Village of Gowanda Sewage Treatment Plant (STP) via the sanitary sewer in accordance with a Gowanda Sewer Use Permit. The Village of Gowanda requires that an annual discharge report be submitted, detailing the volume of water collected, treated and discharged to the sewer. The air stripper unit was previously used to remove VOCs prior to discharge and the air



discharged from the air stripper was routed to the SVES carbon vessels for treatment prior to atmospheric discharge. In January 2008 the building was decommissioned. The GTS was winterized with the addition of heat tape and insulation to conveyance lines and the installation of an independently operated suspended heater in the treatment area for the GTS and SVES that is located in the former Maintenance and Machine Shop.

The groundwater quality is monitored on a quarterly basis from monitoring wells and recovery wells shown on Figure 2 – May 2018 Distribution of Total Volatile Organic Compounds in Groundwater in Monitoring Wells and Figure 3- May 2018 Distribution of Total Volatile Organic Compounds in Groundwater in Recovery Wells. Groundwater Contour maps are generated from depth to water measurements collected during each monitoring event, see Figure 4 - May 2018 Groundwater Contour Map.

1.2 SUMMARY OF RECENT GROUNDWATER QUALITY

The Second Quarter (May) 2018 groundwater monitoring event was conducted on May 30, 2018. Total VOCs were detected with concentrations of 1,110 µg/L and 489 µg/L in the groundwater samples collected from two (2) source area monitoring wells MW-1 and MW-11, respectively. VOCs were detected in the down gradient, northern property line area with concentrations of 77 µg/L and 112.5 µg/L in monitoring wells MW-6 and MW-17, respectfully.

Residual concentrations of VOCs are distributed in the dissolved phase groundwater plume as shown on Figure 3 and Figure 4. The concentrations of VOCs throughout the majority of the groundwater plume down gradient of the source area and up gradient of the down gradient property line area range from Non-Detect (ND) (MW-15) to 125.4 µg/L (DR-3).

The individual VOCs detected in the groundwater samples generally include Trichloroethene (TCE), Cis-1,2-Dichloroethene (Cis-DCE) and Trans-1,2-Dichloroethene (Trans-DCE). The sum of the detections of these VOCs is equal to the Total Volatile Organic Compounds (TVOCs) in each sample. The distribution and concentrations for these TVOCs is further discussed below and shown on Figure 3 and on Figure 4.

Trichloroethene (TCE)

TCE was detected in thirteen (13) of the May 2018 groundwater samples from monitoring wells / recovery wells with concentrations ranging from 1, 100 µg/L (DR-1) to 6.3 µg/L (G-1). Trichloroethene is the second most frequently detected VOC and was believed to be the released chemical in the source area, at the building maintenance/ machine shop

Cis-1,2-Dichloroethene (Cis-DCE)

Cis-DCE is the most frequently detected VOC and is a break down product of TCE. C-1,2-DCE was detected in thirteen (13) of the May 2018 groundwater samples from monitoring wells / recovery wells with concentrations ranging from 219 µg/L (DR-1) to 5.8 µg/L (MW-14).

Trans-1,2-Dichloroethene (Trans-DCE)

Trans-DCE was detected in two (2) of the May 2018 groundwater samples from monitoring wells / recovery wells. The concentration of Trans-DCE at MW-17 was 7.5 µg/L and the concentration at DR-3 was 9.4 µg/L.

The current size of the groundwater plume and type of VOCs detected has substantially been reduced in extent and concentration from seventeen (17) years of active remediation. In general, the current detection of VOCs in groundwater appears to be limited to persistent concentrations and distribution within two (2) proposed investigation source areas, see Figure 5 – Proposed Soil Boring Location Map.



1.3 SUMMARY OF GROUNDWATER FLOW

A groundwater contour map was prepared and indicates the groundwater flow pattern for May 30, 2018. The groundwater contour map is based on calculations of groundwater elevations from depth to water measurements in nineteen (19) monitoring wells. The May 2018 groundwater contour map shows a flow pattern similar to the groundwater flow configuration observed historically since 2002. The general groundwater flow is in a northerly direction. Torrance Place is hydraulically down gradient from the Day Habilitation Center building. The May 2018 depths to groundwater range from 6.12 ft. below ground surface at MW-1 at the south side of the building to 13.10 ft. below ground surface at MW-17 located at the northwestern property line. The average depth to groundwater was 8.89 ft. below ground surface.

2.0 SCOPE OF INVESTIGATION

The primary objective of the proposed subsurface investigation is to evaluate the soil quality for VOCs in the two (2) source areas. There is a potential for VOCs in these soils that may impact the groundwater from cross-media transport during seasonal filtrations in ground elevations. Bergmann is proposing the installation of ten (10) soil borings in the two (2) source areas to evaluate this potential condition. The proposed borings are as followed:

- Five (5) borings installed in the source area with the historically highest chlorinated VOC concentrations (MW-1, MW-11, and DR-1 source area).
- Five (5) borings in the down gradient source area (MW-17 area), north along Torrance Place.

The investigation detailed in this ASIP includes the installation of ten (10) test borings (soil borings) named SB-01 through SB-10. Soil borings will be installed by TREC Environmental, Inc. (TREC) of Spencerport, New York using a truck mounted direct push drill rig under the supervision of a Bergmann Professional Geologist and Environmental Scientist. The truck mounted direct push drill rig will be used both inside and outside and will be able to fit into a standard 30-inch wide door. In addition, a survey will be conducted by TREC to locate all underground utilities prior to any subsurface investigation. Bergmann will have a Professional Geologist (PG) on site during all investigation activities to oversee the investigation work and log soil borings at each boring location. All equipment used in the direct push rig that makes contact with soil will be decontaminated between each boring to prevent cross-contamination. The approximate locations of the soil borings are presented on Figure 5. Actual boring locations will be determined in the field and measured for final reporting and mapping. Soil borings will be advanced to completion depths above the groundwater table levels in comparison to the historic average high water table, where higher levels of chlorinated VOCs were detected. The nearest wells to each proposed soil boring will be measured on the days of soil boring installation to allow for sample collection at depths above the groundwater table. Each soil sample will be screened using a photoionization detector (PID) meter and readings will be recorded on the boring logs.

One (1) soil sample (ten total samples) will be taken at each boring location based on PID readings and observed groundwater levels. Bergmann will also consider collection of soil samples based on historic groundwater levels in order to evaluate the potential soil zone of residual contamination. Therefore, the anticipated target zone for sample collections is from depths ranging from two (2) to ten (10) feet.

Samples will be submitted under chain-of-custody documentation to Paradigm Environmental Services, Inc. of Rochester, New York, for analysis in accordance with VOCs via EPA Method, 5035 and 8260. An Additional Subsurface Investigation Report will be prepared that presents the investigation findings and recommendations. The report will include tables, figures, and supporting appendices (boring logs, analytical reports).



Bergmann contacted the Village of Gowanda and spoke to members of the Department of Water and Sewage. The Town informed Bergmann that the Town does not own the sewer line that runs under the access road in the northern portion of the property. Therefore, the owner of the property is responsible for the access road and all utility lines underneath the road. Due to the fact that the town has no ownership or authority over the sewer lines on the site, the Town will not be notified of any work described in this ASIP. Investigative work conducted near the impaired road and underground sewer line will be completed in a manner that does not create further damage to either road or sewer line. A copy of this report will not be sent to the Town unless requested by DASNY, NYSDEC, or OPWDD.

3.0 ENVIRONMENTAL SETTING

The building and site's physical setting is in a former industrial area adjacent to residential properties. The majority of the Site is occupied as a developed former industrial facility with parking lots, roadways, and some landscaped areas that are grass covered. The ground surface topography in the vicinity of the Site is generally flat and the overburden groundwater flow is generally north.

3.1 GEOLOGY AND HYDROGEOLOGIC SETTING

Subsurface geologic units present at the Gowanda Day Habilitation Center site include the following in descending order:

- Flood plain deposits consisting of fine sand, silt, and clay.
- Alluvium deposits from a fluvial depositional regime, consisting of fine gravel, sand, and silt.
- Glacial till (lodgment or ablation-type glacial till).
- Bedrock, consisting of Devonian-age shale and siltstone deposits (not encountered).

A filled-in stream channel on the top of the glacial till surface also is apparent at the study site, as an elongated trough or depression. This feature may be a former stream channel that scoured into the glacial till surface, and was subsequently filled in with permeable alluvial deposits. This apparent trough is oriented in a southwest-to-northeast direction beneath the Gowanda Day Habilitation Center building.

