June 20, 2011

New York State Department of Environmental Conservation
1130 N. Westcott Road
Schenectady, New York 12306
Attn: Mr. Howard Brezner

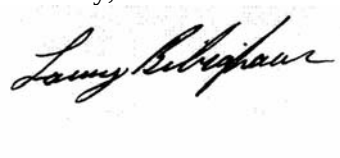
RE: December 2010 Quarterly Monitoring Report
SI Group, Inc., Congress Street Facility

Dear Mr. Brezner:

On behalf of SI Group, Inc., enclosed is the proposed Work Plan to investigate the contamination that has been detected in Monitoring Well OW5A-92. The Work Plan has been prepared in response to the New York State Department of Environmental Conservation (NYSDEC) letter received on May 17, 2011 concerning the December 2010 Quarterly Monitoring Report for the Congress Street Facility of SI Group, Inc.

If you have any questions, please call me at (518) 453-2897.

Sincerely,



Laury Bibighaus,
Associate

ecc: Mr. Howard Brezner, NYSDEC Region 4, hsbrezner@gw.dec.state.ny.us
Mr. Robert Cozzy, NYSDEC, rjcozzy@gw.dec.state.ny.us
Mr. S. Ezekwo, EPA Region 2, Ezekwo.Sam@epamail.epa.gov
Mr. Charles Gardner, SI Group, chuck.gardner@siigroup.com
Mr. Kevin Kogut, SI Group, kevin.kogut@siigroup,com
Mr. Andy Barrett, SI Group, andy.barrett@siigroup.com
Mr. Mark Normandin, SI Group, mark.normandin@siigroup.com
Mr. Glen Golden, SI Group, glen.golden@siigroup.com
Mr. Keith Cowan, CHA, kcowan@chacompanies.com

Off-Site Investigation Work Plan Associated with Monitoring Well OW5A-92

SI Group, Inc.
Congress Street Facility
Schenectady, New York

NYSDEC Site Code: HW447007

CHA Project Number: 15091.4002.31000

Prepared for:
SI Group, Inc.
Congress Street Facility
Schenectady, New York

Prepared by:

III Winners Circle
Albany, New York 12205
(518) 453-4500

June 2011

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1.0 INTRODUCTION

The Congress Street Site is located in the City of Schenectady in Schenectady County, New York at Congress Street and Tenth Avenue as shown in Figure 1. The Site encompasses an area approximately 7 acres in size with approximately 5.1 acres having been developed. SI Group, Inc. owned and operated a chemical manufacturing facility at the Congress Street Site from approximately 1910 to 1997 when manufacturing activities ceased at the Site. In 1995, SI Group completed a Remedial Investigation that identified groundwater contamination in the shallow groundwater in the sections of the site where the process buildings were located.

As a result of the investigation, New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) in March 1998 that required the installation of a groundwater collection system (GWCS) to intercept the migration of contaminated groundwater from moving off-site. The GWCS consists of a 700-foot long collection drain connected to a wet-well (WW1) and four extraction wells (two on-site and two off-site) designated as PW1, PW2, PW3 and PW4. Contaminated groundwater is pumped from the GWCS and sent to an on-site treatment system.

The performance and effectiveness of the GWCS is monitored, which includes quarterly sampling of groundwater monitoring wells. The results of the monitoring program are reported to NYSDEC quarterly and are summarized in an annual performance monitoring report.

Since December 2008, 2,4-dimethylphenol has been detected in monitoring well OW5A-92, which is located off-site and down-gradient of the GWCS. The levels of 2,4-dimethylphenol have generally increased since the initial detection in 2008. In addition, the contaminants normally associated with the Site have not been detected in monitoring well OW5A-92.

In January 2011, SI Group submitted the 2010 Annual Operation and Maintenance Report for the Groundwater Collection System, which included the most recent concentration of 2,4-dimethylphenol detected in monitoring well OW5A-92. As a result of the 2010 Annual Operation and Maintenance Report, the NYSDEC has requested an investigation to determine if a source of contamination is present between the GWCS and monitoring well OW5A-92.

In response to the NYSDEC request contained in a NYSDEC letter dated May 17, 2011, this "Off-Site Investigation Work Plan Associated with Monitoring Well OW5A-92" (Work Plan) has been prepared to investigate the area between the GWCS and monitoring well OW5A-92. As shown in

Figure 2, the main CSX/Amtrak railroad line between Albany and Schenectady is located in this area, which limits the investigation that can be completed in the area. The proposed investigation includes the collection of soil samples at various depths along the railroad bed as well as groundwater sampling. The proposed sampling is to be done at a minimum of 25 feet from the centerline of the railroad tracks to minimize disruption of the trains. CSX approval must be obtained since the investigation is to be completed on CSX property. In addition, all field work will be coordinated with CSX to ensure that all safety procedures are followed during the investigation.

The data obtained from this investigation will be used to determine if a source of contamination, which is being detected in monitoring well OW5A-92, is present in this area. The field investigation will be conducted in accordance with the procedures contained in this Work Plan.

2.0 BACKGROUND

In accordance with the Record of Decision issued in March 1998, SI Group has completed quarterly groundwater monitoring of the GWCS since the system was installed in 2002.

In December 2008, 2,4-dimethylphenol was detected in monitoring well OW5A-92 at a concentration 13 µg/L. As shown in Figure 2, monitoring well OW5A-92 is located off-site between the collection trench and the Cowhorn Creek. Field personnel noted a slight fertilizer odor in the well at the time of sampling and observed that the nearby railroad right-of-way appeared to have been sprayed with a defoliant/herbicide, as evidenced by browned vegetation in a large swath parallel to the tracks.

As a result of the detection of 2,4-dimethylphenol in monitoring well OW5A-92, the level of 2,4-dimethylphenol has continued to be monitored. The following table provides a summary of the amount of 2,4-dimethylphenol detected in well OW5A-92 since December 2008.

Sample Date	2,4-Dimethylphenol
12/9/2008*	13
3/16/2009	290
5/8/2009	430 E
6/8/2009	220
6/8/2009*	190
9/14/2009	230
12/15/2009	2100
3/15/2010	3600
6/15/2010	3400 E
9/9/2010	1300
12/9/2010	6970
3/14/2011	4140

*Sample analyzed by TestAmerica. All other samples analyzed by AES.
All units are in µg/L.
E = Exceeds calibration range.

The analyses of the groundwater samples collected from OW5A-92 continue to not detect other VOCs and SVOCs which are being detected in other on-site monitoring wells. In addition, the operation of the collection system is monitored by the amount of groundwater removed from the wet well and the groundwater elevation in the wet well. Groundwater elevations in the wet well along with the flow data show that the collection trench is working as specified with no significant change to indicate that the system is being bypassed. An analysis of groundwater elevations along with the fact that the collection trench is operating as specified indicates that there is minimal, if any, gradient

between the collection trench and OW5A-92, which would further suggest that the recent detections are not a result of movement of contamination off-site.