Groundwater occurs in the alluvial sand and gravel unit under unconfined (water table) conditions with saturated thickness of the aquifer ranging from approximately 8.6 to 10.8 feet. The saturated thickness of the aquifer is greater at the southern portion of the study site, and thinner at the eastern and northern areas. Groundwater flow direction is in a generally northerly direction. The aquifer likely discharges either into Cattaraugus Creek or into outwash and flood plain deposits approximately 2,400 feet north of the subject parcel.

The 2002 SI report determined hydraulic conductivity for groundwater monitoring wells range from 1.001×10^{-3} to 1.403×10^{-3} cm/sec (2.838 to 3.978 ft/day). Groundwater seepage velocity in the direction of flow was estimated at 0.281 to 0.327 feet per day based on aquifer testing at the monitoring wells. Recharge to the water table aquifer at the subject parcel occurs predominately from up-gradient sources to the south. Although local vertical infiltration of precipitation can occur, the presence of asphalt and the building footprint reduces such an effect.

3.2 POTENTIAL RECEPTORS



Underground utilities that are below the groundwater table may be considered potential receptors. Historically, impact to utilities in the source area have been limited by migration control through the use of the groundwater pump wells and groundwater recovery network associated with the Site GTS. Since the system deactivation, the possibility exists that the sewer line located along the north side of the building in the roadway that adjoins Torrance Place is a potential receptor from plume migration. A section of the sewer is within the down gradient source area where proposed soil borings are planned.

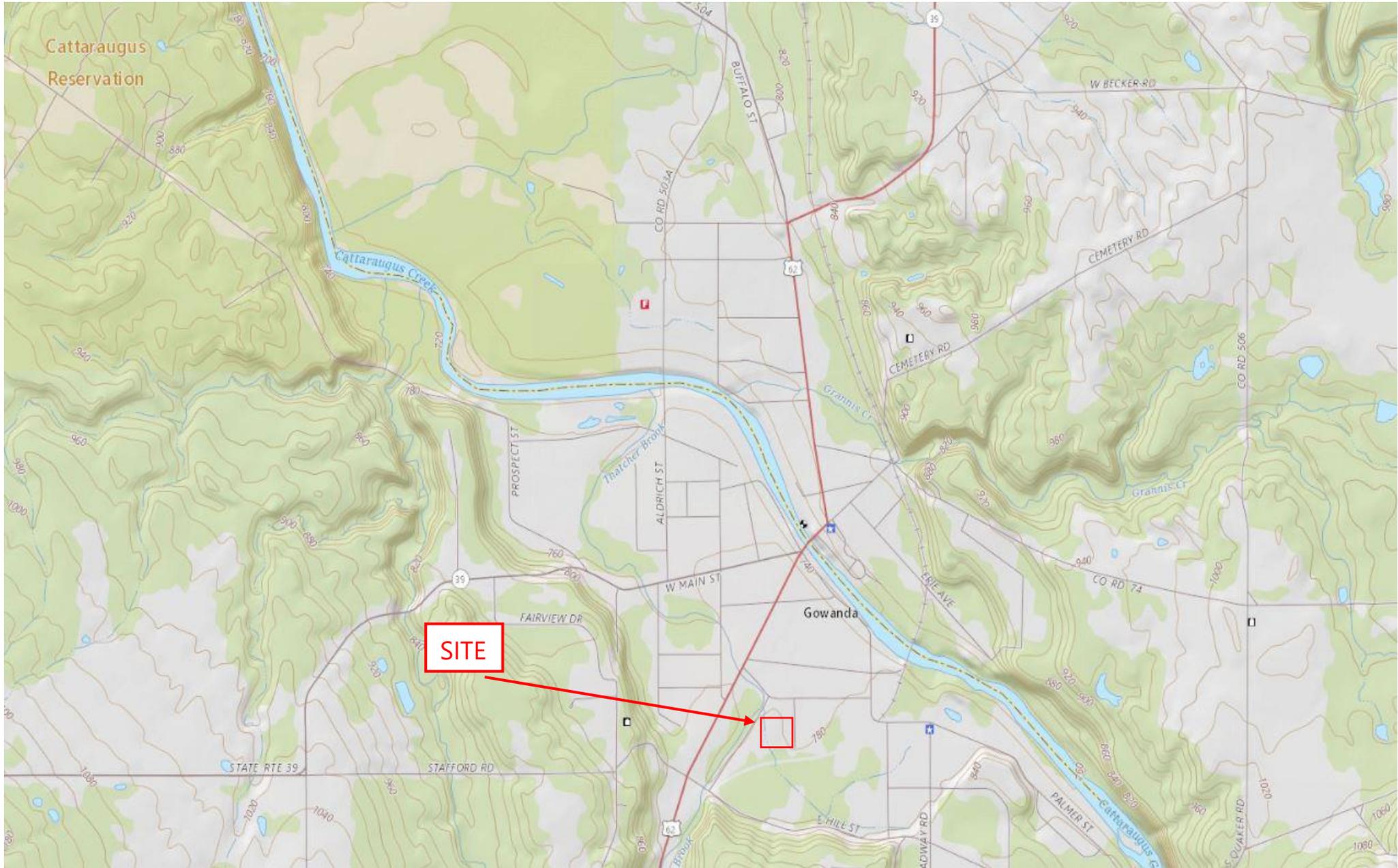
4.0 HEALTH AND SAFETY

A site health and safety plan (HASP) and a job site analysis (JSA) will be developed for Bergmann employees to be implemented during the field portions of the subsurface investigation activities. The HASP may be updated during the remediation project work, as necessary, based on the building conditions. The HASP will also be maintained on-Site during the remediation activities. A field technician, Professional Geologist, or representative will act as an on-Site health and safety coordinator for Bergmann personnel. The contractor authorized for this project will be responsible for their HASP and provide a copy to Bergmann prior to start of the project.

Prior to the start of daily work, Bergmann will have a toolbox safety meeting on site to discuss potential hazards that may be encountered during daily investigation activities.



FIGURE 1
SITE VICINITY MAP



DASNY Gowanda Day Habilitation Center

4 Industrial Place
Gowanda, New York



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REVISIONS				
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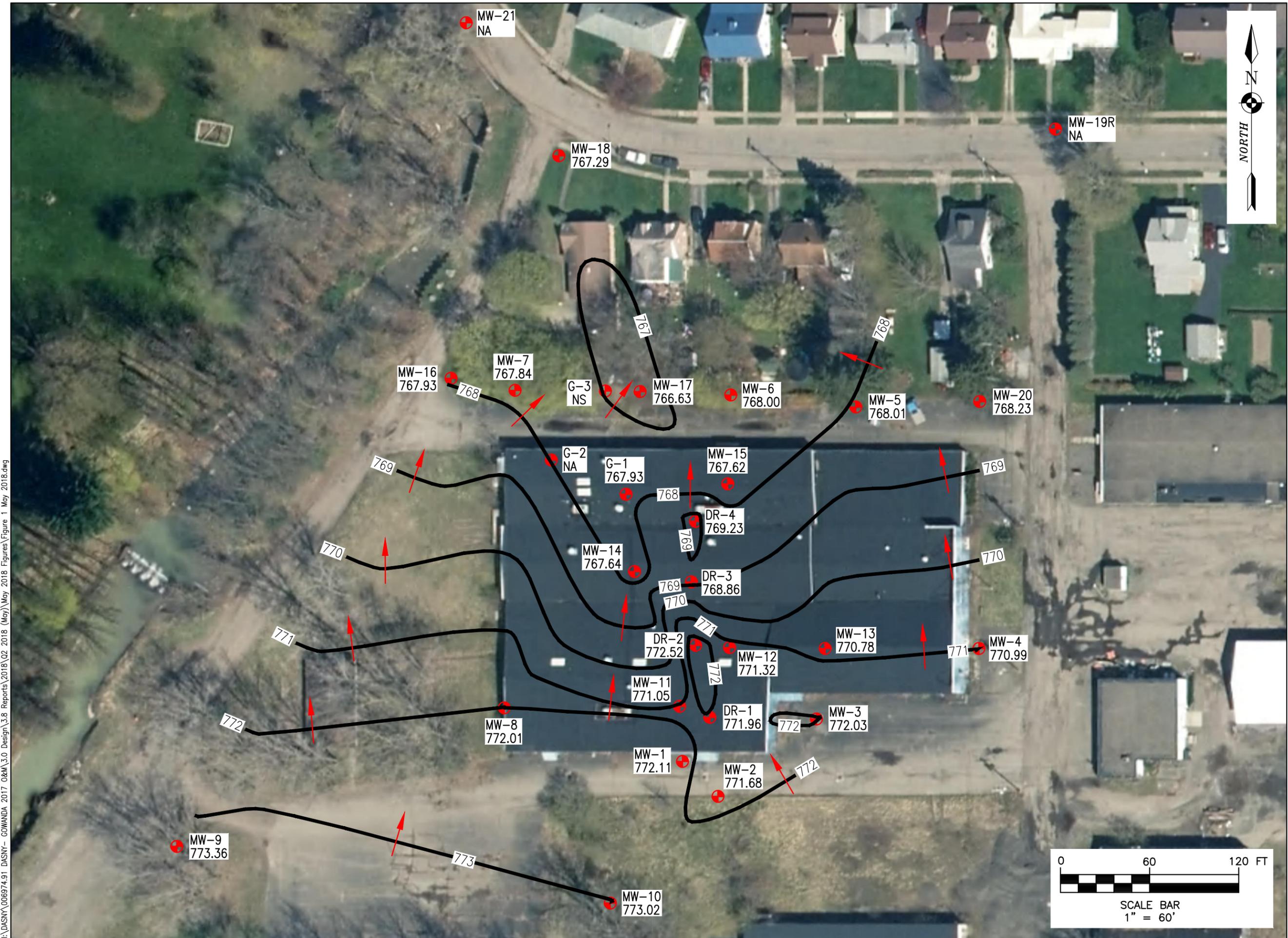
Note:
Unauthorized alteration or addition to this
drawing is a violation of the New York State
Education Law Article 145, Section 7209.