Based on discussions with Amtrak personnel who are responsible for track maintenance between Schenectady and Rensselaer, approximately 70 railroad ties were replaced in May of 2008 in the area directly adjacent to the Congress Street facility. These railroad ties were new and were pre-treated with creosote before they were installed. In addition, Amtrak personnel confirmed that herbicides have been applied annually each spring since at least May 2009. Either of these conditions may have attributed to the recent detections in OW5A-92.

This Work Plan has been prepared to collect soil samples at various depths along the railroad bed that is located between the GWCS and OW5A-92 as well as groundwater samples. The purpose of the investigation is to determine if a source of contamination exists in the area that would explain the detection of 2,4-dimethylphenol in monitoring well OW5A-92, and to characterize groundwater flow in this area.

3.0 PROJECT ORGANIZATION AND RESPONSIBILITY

The supplemental investigation activities are being conducted by SI Group under the supervision of the SI Group Project Manager, who is the prime contact for communication with the NYSDEC. Field oversight and coordination are to be provided by CHA. The CHA Project Manager is responsible for the delivery of CHA services. The project organization chart and a brief description of the duties of key personnel are presented below. Resumes for CHA staff providing environmental services are included in Appendix A.

SI Group

SI Group Project Manager

- Responsible for the overall environmental program of the Congress Street Facility

CHA

Laury Bibighaus – CHA Project Manager

- Responsible for following the approved Work Plan and obtaining approval by the NYSDEC for all modifications to the project;
- Provide overall and day-to-day project management;
- Ensure all resources of CHA are available on an as required basis;
- Participate in key technical negotiations with the NYSDEC, as necessary;
- Provide managerial guidance to CHA's technical group;
- Evaluate data; and,
- Prepare and coordinate the issuance of report.

Keith Cowan, C.P.G - CHA Quality Assurance/ Quality Control (QA/QC)

- Conduct internal audit of field investigation and sampling;
- Review laboratory activities;
- Determine laboratory data corrective action;
- Perform analytical data validation and assessment;
- Review laboratory QA/QC;
- Assist in preparation and review of report; and,
- Provide technical representation for analytical activities.

Sarah Newell - Technical Manager/ Project Coordinator

- Responsible for the preparation of the Work Plan;
- Provide immediate supervision of all on-site activities;
- Provide field management of sample collection and field QA/QC;
- Assist in preparation and review of report;
- Provide technical representation for field activities; and,
- Responsible for maintenance of the field equipment.

Jamie Herrick, Field Oversight and Quality Control Coordinator

- Will serve as Field Team Leader;
- Work with field crew to prepare for field activities and conduct investigations; and,
- Will be on Site to
    1. Provide oversight and coordination of field activities.
    2. Ensure that required QC procedures are followed for soil boring and monitoring well installation activities and sample collection.
    3. Initiate informal and/or formal corrective actions as necessary.
    4. Maintain and report QC records (i.e. chain-of-custody, field equipment calibration, etc.).
    5. Report to the Project Manager.

Howard Brezner, NYSDEC Project Manager

- Approve this Work Plan and any modifications to the project

Laboratory

Project Manager, Analytical Contractor

- Ensure resources of laboratory are available on an as required basis;
- Coordinate laboratory analyses;
- Supervise laboratory's in-house chain-of-custody;
- Schedule analyses of samples;
- Oversee review of data;
- Oversee preparation of analytical reports; and,
- Approve final analytical reports prior to submission to CHA.

Quality Assurance/ Quality Control Officer, Analytical Contractor

- Overview laboratory QA/QC;
- Overview QA/QC documentation;
- Conduct detailed data review;
- Decide laboratory corrective actions, if required; and,
- Provide technical representation for laboratory QA/QC procedures.

Sample Custodian, Analytical Contractor

- Receive and inspect the sample containers;
- Record the condition of the sample containers;
- Sign appropriate documents;
- Verify chain-of-custodies and their correctness;
- Notify laboratory project manager and laboratory QA/QC Officer of sample receipt and inspection;
- Assign a unique laboratory identification number correlated to CHA's sample identification number, and enter each into the sample receiving log;
- Initiate transfer of the samples to the appropriate lab sections with assistance from the laboratory project manager; and,
- Control and monitor access to and storage of samples and extracts.

The analytical laboratory chosen to perform the proposed work is certified by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) to perform the required analyses in accordance with the most recent version of the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP). The following laboratory will perform the soil and groundwater analytical laboratory testing requirements for the project:

Adirondack Environmental Services
314 Pearl Street
Albany, New York
Contact: Tara Daniels, Project Manager
(518) 434-4546

4.0 FIELD SAMPLING PLAN

4.1 SAMPLING OBJECTIVES

The investigation to be performed will entail subsurface soil sampling at various depths and groundwater sampling to characterize the soil and groundwater conditions in the area hydraulically upgradient of monitoring well OW5A-92.

4.2 SAMPLING PROCEDURES AND PROTOCOLS

4.2.1 Boring Installation

Six (6) borings will be installed using standard Geoprobe® drilling techniques at the locations shown in Figure 3. The locations are assumed to be upgradient of monitoring well OW5A-92 based on groundwater flow information that has been obtained during the Remedial Investigation performed at the Site in 2007. The borings will be installed at a minimum of 25 feet from the center line of the railroad tracks.

Soil cores will be collected continuously in four (4) foot increments from grade to final depth using a Macrocore® sampling device. The soil core will then be screened in the field for visual, olfactory, and photoionic evidence of contamination. The maximum depth of each boring is expected to be 15 feet below ground surface (bgs) based on the depth to groundwater (approximately 10 to 12 feet bgs) observed during previous investigation activities. The depth and location of each boring may vary depending upon geologic conditions.

A minimum of two (2) soil samples will be collected from borings GP02-11 through GP06-11 (Figure 3) for laboratory analysis. Two soil samples will be collected from each boring in accordance with the following:

1. One (1) sample will be collected from a depth of zero (0) to two (2) feet bgs.
2. One (1) soil sample will be collected from either:
    a. The two foot interval exhibiting the highest level of contamination based on visual, olfactory and photoionic evidence; or,
    b. Where no contamination is detected based on visual, olfactory and photoionic evidence, the two foot interval immediately above the apparent water table.

Soil samples will be collected from approximately the middle of the retrieved core using a disposable polyethylene sampling scoop. Soil samples designated for VOC analysis will be collected first. Following the collection of soil for volatile analyses, soil samples collected for all non-volatile chemical analyses will be thoroughly mixed before being placed in the appropriate sample containers. The samples will then be placed directly into the laboratory sample jars, allowing no headspace. The sample containers will be placed on ice in laboratory-supplied rigid coolers after collection and labeling.