Project Manager: S. DEMEO	Checked By: S. DEMEO
Designed By: C. WOOD	Drawn By: C. WOOD
Date Issued: 06/21/2018	Scale: 1" = 60'
Project Number: 6974.91	

MAY 2018 WATER LEVEL CONTOUR MAP

Drawing Number:

FIGURE 2



I:\DASNY\006974.91_GOWANDA_2017_06\3.0 Design\3.8 Reports\2018\02_2018 (May)\May 2018 Figures\Figure 1 May 2018.dwg

DASNY

**Gowanda Day
Habilitation Center**

**4 Industrial Place
Gowanda, NY**



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Figure 3

**May 2018
Distribution of
Total Volatile
Organic Compounds
in Groundwater:
Monitoring Wells**

0 25 50 75 100

Feet



DASNY

**Gowanda Day
Habilitation Center**

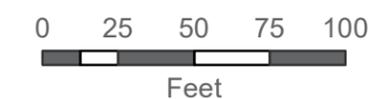
**4 Industrial Place
Gowanda, NY**



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Figure 4

**May 2018
Distribution of
Total Volatile
Organic Compounds
in Groundwater in
Recovery Wells**



DASNY

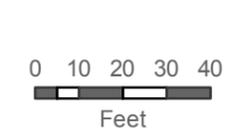
**Gowanda Day
Habilitation Center**

4 Industrial Place
Gowanda, NY



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Figure 5
Proposed
Additional
Investigation
Soil Boring Plan

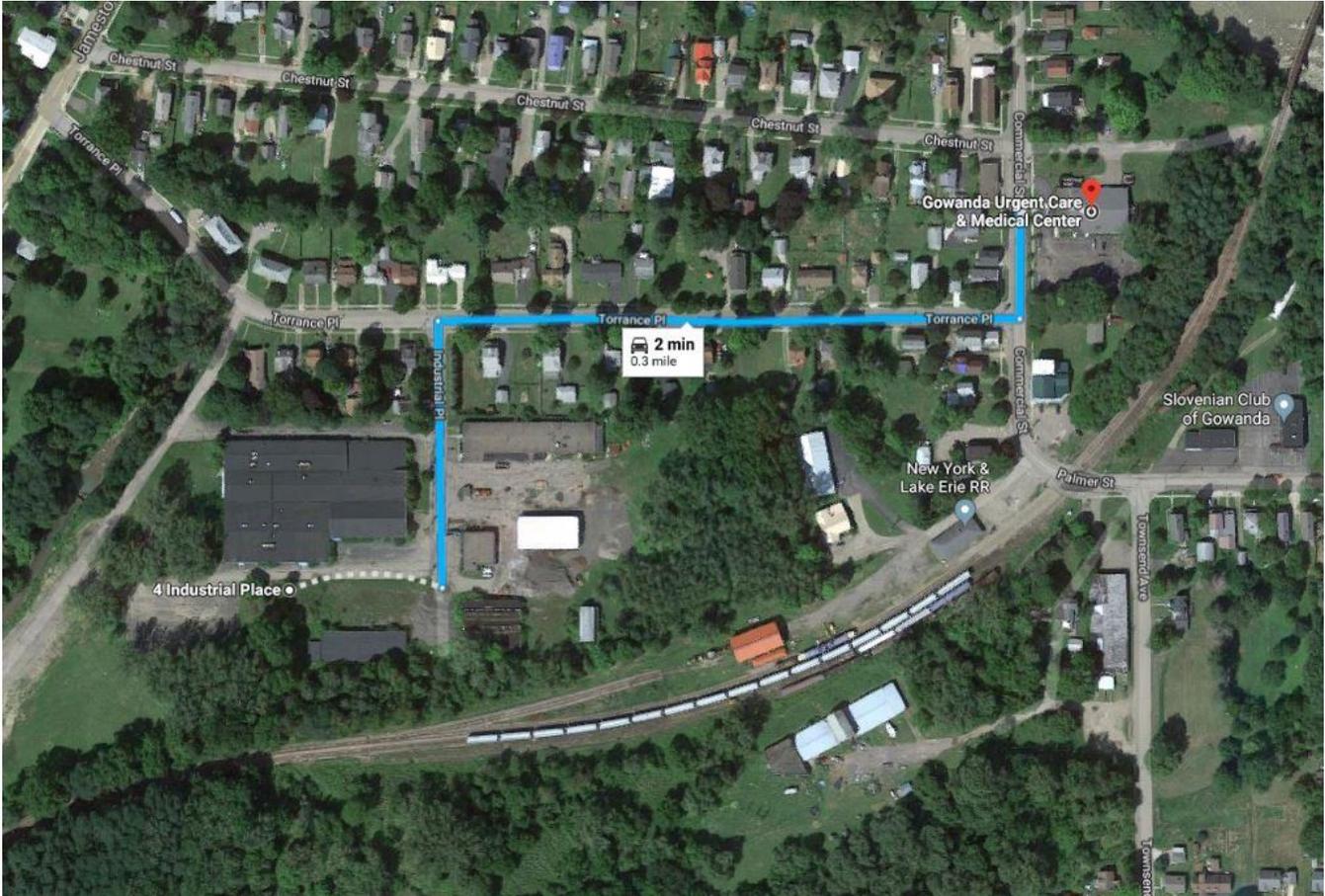




Site-Specific Health and Safety Plan

6974.96 – Additional Subsurface Investigation Plan

Gowanda, New York



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Attachments:

Attachment 1 – Emergency Routes, Driving Directions, and Maps

Attachment 2 – Site Specific Job Safety Analysis

Attachment 3 – Emergency Contact List



1.0 INTRODUCTION

Bergmann has prepared this Site Specific Health and Safety Plan (HASP) for work tasks associated with the planned investigative work detailed in the Additional Subsurface Investigation Plan dated July 20, 2018. The on-site cleanup work tasks includes soil boring drilling and soil sample collection. Historically, volatile organic compounds (VOCs) been detected in soil on-site.

This plan outlines health and safety procedures, personal protective equipment (PPE), and field monitoring equipment required for monitoring the performance of health & safety requirements during the proposed investigative sampling and analysis activities. The details outlined in this HASP are intended to minimize the potential for injury or exposure to contaminants of concern (COCs) to Bergmann employees conducting work on the site.

1.1 HEALTH & SAFETY PLAN OVERVIEW

This HASP has been prepared for Bergmann personnel for activities conducted during the proposed investigative site work. The procedures and PPE described in this plan were developed after reviewing historic information regarding potential hazards that may be encountered during the proposed investigative work. The purpose of this HASP is to:

- Establish personnel safety/protection standards that meet or exceed the Occupational Safety and Health Administration (OSHA) Regulations;
- Define responsibilities of different organizations and personnel with contact information;
- Provide a map route to the nearest hospital (cover) or Urgent Care Facility;
- Establish an emergency contact list;
- Establish safe operating procedures relative to the conditions encountered at the project work area;
- Define the project work area;
- Provide for anticipated contingencies that may arise during the course of remediation work; and
- Modify the HASP in response to new environmental data or conditions encountered during implementation of the remedial action.