Soil samples will be submitted for analysis to a qualified laboratory certified by the New York State Department of Health's Environmental Laboratory Approval Program (ELAP). Each soil sample will be analyzed for: Target Compound List (TCL) Volatile Organic Compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260 plus 10 tentatively identified compounds (TICS), TCL semi-volatile organic compounds (SVOCs) using USEPA Method 8270 plus 20 TICS, and herbicides using USEPA Method 8151 with the deliverables in ASP Category B format.

Before drilling at each boring location and after drilling at the last location, the drilling equipment and all sampling equipment will be decontaminated in accordance with the protocols established in Section 5.3. Drill cuttings will be managed as described in Section 4.5. QA/QC samples will be collected in accordance with Section 5.0.

4.2.2 Temporary Piezometer Installation

In order to obtain water level measurements and groundwater samples from the newly installed borings, temporary piezometers will be installed in five (5) of the six (6) borings with a permanent piezometer installed in GP01-11 as described in Section 4.2.3.

Borings GP02-11 through GP06-11 (Figure 3) will be converted to temporary piezometers by installing a 5-foot section of 1-inch diameter, 10-slot PVC screen and finished with the requisite length of solid PVC riser pipe. The PVC screen will be installed to straddle the water table and will utilize a natural pack rather than a sand pack. After collecting ground water level measurements and groundwater samples (as discussed in Sections 4.2.4 and 4.2.6) from the temporary piezometers, the PVC screen and casing will be removed and the boreholes will be tremie grouted to prevent any vertical movement of contamination.

4.2.3 Piezometer Installation

In order to obtain water level measurements and groundwater samples during this and potentially future investigations, one permanent piezometer will be installed in boring GP01-11.

Boring GP01-11 will be converted to a piezometer (PZ01-11) constructed using a 5-foot section of 1-inch diameter, 10-slot PVC screen and finished with the requisite length of solid PVC riser pipe. The screen will be installed to straddle the water table. A sand pack, consisting of a minimum thickness of one (1) inch, will be placed within the annulus between the borehole and the well screen. Alternatively, a pre-packed well screen may be used in lieu of the placement of a field installed sand pack. A 2-foot bentonite seal will then be placed above the screen and the remaining borehole will be backfilled with bentonite-cement grout and completed with a locking well-cap and steel protective cover.

4.2.4 Water Level Measurements

A minimum of 12 hours after installation of each piezometer to allow for equalization of the groundwater table, water level measurements will be collected from monitoring well OW5A-92, the temporary piezometers installed in borings GP02-11 through GP06-11, and piezometer PZ01-11.

Water level measurements will be obtained from the OW5A-92 and piezometer PZ01-11 by measuring the distance from the marked location of the top of the riser to the top of the water column using an electronic water level indicator. Water level measurements will be obtained from the temporary piezometers by measuring the distance from the top of the riser to the top of the water column using an electronic water level indicator, and subtracting the difference between the top of the riser and the ground surface. All measurements will be obtained to nearest hundredth of one foot accuracy.

Water level measuring equipment that comes in contact with ground water will be cleaned in accordance with Section 5.3 to ensure that cross-contamination does not occur.

4.2.5 Survey

After collection of the depth to groundwater measurements, the elevation of the top of the casing at PZ01-11 and the ground surface elevations at GP02-11 through GP06-11 will be surveyed by CHA field personnel for elevation and tied into the existing site survey data. Horizontal locations will be

determined by GPS. The survey data is necessary to determine the shallow groundwater contours and the overall direction of groundwater flow in the vicinity of monitoring well OW5A-92.

4.2.6 Groundwater Sampling

Prior to collecting a groundwater sample, each piezometer and monitoring well OW5A-92 will be purged by removing a minimum of three (3) well volumes. During the purging activities, field indicator parameters including pH, temperature, conductivity, and turbidity will be measured to evaluate well stabilization. The purging activities will continue until two (2) consecutive field readings are within ten percent for two or more parameters or until either a maximum of five (5) well volumes have been removed.

Immediately following purging, groundwater sampling will be carried out according to the following protocol:

1. Monitoring well/piezometers will be sampled using a bottom filling, dedicated polyethylene bailer attached to a nylon or polypropylene rope. A new, disposable bailer and length of rope will be used at each well.

2. VOC sample bottles shall be filled completely with no air bubbles.

3. The order for sample collection will be as follows:

    - Volatile Organic Compounds (VOCs)
    - Semi-Volatile Organic Compounds (SVOCs)
    - Herbicides

4. Groundwater samples will be submitted to a qualified laboratory certified by the NYSDOH ELAP for analysis. Each soil sample will be analyzed for the following: TCL VOCs using USEPA Method 8260 plus 10 TICS, TCL SVOCs using USEPA Method 8270 plus 20 TICS, and herbicides using USEPA method 8151.

4.3 PROPOSED SAMPLING AND ANALYSIS

Table 4-1 presents a summary of the proposed sampling and analysis plan. QA/QC samples will be collected in accordance with Section 4.0.

Sampling Rationale

Proposed sample locations are depicted on Figure 3. The sample identifications, depths (if applicable), analytical parameters, and detailed sampling rationale are presented on Table 4-1.

Table 4-1. Sampling Rationale

Sample ID	Matrix	Sample Depth (ft bgs)	Sample Location	Analytical Parameters	Rationale
GP02-11 (0-2)	Soil	0 to 2 feet	GP02-11	TCL VOCs, TCL SVOCs, Herbicides	GP02-11 (0-2) is to be collected to provide soil contaminant levels of the near surface soils northeast of the railroad tracks and OW5A-92.
GP02-11 (X-X)*	Soil	Interval which indicates the highest potential for the presence of contamination or the interval directly above the saturated zone	GP02-11	TCL VOCs, TCL SVOCs, Herbicides	GP02-11 (X-X) is to be collected to provide soil contaminant levels of the subsurface soils northeast of the railroad tracks and OW5A-92.
GP03-11 (0-2)	Soil	0 to 2 feet	GP03-11	TCL VOCs, TCL SVOCs, Herbicides	GP03-11 (0-2) is to be collected to provide soil contaminant levels of the near surface soils directly east of OW5A-02 and the railroad tracks.
GP03-11 (X-X)*	Soil	Interval which indicates the highest potential for the presence of contamination or the interval directly above the saturated zone	GP03-11	TCL VOCs, TCL SVOCs, Herbicides	GP03-11 (X-X) is to be collected to provide soil contaminant levels of the subsurface soils directly east of OW5A-02 and the railroad tracks.
GP04-11 (0-2)	Soil	0 to 2 feet	GP04-11	TCL VOCs, TCL SVOCs, Herbicides	GP04-11 (0-2) is to be collected to provide soil contaminant levels of the near surface soils east of OW5A-02 and the railroad tracks.

Sample ID	Matrix	Sample Depth (ft bgs)	Sample Location	Analytical Parameters	Rationale
GP04-11 (X-X)*	Soil	Interval which indicates the highest potential for the presence of contamination or the interval directly above the saturated zone	GP04-11	TCL VOCs, TCL SVOCs, Herbicides	GP04-11 (X-X) is to be collected to provide soil contaminant levels of the subsurface soils east of OW5A-02 and the railroad tracks.
GP05-11 (0-2)	Soil	0 to 2 feet	GP05-11	TCL VOCs, TCL SVOCs, Herbicides	GP05-11 (0-2) is to be collected to provide soil contaminant levels of the near surface soils directly north of OW5A-92, on the southwest side of the railroad tracks.
GP05-11 (X-X)*	Soil	Interval which indicates the highest potential for the presence of contamination or the interval directly above the saturated zone	GP05-11	TCL VOCs, TCL SVOCs, Herbicides	GP05-11 (X-X) is to be collected to provide to provide soil contaminant levels of the subsurface soils directly north of OW5A-92, on the southwest side of the railroad tracks.
GP06-11 (0-2)	Soil	0 to 2 feet	GP06-11	TCL VOCs, TCL SVOCs, Herbicides	GP06-11 (0-2) is to be collected to provide soil contaminant levels of the near surface soils directly southeast of OW5A-92, on the southwest side of the railroad tracks.
GP06-11 (X-X)*	Soil	Interval which indicates the highest potential for the presence of contamination or the interval directly above the saturated zone	GP06-11	TCL VOCs, TCL SVOCs, Herbicides	GP06-11 (X-X) is to be collected to provide soil contaminant levels of the subsurface soils directly southeast of OW5A-92, on the southwest side of the railroad tracks.
GP02-11	Water	To be determined based on field evidence of top of groundwater table	GP01-11	TCL VOCs, TCL SVOCs, Herbicides	GP01-11 is to be collected to determine the type and concentration of groundwater contamination present (if any) directly adjacent to the collection trench.
GP03-11	Water	To be determined based on field evidence of top of groundwater table	GP02-11	TCL VOCs, TCL SVOCs, Herbicides	GP02-11 is to be collected to determine the type and concentration of groundwater contamination present (if any) northeast of the railroad tracks and OW5A-92.
GP04-11	Water	To be determined based on field evidence of top of	GP03-11	TCL VOCs, TCL SVOCs,	GP03-11 is to be collected to determine the type and concentration of groundwater

Sample ID	Matrix	Sample Depth (ft bgs)	Sample Location	Analytical Parameters	Rationale
		groundwater table		Herbicides	contamination present (if any) directly east of OW5A-02 and the railroad tracks.
GP05-11	Water	To be determined based on field evidence of top of groundwater table	GP04-11	TCL VOCs, TCL SVOCs, Herbicides	GP04-11 is to be collected to determine the type and concentration of groundwater contamination present (if any) east of OW5A-02 and the railroad tracks.
GP06-11	Water	To be determined based on field evidence of top of groundwater table	GP05-11	TCL VOCs, TCL SVOCs, Herbicides	GP04-11 is to be collected to determine the type and concentration of groundwater contamination present (if any) directly north of OW5A-92, on the southwest side of the railroad tracks.
PZ01-11	Water	To be determined based on field evidence of top of groundwater table	GP06-11	TCL VOCs, TCL SVOCs, Herbicides	PZ01-11 is to be collected to determine the type and concentration of groundwater contamination present (if any) directly southeast of OW5A-92, on the southwest side of the railroad tracks.
OW5A-92	Water	12.5 to 17.5	OW5A-92	TCL VOCs, TCL SVOCs, Herbicides	OW5A-92 is to be collected to obtain current information regarding contamination concentrations in well OW5A-92.

*(X-X) will be replaced with actual sampling depth selected based on field observations.
Ft bgs = feet below ground surface

4.4 INVESTIGATION DERIVED WASTE

Soils generated during the investigation that do not contain any field evidence of contamination (visual, olfactory or photoionic) will be dispersed on the ground in the immediate vicinity of the associated boring. Any soil that is determined to be potentially contaminated based on field observations will be placed in DOT approved 55-gallon drums which will be temporarily staged on-site for characterization and final disposition.

All purge water will be considered to be contaminated and will be placed into five gallon buckets or other container. At the completion of the sampling at each location or at a time when the container is full the groundwater will be discharged to the on-site groundwater treatment system located at the north end of the site and treated in the onsite treatment system prior to permitted discharge to Cowhorn Creek.

All gloves, PPE, sampling materials, etc. will be collected on a daily basis and disposed of as solid waste.

5.0 QUALITY ASSURANCE PROCEDURES

5.1 QUALITY ASSURANCE OBJECTIVES

The overall quality assurance objective is to develop and implement procedures for sample preparation and handling, sample chain-of-custody, laboratory analyses and reporting to ensure the accuracy and integrity of the data generated during the investigation.

5.2 SAMPLING PROCEDURES

The procedures for collecting samples and for performing all related field activities are described in detail in Section 5.0. Sample preservation methods and maximum sample holding times for groundwater and soil samples are summarized in Table 5-1 on the following page.

A Chain-of-Custody will be maintained to document the transfer of all samples. Each sample container will be properly sealed. Sample container labels will include sample number, place of collection and date and time of collection. Sample containers will be shipped to the Contract Laboratory at 4°C (±2°C) in sealed coolers.

5.3 DECONTAMINATION

Prior to mobilization, the drill rig shall be thoroughly cleaned to remove oil, grease, mud, and other foreign matter. Subsequently, before initiating drilling at each boring location, samplers, drill steel, and associated equipment will be cleaned to prevent cross-contamination. All cleaning will be conducted at a predetermined on-site location. Cleaning will be accomplished using the procedures outlined in the following sections.