2.0 SITE ACCESS & PERSONNEL

Bergmann personnel prior to arriving at the project work area must read, ask questions, understand, and agree to follow the site health and safety protocol as outlined in this HASP. Bergmann personnel will do so by signing the acknowledgement located on the final page of this HASP. This HASP only pertains to Bergmann personnel.

Bergmann personnel entering the project work area at the Site must follow this HASP.

2.1 SITE ACCESS

Site access will be given to Bergmann personnel, the drilling contractor, and associated field monitoring contractor by the local client contact. The drilling and field monitoring contractors are responsible for providing a health and safety plan that meets their construction work task, safe work area and securing the project work area during work hours. The development of this document was not required to and has not evaluated the health and safety of other personnel or contractors that may be present within the work zone or on the work site.

2.2 SITE SPECIFIC HEALTH & SAFETY PERSONNEL

Bergmann is responsible for the health and safety of Bergmann personnel. This responsibility includes:

- Providing overall health and safety oversight for the project;
- Preparing and/or reviewing potential changes to this HASP and edit a task-specific addendum to the HASP, if required; and
- Monitoring health and safety performance.
- Upon completion of the first boring the efficacy of this plan and the ongoing work should be evaluated and changes to this plan made as needed.

One (1) person may be designated as having the responsibilities of the key personnel listed below for this project. A description of the responsibilities of the key personnel involved in the HASP program is presented below.

2.3 PROJECT MANAGER

The Project Manager (PM): Ari Cheremeteff will assist with management of on-site work tasks and can be reached at 585-498-7952. Ari will be responsible for:

- Managing the planned work requirements so that work performed adheres to the outlined health and safety procedures;
- Provide guidance so that personnel follow health and safety procedures;
- Review daily work activities and field conditions encountered that may result in potential injury or exposure to contaminants of concern (COCs) as identified during project work; and
- Provide notification of unsafe conditions noted during fieldwork to Site owner and contractor.



2.4 SITE HEALTH AND SAFETY OFFICER

The Site Health and Safety Officer (SHSO): Steve DeMeo, P.G. will be responsible for the HASP implementation by the on-site representative who will be present during the majority of the field phases of the project. Steve can be reached at 585-498-7805 and will be responsible for the ensuring the execution of the following tasks:

- Implementing the HASP;
- On-site maintenance of a daily record (if relevant to health and safety at the project site) of personnel activities, monitoring activities and results, exposure incidents, and personnel protection equipment usage;
- Monitoring anticipated hazards and propose modifications (if necessary) for the level of personnel protection and/or work procedures;
- Advising the PM on work activities completed and proposed work tasks or conditions which may impact health and safety requirements;
- Having copies of this HASP available on-site for review and provide copies of 40-Hour HAZWOPER certificates to authoritative agencies by request; and
- Record daily weather conditions (e.g., temperature, wind speed/direction, etc.) if these conditions are relevant to health and safety at the project site.

Steve has the authority to suspend work activities (stop work authority) if it is felt that the Site or weather conditions may adversely affect personnel health and safety. The SHSO will notify the PM, drilling and field monitoring contractors, and DASNY of such actions.

2.5 ON-SITE WORKERS

Bergmann project personnel involved in the proposed remediation activities are responsible for:

- Reading, understanding, and complying with the requirements of the HASP;
- Taking reasonable precautions to prevent incidents and to report accidents;
- Implement procedures specified in this HASP, and report deviations to the SHSO;
- Perform tasks that they are trained to do; and
- For this project, hard hats, work boots, safety glasses, and gloves are required for field project work tasks (Level D PPE).

2.6 VISITORS

Non-site workers and site visitors (Bergmann) are responsible for:

- Reading, understanding, and complying with the requirements of the HASP;
- Having the required personnel protecting equipment (e.g., hard hats, safety glass, and work boots);
- Taking reasonable precautions to prevent incidents that may result in injury;
- Limit visit time to less than an hour; and

Visitors must request and receive permission for a date and time to visit the site from the Bergmann PM and DASNY. This does not apply to NYSDEC, NYSDOH, and the Cattaraugus County Health Department.



3.0 HEALTH & SAFETY RISK ANALYSES

3.1 SITE OVERVIEW

The Site is located at the former Gowanda Day Habilitation Center facility at 4 Industrial Place, Gowanda, NY. Bergmann will monitor the investigative activities completed by the drilling and field monitoring contractors that include:

- Environmental soil boring installation (10 borings)
- Collection of ten (10) soil samples.

3.2 HAZARD ANALYSES

3.2.1 Physical Hazards

- Physical hazards associated with injury from drilling equipment or vehicles;
- Physical hazards associated with investigation activities (i.e., slip or trip, ergonomics and lifting, moving components around drill rig);
- Underground utilities injury from damage to these utilities (i.e. electric shock, fire, and explosion);
- Biological health risks (e.g. poison ivy, ticks, mold); and
- Heat and/or cold stress.

3.2.1.1 Chemical Hazards

Chemical hazards that could potentially be present on-site and/or associated during the investigative work are presented in the Chemical Hazard Evaluation table below:



CHEMICAL HAZARD EVALUATION									
Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
	PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
Acetone	1000 ppm	250 ppm	500 ppm	Y	Inh, Ing, Con	Irritation to eyes, nose, or throat, skin, skin burns, loss of coordination and equilibrium	Sharp penetrating odor, mint like	1.1	9.69
Aroclor 1260 (PCB)*	0.5 ^{sk} mg/m ³	---	0.5 ^{sk} mg/m ³	Y	Abs, Inh, Ing	Irritation to eyes and skin; dermatitis, liver damage	---	---	---
Arsenic*	0.010 mg/m ³	---	0.01 mg/m ³	Y	Inh, Ing, Abs, Con	Coughing, irritation to eyes, nose, throat, respiratory tract, inflammation of mucous membranes, dyspnea (labored breathing), cyanosis, and rales (rattle breathing), vomiting, bloody diarrhea, cold clammy skin, low blood pressure, weakness, headache cramps, convulsions, coma, redness, burns to skin	Odorless/ silver gray or tin white brittle (metal, inorganic), also can be in solution (clear & odorless)	---	---
Asbestos*	0.1 fibers/c c	---	0.2 - 2.0 fibers/c c	N	Inh, Ing	None	Odorless	---	---
Barium	0.5 mg/m ³	---	0.5 mg/m ³	N	Inh, Ing, Con	Irritation to eyes, nose, throat, or skin; stomach pains, slow pulse, irregular heart beat	Odorless	---	---



CHEMICAL HAZARD EVALUATION									
Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
	PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
Benzene*	1 ppm	---	10 ppm	Y	Inh, Abs, Ing, Con	Irritation to eyes, skin, nose, respiratory system; headache, nausea, dizziness, drowsiness, unconsciousness, harmful, fatal if aspirated into lungs	Colorless to light yellow liquid, sweet aromatic odor	0.5	9.25
Benzo(a)athracene	N/A	N/A	N/A	Y	Inh, Ing, Con, Abs	Irritation to eyes, skin, digestive tract, respiratory tract (prevent contact to skin and eyes)	Yellow to green	---	---
Benzo(a)pyrene	0.2 mg/m ³	---	A2	Y	Ing, Inh, Abs, Con	Irritation to eyes, skin, lungs harmful if swallowed (all hazards and toxic properties not fully known)	Yellow green powder		
Benzo(b)fluoroanthene	0.2 mg/m ³	0.1 mg/m ³	A2	Y	Inh, Ing, Con	No signs or symptoms of acute exposure to benzo(b)fluoranthene have been reported in humans	Colorless		



CHEMICAL HAZARD EVALUATION									
Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
	PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
Benzo(k)fluoranthene	N/A	N/A	N/A	Y	Inh, Abs, Ing, Con	Irritation to eyes, skin upper respiratory tract, and digestive tract. Could cause lung damage. Fatal if absorbed through skin, swallowed or inhaled.	Yellow solid, odorless	---	---
Cadmium*	0.005 mg/m ³	LFC	0.01 mg/m ³	N	Inh, Ing, Con	Irritation to eyes, nose, throat, cough, tight chest/pain, dyspnea, pulmonary edema, sweating, chills, slow pulse, muscle aches, weakness, death	Silvery/white (blue tinged) lustrous solid, odorless	---	N/A
Chlorobenzene	75 ppm	---	10 ppm	Y	Inh, Ing, Con	Irritation skin, eyes, nose, respiratory tract, coughing, shortness of breath, dizziness, incoordination, unconsciousness. GI irritation, toxic may cause systematic poisoning, nausea, vomiting, diarrhea	Colorless liquid, faint almond-like odor	0.4	9.06
Chromium (metal)	1.0 mg/m ³	0.5 mg/m ³	0.5 mg/m ³	N	Inh, Ing, Con	Irritation to eyes, skin and respiratory tract (lungs), ulceration of skin and mucous membranes, rash, electrolyte disturbances	Blue-white to steel gray lustrous brittle hard, odorless solid	---	N/A



CHEMICAL HAZARD EVALUATION									
Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
	PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
Chrysene	0.2 mg/m ³	---	0.2 mg/m ³	Y	Inh, Ing, Con	Irritation to eyes, skin, GI with nausea; vomiting, diarrhea, respiratory irritation	Very light beige solid	---	---
Cis-1,2-Dichloroethene	200 ppm	200 ppm	200 ppm	Y	Inh, Ing, Abs, Con	Irritant to skin, eyes, respiratory tract, mucous membranes, liver damage, narcotic effect at high concentrations	Mild odor	0.8	9.66
1,1-Dichloroethene	1 ppm	---	5 ppm	N	Inh, Ing, Abs, Con	Irritation, sensitization to eyes, nose, throat, dizziness	Mild, sweet chloroform-like odor	0.9	9.79
1,2-Dichloroethane*	1 ppm	40 mg/m ³	10 ppm	Y	Inh, Ing, Abs, Con	Nausea, vomiting mental confusion, headache, skin burns, dermatitis, cornea (eye) damage	Pleasant chloroform odor, sweet taste	NR	11.05
4,4'-DDT*	1 mg/m ³	---	1 mg/m ³	Y	Avoid physical contact	N/A (Toxic irritant)	---	---	---
Dichlorobenzene (p-)	75 ppm	---	10 ppm	Y	Inh, Ing, Abs, Con	Irritation to eyes, nose, throat, skin, loss of consciousness, cyanosis, irregular pulse	Moth balls	---	---
Dieldrin	N/A	---	N/A	Y	Inh, Con, Abs	Irritation to eyes, nose, throat, skin, death	---	---	---
Endosulfan II (beta)	---	---	---	N	Inh, Ing, Con	N/A (Toxic irritant)	Grayish-white powder (pesticide)	---	N/A



CHEMICAL HAZARD EVALUATION									
Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
	PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
Ethylbenzene	100 ppm	---	100 ppm	Y	Inh, Ing, Con	Irritation to eyes, skin, mucous membranes; dermatitis, narcosis, , trouble breathing, paralysis, headache, nausea, headache, dizziness, coma	Colorless liquid, aromatic odor	0.5	8.77
Indeno(1,2,3-cd)pyrene	0.2 mg/m ³	0.1 mg/m ³	0.1 mg/m ³	Y	Inh, Ing,	N/A	Yellow Crystals	---	---
Lead	0.05 mg/m ³	0.05 mg/m ³	0.05 mg/m ³	Y	Inh, Ing, Con	Poison, abdominal pain, spasms, nausea, vomiting, headache, irritation to eyes; skin, weakness, metallic taste, anorexia/loss of appetite, insomnia, facial pallor, colic, anemia, tremor, "lead line" in gums, constipation, abdominal pain, paralysis in wrists and ankles, encephalopathy (inflammation of brain)	Odorless	---	---



CHEMICAL HAZARD EVALUATION									
Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
	PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
Mercury	0.1 ^{sk} mg/m ³ ceiling	0.1 mg/m ³ ceiling 0.05 mg/m ³ ceiling	0.025 ^{sk} mg/m ³	Y	Inh, Abs, Ing, Con	Severe respiratory tract damage, sore throat, coughing, pain, tightness in chest, breathing difficulties, headache, muscle weakness, anorexia, GI disturbances, ringing in ear, liver changes fever, bronchitis, pneumonitis, burning in mouth, abdominal pain, vomiting, corrosive ulceration, bloody diarrhea, weak & rapid pulse, paleness, exhaustion, tremors, collapse, thirst, burns and irritates skin, eyes, blurred vision, pain in eyes	Silver-white, heavy, odorless liquid metal	---	N/A
Methyl Ethyl Ketone (2-Butanone, MEK)	200 ppm	200 ppm	200 ppm	Y	Inh, Ing, Con	Irritation to eyes, nose; skin, dizziness, nausea, drowsiness, CNS depression, unconsciousness	Mint or acetone-like	0.9	9.51
Silver	0.01 mg/m ³	---	0.1 mg/m ³	Y	Inh, Ing, Con	Blue gray eyes, irritation to nasal septum, throat, skin, ulcerations to skin, GI disturbances	White to gray lustrous/ metallic solid, odorless	---	---
1,1,1-Trichloroethane	350 ppm	---	350 ppm	Y	Inh, Con	Vomiting, nausea, drowsiness, unconsciousness	Slight fruity odor	NR	11



CHEMICAL HAZARD EVALUATION									
Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
	PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
1,2,3-Trichlorobenzene	---	---	---	Y	Inh, Ing	Causes eye, skin, and respiratory tract irritation. Harmful if swallowed.	White solid with a sharp chlorobenzene odor. (mothlike) Insoluble in water and denser than water.	---	
Toluene	200 ppm	100 ppm	20 ppm	Y	Inh, Abs, Ing, Con	Irritation to eyes, skin, nose; upper respiratory tract, fatigue, weak, confusion, dizziness, headache, drowsiness, abdominal spasms, dilated pupils, euphoria	Colorless liquid, sweet pungent, benzene like odor	0.5	8.82
Trichlorobenzene (1,2,4-Trichlorobenzene)	N/A	---	N/A	N	Inh, Abs, Ing, Con	Irritation to eyes, mucous membranes, possible liver, kidney damage	Colorless to white liquid, aromatic odor (@ 63 F turns solid/crystalline)	---	N/A
Trichloroethene* (TCE)	100 ppm (per 6/97 NIOSH Pocket Guide)	25 ppm (per 2005 NIOSH Pocket Guide)	10 ppm	Y	Inh, Abs, Ing, Con	Irritation to eyes, skin, mucous membranes and GI, headache, vertigo, fatigue, giddiness, tremors, vomiting, nausea, may burn skin, visual disturbance, paresthesia, cardiac arrhythmias	Colorless liquid, sometimes dyed blue, chloroform odor	---	9.45



CHEMICAL HAZARD EVALUATION									
Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/Description	FID/PID	
	PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
Vinyl Chloride*	1 ppm	---	1 ppm	Y	Inh, Con	Dulled auditory and visual response, headache, weakness, frostbite, GI bleeding, pallor or cyanosis of extremities, abdominal pain, bleeding	Colorless liquefied gas, pleasant odor at high concentrations (3000 ppm)	2.0	9.99
Xylenes	100 ppm	100 ppm	100 ppm	Y	Inh, Abs, Ing, Con	Irritation to eyes, nose, throat, skin; nausea, vomiting, headache, ringing in ears, severe breathing difficulties (that may be delayed in onset), substernal pain, coughing hoarseness, dizziness, excited, burning in mouth, stomach, dermatitis (removes oils from skin), corneal burns	Colorless liquid, aromatic odor (solid below 56 F)	.5	8.44

KEY:

PEL = Permissible Exposure Limit

REL = Recommended Exposure Limit

--- = Information not available

TLV = Threshold Limit Value(ACGIH)

Inh = Inhalation

Ing = Ingestion

mg/m³ = Milligrams per cubic meter

* = Chemical is a known or suspected carcinogen

Abs = Skin Absorption

Con = Skin and/or eye Contact

ppm = Parts per million

sk = Skin notation



4.0 SITE CONTROL MEASURES

4.1 SITE CONTROL

Site control will minimize potential injury and exposure of COCs to workers and visitors. Site control measures also enhance response in emergency situations.

It is anticipated that project work under this program will be conducted following Level D health and safety protocol. In the event that an upgrade to Level C health and safety protocol is necessary, a meeting will be held to prepare for level C health and safety issues and this HASP will be modified.

4.2 SITE SECURITY

The SHSO or designated alternate is responsible for coordinating access to the active work zone with the drilling and field monitoring contactors. The drilling and field monitoring contactors are responsible for securing the drill rig and field equipment during working and non-working hours. When necessary to establish a work zone as defined above, the same will be identified by barricades or a barrier tape which will be placed a minimum of five (5) feet from the perimeter of the drill rig and boring/drilling operation. Unauthorized entry within the five (5) foot buffer should be noted in a daily field report.

The building should be locked and secure when work crews are not in the building. An inspection of the building perimeter is recommended at the beginning of each day before building entry.