5.3.1 Small Equipment

For soil and groundwater sampling, dedicated sampling equipment is preferred. However, if non-dedicated equipment is used (i.e. Macrocore barrel), the required decontamination procedure for all manual sampling equipment used to collect samples for chemical analysis is:

Table 5-1. Sampling and Analytical Methods Requirements

Matrix (Sample Type)	Number of Samples Primary & QA-QC	Parameter /Fraction	Analytical Method	Recommended Sample Volume and Container	Sample Preservation	Technical Holding Time	Minimum Reporting Limits	Shipping Means	Packaging
Soil	10 Primary 1 Duplicate 1 MS/MSD	VOCs	EPA Method 8260	4 oz glass wide	Cool to 4°C	14 days from sample collection	Compound Specific (5-10 µg/kg)	Hand Delivery/ FedEx Priority	Cooler with ice and Bubble Pack
	10 Primary 1 Duplicate 1 MS/MSD	SVOCs	EPA Method 8270	8 oz glass wide	Cool to 4°C	14 days from sample collection/ 40 days from extraction	Compound Specific (≥330-830 µg/kg)	Hand Delivery/ FedEx Priority	Cooler with ice and Bubble Pack
	10 Primary 1 Duplicate 1 MS/MSD	Herbicides	EPA Method 8151	8 oz glass wide	Cool to 4°C	7 days from sample collection/ 40 days from extraction	≥ 16 µg/kg	Hand Delivery/ FedEx Priority	Cooler with ice and Bubble Pack
Water	6 Primary 1 Duplicate 1 MS/MSD 1 Trip Blank	VOCs	EPA Method 8260	(2) 40-ml VOA vial with Teflon lined septum	1:1 HC1 to pH<2; Cool to 4°C	14 days from sample collection	Compound Specific (5-100 µg/L)	Hand Delivery/ FedEx Priority	Cooler with ice and Bubble Pack
	6 Primary 1 Duplicate 1 MS/MSD	SVOCs	EPA Method 8270	(2) 1-iter amber glass with Teflon lined cap	Cool to 4°C	7 days from sample collection/ 40 days from extraction	Compound Specific (10-25 µg/L)	Hand Delivery/ FedEx Priority	Cooler with ice and Bubble Pack
	6 Primary 1 Duplicate 1 MS/MSD	Herbicides	EPA Method 8151	(2) 1-iter amber glass with Teflon lined cap	Cool to 4°C	7 days from sample collection/ 40 days from extraction	Compound Specific (0.5-2 µg/L)	Hand Delivery/ FedEx Priority	Cooler with ice and Bubble Pack

1. Disassemble equipment, as required.
2. Remove gross contamination from the equipment by brushing and then rinsing with tap water.
3. Wash and scrub with low phosphate detergent;
4. Tap water rinse;
5. Distilled water rinse;
6. Acetone or Methanol rinse;
7. Thoroughly rinse with distilled water; and
8. Air dry.

All decontaminated equipment will be placed on polyethylene sheeting or aluminum foil in order to avoid contacting a contaminated surface prior to use. Field personnel will use a new pair of outer gloves before handling sample equipment after it is cleaned. During periods of transportation and non-use, all decontaminated sampling equipment will be wrapped in aluminum foil.

5.3.2 Large Equipment

A temporary equipment decontamination pad will be constructed for the drill rig, which will be decontaminated before leaving the Site. The drill rig will be decontaminated by first removing gross contamination from the equipment by brushing or wiping. All equipment will then be thoroughly washed using a high-pressure steam cleaner.

The water generated from decontaminating equipment will be collected by placing 10-mil polyethylene sheeting over an approximately twenty-foot by twenty-foot area with raised sides and one low spot to direct the water to one corner of the pad. The collected water will be pumped into steel drums and managed as investigation derived waste in accordance with Section 5.5.

5.4 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

To assess the quality of data resulting from the field sampling program, field duplicate samples, samples for laboratory matrix spike/matrix spike duplicate (MS/MSD) analyses, and trip blank samples will be collected (where appropriate) and submitted to the contract laboratory.

For all matrices, field duplicate samples will be submitted at a frequency of one per 20 investigative samples (minimum of one per sampling event). Field duplicate samples for subsurface soil matrices

will be collected and analyzed as a check on the aggregate analytical and sampling protocol precision. Field duplicate samples for groundwater matrices will be collected and analyzed as a check on the analytical and sampling protocol precision.

MS/MSD samples will be analyzed at a frequency of one per 20 investigative samples. Matrix spike and matrix spike duplicate samples will be analyzed as a check on the analytical method's accuracy and precision.

Trip blanks will be submitted with each cooler containing aqueous samples to be analyzed for VOCs. Trip blank samples (for VOC determinations only) will be shipped by the laboratory to the Site and back to the laboratory without opening in the field. The trip blank will provide a measure of potential cross-contamination of samples resulting from shipment, handling and/or ambient conditions at the Site.

5.5 ANALYTICAL METHODS AND REPORTING

Groundwater and subsurface soil samples will be analyzed for VOCs + 10 TICs via EPA Method 8260, SVOCs + 20 TICs via EPA Method 8270, and herbicides via EPA Method 8151.

All QA/QC samples will be analyzed for the same parameters as the site-specific samples.

All reporting and deliverables will be in accordance with the NYSDEC July 2005 ASP, Category B. The laboratory will also be required to provide the data in an electronic data deliverable (Equis format) for electronic submission to the NYSDEC.

5.6 DATA VALIDATION

A qualified third party will conduct an independent evaluation of data reduction and reporting by the laboratory. The data validation will be performed in accordance with the following documents: "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review EPA 540/R-99-008, October 1999" and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review EPA 540/R-04-004, October 2004". Data analyzed using methods not covered in these documents will be validated using the general principles used in these documents.

6.0 HEALTH AND SAFETY PROTOCOL

6.1 General

The work to be completed during the off-site investigation will require site workers to perform tasks where personal safety could be compromised due to chemical, physical, and biological hazards. While conducting fieldwork, site workers may be exposed to chemical contaminants including a wide variety of organic compounds. Additionally, site workers may be exposed to physical hazards, including but not limited to, heavy machinery, excavations, fast-moving trains, and trip/fall hazards. Since the majority of the work to be completed will be done within the railroads right-of-way, compliance with the railroads safety requirements will be required.

A Site Health & Safety Plan (HASP) (Appendix B) has been prepared for the use of CHA and their employees. Properly trained and experienced CHA subcontractors may also use the HASP as a guideline document. The requirements and guidelines in the HASP are based on a review of available information and an evaluation of potential on-site hazards from previous studies and information available to date.

This HASP will be discussed with site personnel and will be available on-site for review while work is underway. All personnel conducting site activities must be familiar with the procedures, requirements and provision of this plan, and in the event of conflicting plans/requirements, personnel must implement those safety practices which afford the highest level of protection. CHA's Field Team Leader will also serve as CHA's Health and Safety Coordinator and is responsible for implementation of this HASP into daily site activities. A copy of the Site Health and Safety Plan is included in Appendix B.

7.0 REPORTING

An Off-Site Investigation Report will be prepared summarizing the information generated during implementation of this Work Plan. The report will be prepared in accordance with DER-10 Technical Guidance for Site Investigation and Remediation.

The report will include the following information and data pertaining to the Off-Site Investigation:

- Field logs, including but not limited to: boring logs, piezometer installation logs, groundwater sampling logs.
- Analytical data tables presenting the analytical results for the soil and groundwater.
- Groundwater piezometric surface map.
- Figures showing the extent of contamination identified in the soil and groundwater.
- A narrative that summarizes the results of the investigation including a discussion of the analytical results.

8.0 SCHEDULE

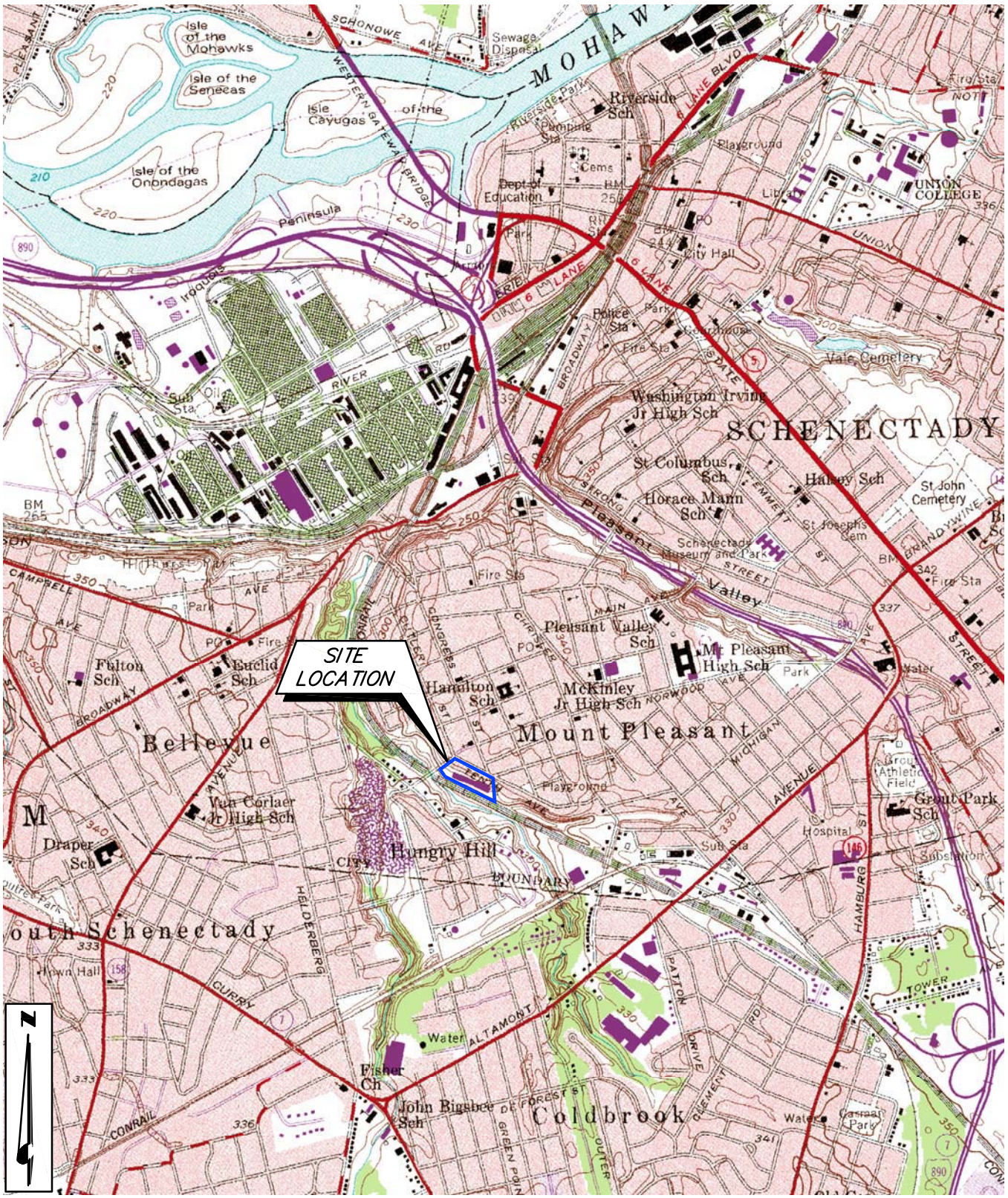
The following schedule has been developed based upon assumed durations of field investigation activities and may be extended or abbreviated based upon actual conditions encountered.

Table 8-1: Project Schedule

Task	Start Date
Field Investigation Initiated	Within 30 Days of receiving NYSDEC approval of Work Plan and access approval from CSX/Amtrak*
Analytical Results	Analytical results to be received with 30 days of sampling
Submittal of Off-Site Investigation Report to NYSDEC	Within 60 days of completing field investigation

*Approval from CSX includes obtaining the necessary approvals from CSX and permission to access the right-of -way. In addition, the field investigation may be delayed due to weather and site conditions.

FIGURES



SOURCE: U.S.G.S. 7.5' Topographic
QUADRANGLE: SCHENECTADY, NY

SCALE: 1"=2000'

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15091.2002.1102

DATE: 06-08-11

FIGURE 1

SITE LOCATION MAP

CONGRESS STREET PLANT
SI GROUP, INC.
SCHENECTADY, NEW YORK

File: M:\12978\Congress Street\acad\FIG-1.1.dwg User: 330 1/4/2005 11:05 AM

0 40 80ft

10TH AVENUE

CONGRESS STREET

OAK STREET

COWHORN CREEK

BUILDING

FENCE LINE

GATE

GRASS AREA

CONC.

HYD

GUIDE RAIL

BRUSH

DENSE WOODS

MH

CONC. LOADING DOCK

EXISTING SERVICE ROAD

TO ALBANY

OW8A-92
OW8B-92
OW7A-92
OW7B-92
OW9B-94
OW9A-94
OW12-94
OW13-94
PW-1
PW-2
PW-3
PW-4
WW-1
OW19A-07
OW19B-07
OW18A-07
OW18B-07
OW20-07
OW11-94
OW22-07
OW17A-07
OW17B-07
OW15B-07
OW15A-07
OW16B-07
OW16A-07
OW21A-07
OW21B-07
OW5A-92
OW5B-92
OW6A-92
OW6B-92

LEGEND

- RAILROAD
- FENCE
- CULVERT
- GROUNDWATER COLLECTION TRENCH
- 300 CONTOUR WITH ELEVATION
- GROUNDWATER ELEVATION CONTOUR
- OW7A-92 GROUNDWATER QUALITY MONITORING LOCATION
- OW15A-07 NEW GROUNDWATER ELEVATION MONITORING LOCATION
- PW-1 EXTRACTION WELL LOCATION
- WW-1 WET WELL LOCATION

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SITE PLAN
CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO. 15091

DATE: 06/11

FIGURE 2

0 40 80ft

10TH AVENUE

CONGRESS STREET

OAK STREET

FENCE LINE

GRASS AREA

CONC.