4.3 BUDDY SYSTEM

Field activities should be conducted with a buddy who is able to:

- Provide partner with assistance;
- Observe partner for signs of chemical or heat/cold exposure;
- Periodically check the integrity of partner's protective clothing; and
- Notify the SHSO or others if emergency help is needed.

It is noted that Bergmann employees can rely on either the drilling or field monitoring contractors as a buddy.

4.4 SITE COMMUNICATIONS

Communications will be conducted through verbal communications. When out of audible range, field communication will be via cellular phones or a two-way radio.

Communications between workers in various zones shall consist of the standard hand signals, voice, or radio calls. A cellular phone will be used to contact appropriate agencies in the event of an emergency.

4.5 SAFE WORK PRACTICES

Operating procedures consistent with general safety rules should be followed by all workers. Workers will be conscientious of others working around them and check that they are safe, and working in a safe manner.



General safety rules that will be enforced at the project work areas include the following:

- All personnel in the work zone have stop work authority for any health or safety issue until which time the practice or impairment may be corrected;
- Monitor the soil boring and groundwater well installations from the upwind location and periodically from the downwind location;
- Smoking will be prohibited during field activities or around the drill rig;
- Eating and chewing gum will be prohibited during field activities or around the drill rig;
- Field work will be conducted during daylight hours unless adequate light is provided;
- Authorized visitors that enter the site will sign the daily field log and will also be required to read this HASP (as the minimum health and safety requirements) should they not have their own plan;
- Workers must thoroughly wash their hands prior to leaving the work area and decontamination zones and before eating or drinking; and
- Excessive facial hair should be minimized in the event that respiratory equipment is required for Level C project work.

4.6 VISITORS

Visitors may be permitted in the immediate area of active operations with the approval from the SHSO. Visitors will not be allowed to enter in to the work zone and, if applicable, decontamination zones. Site visitors will be briefed on appropriate sections of the HASP that apply to their visit time on-site. Site visitors must utilize the appropriate PPE for the work zone as required at the time of the visit. The presence of visitors will be documented on the daily log maintained by the SHSO or designated alternate during site activities. Visitors will not be allowed in work areas, support zone, and decontamination areas during level C project work.

4.7 NEAREST MEDICAL ASSISTANCE

First Aid supplies will be located near the area of work activity, support zone, or in a field vehicle. Additional medical assistance can be summoned by dialing "911."

The nearest emergency medical assistance is Gowanda Urgent Care, located at 34 Commercial St, Gowanda, NY 14070, (716) 532-8100, and is approximately 0.3 miles from the site. The emergency route with directions to the hospital from the Site is shown on Figure 1 – Urgent Care Emergency Route. Additional information regarding medical assistance, evacuation routes, and emergency procedures is contained in Section 8.0 of this HASP.

4.8 SAFETY EQUIPMENT

In addition to the PPE necessary to conduct work activities, the following inventory of safety equipment will be available:

- First aid kit;
- Scissors for emergency equipment removal;
- Emergency eye wash (as needed);
- Electrolyte replacement drink and/or potable water – stored in clean area; and
- Fire extinguisher for Class ABC fires (on contractor's equipment).



5.0 MEDICAL SURVEILLANCE

Bergmann employees and contractors will follow their respective individual in-house medical surveillance procedures.

6.0 PERSONAL PROTECTIVE EQUIPMENT

The SHSO has reviewed the environmental and historical sampling data that is relevant to this proposed soil boring and associated construction work to determine potential exposure to COCs and physical hazards. This review resulted in designating the work area as a construction zone. Level D PPE has been designated as the primary level of personnel protection that should be used during project work where contact with soil and groundwater is possible. Upgrading to Level C will be executed as required in the monitoring guidelines outlined.

6.1 PERSONAL PROTECTIVE EQUIPMENT SELECTION CRITERIA

PPE requirements selected for each project work task are specified in Section 6.3 of this HASP. Equipment selection was based upon the mechanics of the task and the nature of the hazards that are anticipated. The following criteria were used in the selection of PPE equipment:

- Chemical hazards known or suspected to be present;
- Routes of entry through which the chemicals could enter the body, e.g., inhalation, ingestion, skin contact; and
- Potential for contaminant/worker contact while performing the specific task or activity.

Based on available data, we anticipate that most on-site or near-site work activities will be performed at Level D protection. However, Level C protection will be available in the event an upgrade is required.

6.2 SELECTED PERSONAL PROTECTIVE EQUIPMENT ENSEMBLES

The following components of Level D PPE will be available and used as appropriate in accordance with the specifications of this HASP:

- Safety-toe/steel-shank work boots;
- Respiratory protection
- Rubber over-boots (if necessary);
- Safety glasses;
- Insert-type hearing protection or ear muffs (when necessary);
- Hard hats;
- Long sleeve shirts and pants (no shorts);
- Leather gloves when using hand held tools; and
- Latex or nitrile gloves when sampling soil, water or debris.



It is possible that an upgrade to Level C may be required during the tasks identified during this project work. If an inhalation hazard is present or per the guidelines presented in the PPE reassessment program, the following must be added to the protective equipment:

- Half-face respirator equipped with NIOSH/OSHA-approved cartridges suitable for protection against organic vapors, acid gases, and particulates;
- Tyvek disposable coveralls; and
- Or upgraded as necessary

6.2.1 Levels of Protection

The following levels of protection will be used for specific work activities. Adjustments to these levels may be required given the site conditions encountered.

- Soil borings, environmental monitoring, and collection of soil samples – this work may be conducted in Level D; and
- Groundwater monitoring well installation and sampling – this work conducted in Level D.

6.3 PERSONAL PROTECTIVE EQUIPMENT REASSESSMENT PROGRAM

Air monitoring will be conducted during the remediation project work when drilling of COC impacted soils is performed. Such monitoring will be conducted within the work zone utilizing photoionization detection (PID) with a 10.2 eV lamp, or equivalent. Monitoring will consist of determining breathing zone concentrations of total volatile organic vapors. The air monitoring equipment utilized will be calibrated and maintained, in accordance with the manufacturer's instructions. The calibrations and checks will be provided by the vendor of the equipment.

Background readings will be obtained in the work zone, upwind, downwind, and support zone prior to drilling of COC impacted soil. Following the establishment of background PID measurement, air monitoring will be conducted in the work zone during the soil drilling activities. Periodic PID measurements will be obtained at downwind locations during performance of drilling activities outside the building. The PID measurements will be utilized for evaluating potential upgrade to Level C, if necessary. This may be accomplished by comparing PID measurements to health and safety action levels. The action levels for the PID air-monitoring measurements in the worker's breathing zone are provided below:

- Upgrade from Level D to Level C if either of the following conditions exist:
- Total Organic Vapor (TOV) – greater or equal to 5 and less than 50 PID units (part per million) with compensation made for background readings sustained for a period of at least 5 minutes.
- Downgrade from Level C to Level D if both of the following conditions exist:
- Total Organic Vapor (TOV) – less than 5 PID units, above background sustained for a period of at least 5 minutes, with subsequent approval to downgrade provided by the Project Manager.

Immediate Evacuation of Area:

- Total Organic Vapor (TOV) – greater or equal to 50 PID units in the workers' breathing zone.
- Drilling spoils of unknown soil type or containers.

If continued drilling of the area becomes necessary, a meeting will be held to address the air monitoring results and air monitoring may be continued until levels are below evacuation criteria so the area can be



reentered. A reassessment of the continuing scope of work, Health and Safety Plan, PPE and afforded protections are required.

7.0 DECONTAMINATION PROCEDURES

Field decontamination of PPE (e.g. boots) will consist of dry brushing soil off the PPE, and if necessary washing contaminated PPE with a mixture of Alconox® soap and water. Modification to the decontamination protocol for PPE will be made on-site as needed.

8.0 EMERGENCY RESPONSE

In the event of an emergency the following procedures will apply:

- Fire – the work area will be evacuated and the fire department will be notified. Telephone 911.
- Injury – Contact emergency medical services (Telephone 911).
- A qualified person will administer first aid. If injury is not a life or death situation, then self-transport to the hospital is acceptable. Directions to the hospital are attached.
- Chemical overexposure – If possible, move the victim to a safe location and contact 911 for emergency services. Have a qualified person administer first aid. If the person is conscious self-transport to the hospital is acceptable. If the person is unconscious, notify the appropriate emergency medical services at telephone number 911.