HYD

GATE

GUIDE RAIL

BRUSH

DENSE WOODS

COWHORN CREEK

BUILDING

BORING GP01–11

BORING GP02–11

BORING GP03–11

BORING GP04–11

BORING GP05–11

BORING GP06–11

EXISTING SERVICE ROAD

CONC. LOADING DOCK

TO ALBANY

EW2

MH

OW8A-92 OW8B-92 OW7A-92 OW7B-92 PW-1 PW-2 PW-3 PW-4 WW-1 OW9B-94 OW9A-94 OW13-94 OW12-94 OW19A-07 OW19B-07 OW18A-07 OW18B-07 OW20-07 OW11-94 OW22-07 OW17A-07 OW17B-07 OW15B-07 OW15A-07 OW16B-07 OW16A-07 OW21A-07 OW21B-07 OW5A-92 OW5B-92 OW6A-92 OW6B-92

LEGEND

- RAILROAD
- FENCE
- CULVERT
- GROUNDWATER COLLECTION TRENCH
- 300 CONTOUR WITH ELEVATION
- GROUNDWATER ELEVATION CONTOUR
- OW7A-92 GROUNDWATER QUALITY MONITORING LOCATION
- OW15A-07 NEW GROUNDWATER QUALITY MONITORING LOCATION
- PW-1 EXTRACTION WELL LOCATION
- WW-1 WET WELL LOCATION
- BORING GP05–11 PROPOSED GEOPROBE BORING LOCATION

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PROPOSED BORING LOCATIONS

CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO. 15091.4002

DATE: 6/2/11

FIGURE 3

APPENDIX A

CHA Staff Resumes

APPENDIX A
CHA RESUMES

Laury R. Bibighaus – CHA Project Manager

Education: Lehigh University, BS Chemical Engineering
Licensed Professional Engineer in the State of Pennsylvania

Mr. Bibighaus has over 30 years of experience in all aspects of environmental compliance programs. He has a broad, working knowledge of state and federal environmental regulations including hazardous waste, solid waste, PCB's, wastewater, groundwater, air emissions, and site remediation. His experience has been in the design, installation, permitting and management of environmental compliance programs as a consultant and in the industrial environment for large chemical manufacturing facilities.

Keith Cowan – CHA Quality Assurance/Quality Control

Education: University at Buffalo, B.A. Geology
Certified Professional Geologist

Mr. Cowan has over 14 years experience in the environmental consulting industry. His experience includes remedial investigations and feasibility studies (RI/FS), solid and hazardous waste landfill investigations and closure projects, environmental site characterizations and hazardous materials assessments for large facility decommissioning projects, environmental compliance projects, public and private Brownfield projects, as well as site remediation.

Sarah Newell – CHA Technical Manager/Project Coordinator

Education: Union College, B.S. Geology
University of Florida, M.S. Geology

Ms. Newell is a Staff Geologist in our Environmental Group. Her experience includes Environmental Health and Safety, oversight, fieldwork, project coordination, and environmental regulatory compliance services. Ms. Newell has experience in soil gas studies and vapor intrusion assessment, as well as soil and groundwater remedial technologies.

Jamie Herrick – CHA Field Oversight and Quality Control Coordinator

Education: SUNY College of Environmental Science and Forestry

Mr. Herrick has over 18 years experience including 12 years direct experience with solid waste, landfill, and environmental projects. He is versed in State and Federal Rules and Regulations, Safety Issues, and Heavy Construction projects.

APPENDIX B

Health and Safety Plan

SITE HEALTH AND SAFETY PLAN

PROJECT INFORMATION

Project Name: OW5A-92 Off-Site Investigation	**CHA Project No.** 15091
Project Start Date: TBD **Completion Date:** TBD	**Weather:** TBD
Project Location: Congress Street Facility, Schenectady, NY (SI Group, Inc.)	**Project Task:** Investigation relative to recent detections in off-site monitoring well OW5A-92

Description of Work: Installation of several soil borings/piezometers and sampling of wells/piezometers within the railroad right-of-way

Key Personnel:	Laury Bibighaus	Jamie Herrick	Jamie Herrick
Responsibilities:	*Project Manager*	*Field Team Leader*	*Site Safety Officer*

Description of Hazards: Physical hazards associated with soil boring/piezometer installation and groundwater sampling and with working in a railroad right-of-way.

TASK HAZARDS				TASK SAFETY MEASURES & PPE	
Eye	Chemical Exposure	Yes ☒	No ☐	☒ Safety Glasses	
	High Heat/Cold	Yes ☐	No ☒	☐ Safety Goggles	
	Dust/Flying Debris	Yes ☒	No ☐	☐ Face Shield	
	Impact	Yes ☐	No ☒	☐ Shaded Lenses	
	Light/Radiation	Yes ☐	No ☒		
Head	Impact	Yes ☒	No ☐	☒ Hard Hat: ☒ Orange or ☒ White or ☒ Blue	
	Electrical Shock	Yes ☐	No ☒	☐ Reflector Tape (Required for night operations)	
	Lack of Visibility	Yes ☐	No ☒		
Foot	Chemical Exposure	Yes ☐	No ☒	☒ Work Boots	☒ Steel Toed Boots
	High Heat/Cold	Yes ☐	No ☒	☐ Ankle Protection	☐ I/75 C/75 (Impact/Compression)
	Impact/Compression	Yes ☒	No ☐	☐ Rubber Boots	☐ Cd Type 1 or 2 (Conductive)
	Slips/Trips	Yes ☒	No ☐	☐ Insulated Boots	☐ PR (Puncture Resistant)
	Puncture	Yes ☐	No ☒	☐ Non-slip Soles	☐ Mt/70 or 50 or 30 (Metatarsal)
	Slippery/Wet Surface	Yes ☐	No ☒	☐ Chemical resistant	☐ EH (Electrical Hazard)
	Explosive/Flammable Atmospheres	Yes ☐	No ☒		☐ SD Type I or II (Static Dissipative)
	Electrical	Yes ☐	No ☒		
Hand	Chemical Exposure	Yes ☒	No ☐	☐ Work Gloves	☐ Rubber Gloves
	High Heat or Cold	Yes ☐	No ☒	☐ Leather Gloves	☒ Nitrile Gloves
	Cuts/Abrasion	Yes ☐	No ☒	☐ Latex Gloves	☐ Insulated Gloves
	Puncture	Yes ☐	No ☒	☐ Vinyl Gloves	☐ Metal Mesh Gloves
	Electrical Shock	Yes ☐	No ☒	☐ Neoprene Gloves	
	Bloodborne Pathogen	Yes ☐	No ☒	☐ Butyl Gloves	
Body/Torso	Chemical Exposure	Yes ☐	No ☒	☐ Tyvek Suits: ☐ White or ☐ Yellow	
	Extreme Heat/Cold	Yes ☐	No ☒	☐ UV Protection	☐ First Aid Kit
	Abrasion	Yes ☐	No ☒	☐ Coveralls	☐ Traffic Cones
	Impact	Yes ☐	No ☒	☐ Reflective Vest	☐ Signage
	Electrical Arc	Yes ☐	No ☒	☐ Insect Repellent	☐ 2- Way Radios
	Biological Hazards	Yes ☐	No ☒	☐ Tick Removal Kit	☐ Flashlight
Fall	Fall Hazard	Yes ☐	No ☒	☐ Harness	☐ Fall Protection Lanyard
Noise	Noise Hazard	Yes ☒	No ☐	☒ Ear Plugs	☐ Ear Muffs