8.1 AVAILABLE EQUIPMENT AND EMERGENCY AUTHORITIES

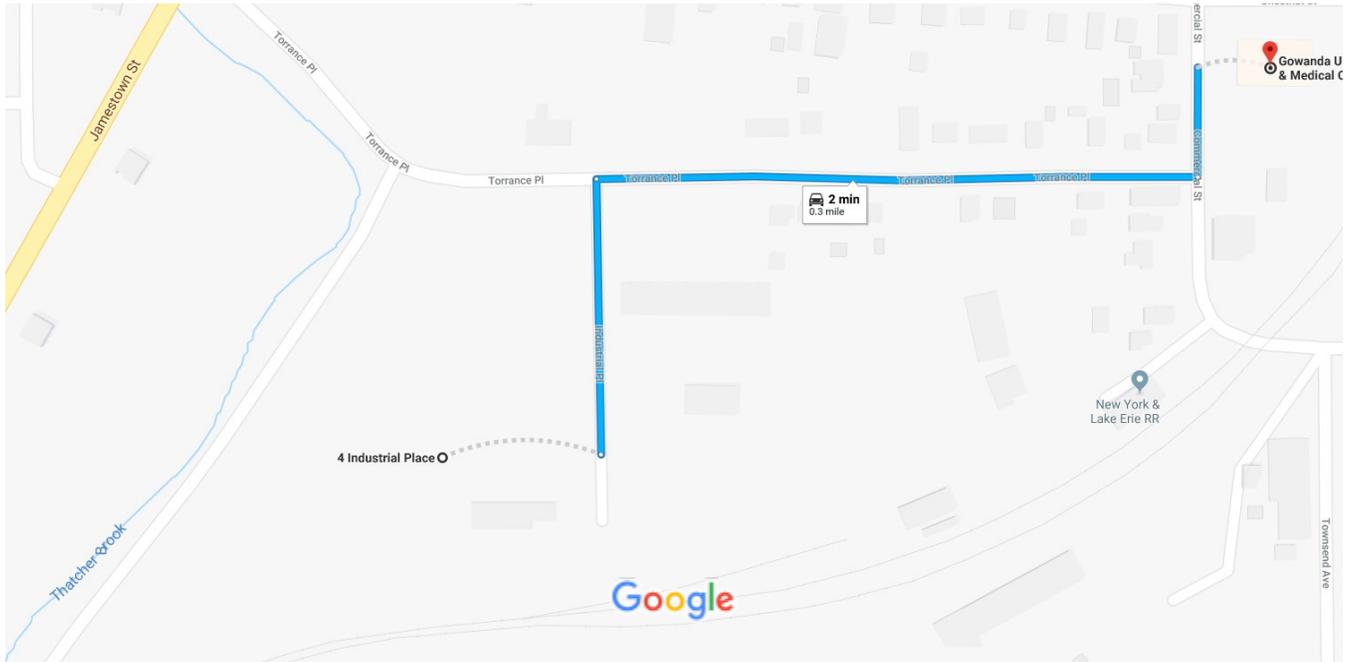
Bergmann and the remediation contractor will have a cellular telephone. If additional emergency equipment is required, the following local agencies can be called upon for advice, supplies, or additional manpower:

<u>AGENCY</u>	<u>TELEPHONE NUMBER</u>
Gowanda Village and Volunteer Fire Departments	911
Gowanda Urgent Care	(716) 532-8100
NYSDEC – Region 9 Division of Environmental Remediation	(716) 851-7200



4 Industrial Pl, Gowanda, NY 14070 to Gowanda Urgent Care & Medical Center

Drive 0.3 mile, 2 min



Map data ©2018 Google 100 ft

4 Industrial Pl

Gowanda, NY 14070

- ↑ 1. Head north on Industrial Pl toward Torrance Pl 446 ft

 - ➡ 2. Turn right onto Torrance Pl 0.2 mi

 - ↶ 3. Turn left onto Commercial St 177 ft
- i Destination will be on the right

Gowanda Urgent Care & Medical Center

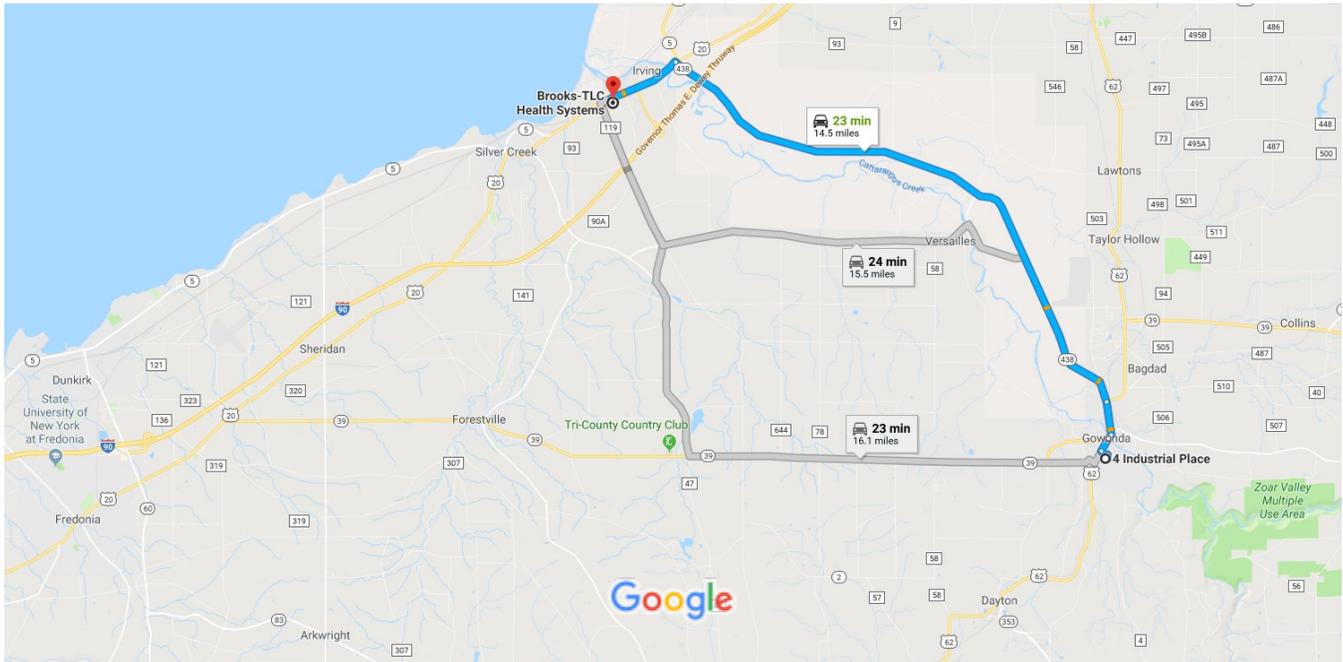
34 Commercial St, Gowanda, NY 14070

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.



4 Industrial Pl, Gowanda, NY 14070 to Brooks-TLC Health Systems

Drive 14.5 miles, 23 min



Map data ©2018 Google 2 mi

4 Industrial Pl

Gowanda, NY 14070

- ↑ 1. Head north on Industrial Pl toward Torrance Pl

446 ft
- ↶ 2. Turn left onto Torrance Pl

0.2 mi
- ↷ 3. Turn right onto Jamestown St

0.3 mi
- ↑ 4. Continue onto W Main St

482 ft
- ↑ 5. At Subway Restaurants, continue onto Buffalo St
i Pass by Tim Hortons (on the right)

0.6 mi
- ↑ 6. Continue straight onto NY-438 N/ Buffalo St
i Continue to follow NY-438 N

11.8 mi

- 7. At the traffic circle, take the 4th exit onto NY-5 W

1.5 mi

Brooks-TLC Health Systems

845 Main Rd, Irving, NY 14081

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.



ATTACHMENT 2 – Job Site Analysis (JSA)

Project: Additional Subsurface Investigation Plan – Gowanda
 Client: DASNY – Former Gowanda Day Habilitation & AVM Gowanda
 Location: 4 Industrial Place, Gowanda, New York
 Job Number: 6974.96

1. Description of work:

Scope of work to be conducted inside and outside the building. Boring installation and soil sampling. Contamination delineation. If SB-08 is to be located at an off-Site location, permission to install will be obtained from the property owner.

2. Fieldwork Requirements:

Is fieldwork required? ✓Yes No

If no fieldwork is required, complete this page, file the signed original in the project file and provide the office safety coordinator with a copy. For projects with fieldwork, complete the entire form.

Will a later phase of this project require fieldwork? ✓Yes No

If a later phase of the project requires fieldwork than a Project Specific Health and Safety form must be completed for that phase at the time of start-up.

3. Environmental Aspects:

Do the aspects of the project in which Bergmann is involved comply with applicable environmental regulatory requirements? ✓Yes No

If no, why not?

4. General:

Does the project have a previously completed Project Health and Safety Plan? ✓Yes No

If yes, review the previous Project Specific Health and Safety Plan.

Does a Prime Contractor (Constructor) or Client HSE Program or Strategy apply? Yes ✓No

If yes, ensure all project team members working in the field receive client HSE training. Append copy of HSE documentation to this form.

Does this project involve work outside of North America (International)? If yes, you must contact the International Region. Yes ✓No

5. Approvals

Prepared By: _____

Print Name

Signature

Date



Approved By: _____

Print Name

Signature

Date

Table 1.1: List of Typical Hazards and Required Controls

Hazard (or Potential Hazard) Description:	Appropriate Control Measure(s):	Scope and Level of Hazard:	PPE Required:
Noise	Provision of PPE appropriate to noise levels	Low Med ✓High NA	Drill rig work will require the use of Ear Plugs.
Uneven ground, foot-level debris, potential for injury to foot, obstructions at walking level, or tripping hazards	Employees to take care when moving around Site. Housekeeping must be maintained.	Low ✓Med High NA	Safety Shoe with nonslip sole. Use care in stepping around debris and dusty/moldy surfaces.
Airborne dust / debris	Provision of appropriate PPE	Low Med ✓High NA	Venting of drill rig exhaust and general work space area. Respirator for work in building to protect from dust and mold.
Over-head construction / operation/ head-level obstructions	Employee awareness of surroundings, avoid areas where lifting operations are ongoing	Low ✓Med High NA	Use care in moving indoor Ceiling grid and lighting. May be loose already from building age and previous work.
Work / inspection on raised platforms / sky jacks	Employee training required (Fall Protection, system being used)	Low Med High ✓NA	
Ladders or climbing	Proper use and set-up of ladders. Fall Protection System as required.	Low Med High ✓NA	



Hazard (or Potential Hazard) Description:	Appropriate Control Measure(s):	Scope and Level of Hazard:	PPE Required:
Explosion hazards (ex: combustible / explosive gases / dusts / stored substances)	Employee awareness, follow standard guidelines	✓Low Med High NA	Fuel for Drill rig and VOC's from soil or Groundwater. Monitor with PID for general breathing zone levels and site safety.
Work in Confined Spaces	Complete Confined Space Check list and Permit. Confined Space Training Required.	Low Med High ✓NA	
Construction vehicle traffic	Give right of way to vehicles when confronted (Follow site specific procedure)	Low Med High ✓NA	
Working near or around Traffic	Standard Procedures for work in traffic. Traffic Control and Protection as required.	Low ✓Med High NA	Neighboring property owners use site as a cut through and for parking. Use caution when in driveways and parking lots.
Work in poorly lit spaces or outside at night.	Assess lighting levels to determine equipment requirements.	Low ✓Med High NA	Consider additional portable lighting within building for indoor activities.
Unusual circumstances / active processes: welding, cutting, etc.	Awareness & appropriate caution. Avoid areas until processes are	Low Med High ✓NA	
Open Excavation	Trenching and Excavation Awareness, Std.	Low Med High ✓NA	
High voltages / live overhead power lines or equipment	Employees are to remain a min. of 3	✓Low Med	Be aware that electric is live within the building. Use caution



Hazard (or Potential Hazard) Description:	Appropriate Control Measure(s):	Scope and Level of Hazard:	PPE Required:
	meters (10 ft.) from all High voltage power.	High NA	in setups and tear-downs to not disturb electrical components.
Work by/on a body of water	Standard operating procedure for working over or near water.	Low Med High ✓NA	
Chemical or Biological touch hazards	Follow proper Hygiene procedures (wash before eating or drinking)	Low Med ✓High NA	VOCs and Mold are onsite hazards. Secondary chemicals are those associated fuels and lubricants brought to site by driller contractor.
Potential contaminated site	Bergmann employees are to be properly instructed depending on contaminate.	Low Med ✓High NA	VOC's, Mold and the potential for Asbestos containing materials.
Extreme Weather Temperatures / Conditions	Employee awareness, follow standard guidelines work to rest ratios.	Low ✓Med High NA	Follow Heat and Cold Stress procedures depending on weather at the time of this investigation.

Table 1.2: List of Project Specific Hazards and Required Controls. To be completed as required by the Project Manager and Field Staff to address additional hazards not listed in Table 1.1

Hazard (or Potential Hazard) Description:	Appropriate Control Measure(s):	Scope and Level of Hazard:	PPE Required:
Mold	Be aware of surrounding mold bloom and spore potential within the building.	Low Med ✓High NA	Respirators and appropriate ventilation.



Hazard (or Potential Hazard) Description:	Appropriate Control Measure(s):	Scope and Level of Hazard:	PPE Required:
Visitors	Use caution with curious onlookers that may get close to the project area.	✓ Low Med High NA	Keep visitors at a safe distance. Approach unknown visitors as a team or with a buddy.
Building Security	Lock and Unlock building each day of the investigation.	✓ Low Med High NA	Assure building is secure and check perimeter for signs of entry prior to entering and beginning work.

Personal Protective Equipment

Based on Tables 1.1 and 1.2, identify the required Personal Protective Equipment (PPE) needed below:

PPE	Type
✓ Hard Hat	Bergmann Issued
✓ Steel toe Work Boots	Safety shoe with protective toe
✓ Safety Glasses	Bergmann Issued
✓ High Visibility Vest	Bergmann Issued
✓ Gloves	Nitrile or leather dependent on work task
✓ Hearing Protection	Bergmann Issued
✓ Respiratory Protection	Bergmann Issues and Fit Tested
Coveralls	
Fall Protection	



Emergency Information

Emergency Numbers:

Police: 911 Fire Department: 911
Ambulance: 911

Bergmann Corporate HSE: James Marschner (585-455-7043) Representative.

It is the responsibility of the Project Manager to prepare and communicate an Emergency Preparedness and Response plan to all field staff.

Project Personnel Numbers:

Title	Name	Company	Phone Number

First Aid facilities are located: In personnel vehicles

First Aiders on site are: Site safety officer

Fire extinguishers are located: In personnel vehicle; drill rig

Environmental Incidents

For incidents involving spills, releases or other negative impacts to air, water, land, animals etc.

1. If possible, and safe to do so, stop the spill or release and prevent further damage.
2. Notify local Bergmann office immediately (Project Manager).
3. Take notes and photographs if possible. An investigation may be required.
4. Complete and submit an Incident Report immediately.



Typical requirements of the Occupational Health and Safety legislation

For incidents involving serious injury, a fatality, or major property damage:

1. Notify Bergmann office immediately. (Discuss with Corporate HSE Officer only.)
2. Don't disturb the scene except to tend to the injured and prevent further damage.
3. Take notes and photographs if possible. An Incident Report is to be prepared and submitted immediately.

For any medical aid injury, the worker shall:

1. Obtain necessary first aid.
2. Notify Bergmann office immediately.
3. Complete and return all necessary forms and reports.



Employee Review

All employees required to perform work on this project shall review the Project Specific Health and Safety Plan and sign below acknowledging that they have been advised of the hazards and the controls and PPE required. Employees in the field who identify additional hazards not listed above shall notify the project manager of the hazard and confirm the controls that will be used prior to proceeding.

Reviewed by: _____
Print Name Signature Date

Distribution

Original: Project File

Copies: Site, Field Workers



Attachment 3

Project: Gowanda Additional Subsurface Soil Investigation Emergency Contact List

Police/Fire/Ambulance: 911

Urgent Care/Non-Emergency Option:

Phone Number: 716.532.8100

Facility Name: Gowanda Urgent Care and
Medical Center

Address: 34 Commercial Street, Gowanda, NY
(approx. 0.3 Miles)

Map Provided on Cover and Figure 1

Hospital/Emergency Room:

Phone Number: 716.951.7000

Facility Name: TLC Health Network Emergency
Room

Address: 845 Main Road, Irving, NY
(approx. 23 Miles)

Bergmann:

585.232.5135 Corporate Office

Bergmann Project Staff:

Bergmann Corporate Safety & Health Officer: Jim Marschner – 585.498.7858

Bergmann Site Supervisor/Site Safety Officer: Steve DeMeo – 585.498.7805

Project Manager: Ari Cheremeteff – 585.498.7952

Client Emergency Contacts: Megan Borruso – 585.498461-9470

NYSDEC Region 9 Division of Environmental Remediation: 716.851.7200