SITE HEALTH AND SAFETY PLAN

Respiratory	Chemical Exposure	Yes ☐	No ☒	☐ Respirator: ☐ ½ Face or ☐ Full Face
	Confined Spaces	Yes ☐	No ☒	☐ Cartridge: ☐ P or ☐ OV or ☐ C
	Particulate Exposure	Yes ☐	No ☒	
	Welding Hazard	Yes ☐	No ☒	

SITE CONTROL

Site Control/Site Security[1]:	Fencing around project site by Client/Property Owner	M & PT: ☐ Y ☐ N *If yes, sketch information on separate sheet*
Confined Space Entry: *If Yes, Attach Permit*	☐ Y ☒ N	
Decontamination: *If Yes, Describe*	☒ Y ☐ N See Section 5.3 of Work Plan	
Site Monitoring[2]: *If Yes, Describe*	☐ Y ☒ N	

CONTINGENCY PLAN

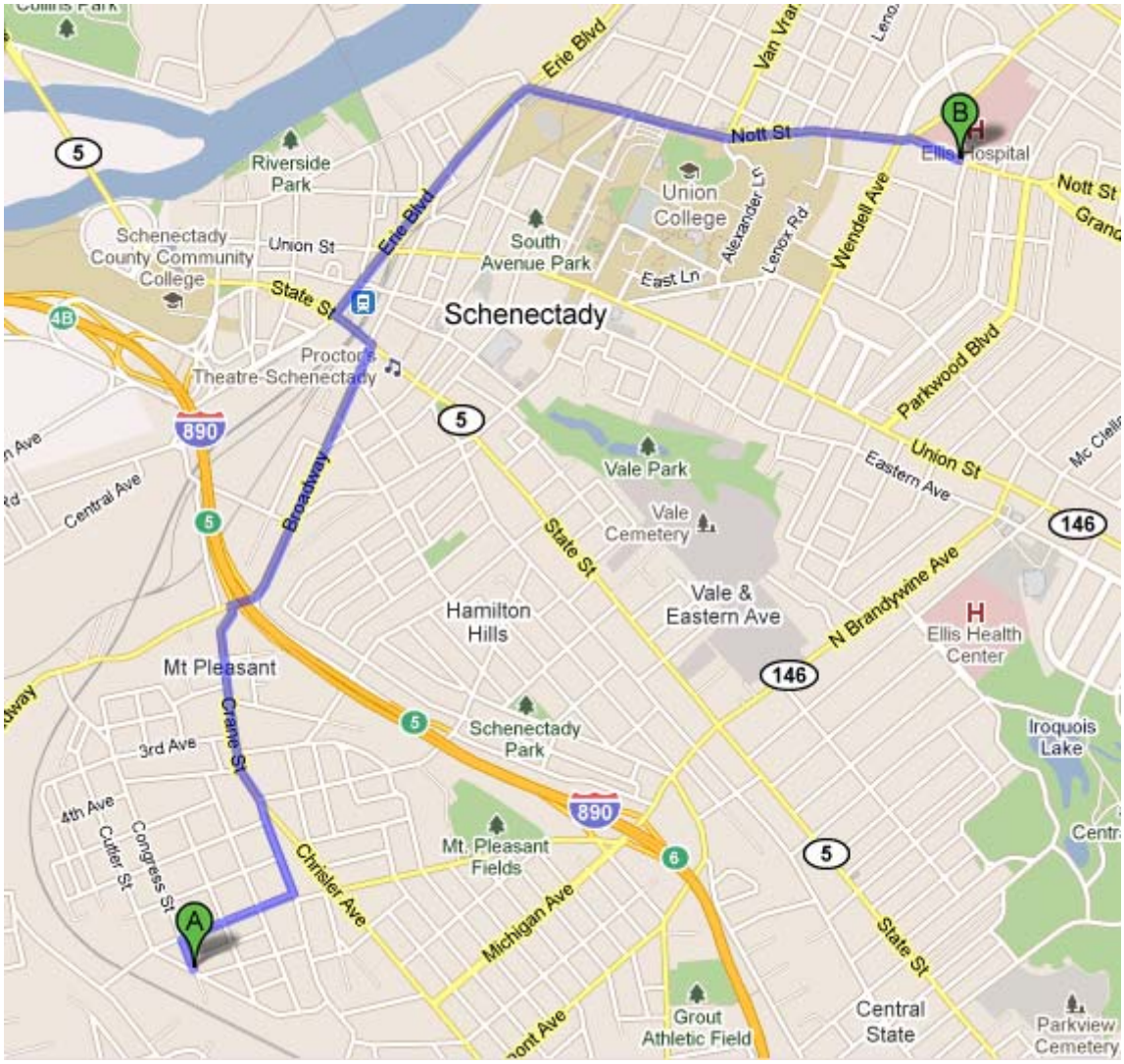
Emergency Contacts:	Police: 911 Ambulance: 911 Fire: 911 Hospital: 518-243-4235	Client Contact: Mark Normandin Client Phone #: 518- 862-9133 CHA PM Phone #: 518-453-2897 Poison Control: 800-336-6997
Route to Hospital:	See Attached	
Communication:	☒ Cell Phone ☐ Nearest Pay Phone ☐ Pager	

COMMENTS: ALL SAFETY REQUIREMENTS SET FORTH IN THE "CONTRACTORS HANDBOOK FOR CSX ROADWAY WORKER PROTECTION" NEED TO BE FOLLOWED WHEN WORKING ON CSX PROPERTY.

PLAN SIGN-OFF

Name:	Name:	Name:	Name:
X:	X:	X:	X:
Date:	Date:	Date:	Date:
Name:	Name:	Name:	Name:
X:	X:	X:	X:
Date:	Date:	Date:	Date:

MAP TO ELLIS HOSPITAL



DRIVING DIRECTIONS

1. Head **northwest** on **Congress St** toward **Hodgson St**	371 ft
2. Take the 2nd right onto **8th Ave**	0.3 mi
3. Turn left onto **Crane St**	0.7 mi
4. Turn right onto **Broadway**	0.7 mi
5. Turn left onto **State St**	0.1 mi
6. Take the 1st right onto **Erie Blvd**	0.7 mi
7. Turn right onto **Nott St** Destination will be on the left	1.0 mi