Former ALCO Site
Brownfield Cleanup Project

City of Schenectady
Schenectady County, New York

Interim Remedial Measures Work Plan (IRM-WP)

New York State
Brownfield Cleanup Program
Site Nos. C447042, C447043, and C447044

January 2014

Barton & Loguidice

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Prepared For:

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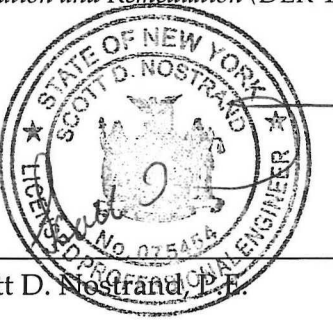
I, the undersigned engineer, certify that I am currently a NYS registered professional engineer and that this Interim Remedial Measures Work Plan was prepared in accordance with all applicable statutes and regulations, and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).



Scott D. Nostrand, P.E.

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1.0 Introduction

Maxon ALCO Holdings, LLC (MAH) entered into Brownfield Cleanup Agreements (BCA) through the New York State Department of Environmental Conservation's (NYSDEC) Brownfield Cleanup Program (BCP) for the property located at 301 Nott Street in Schenectady, New York, identified as the ALCO Site (Property or Site) and historically known as the Nott Street Industrial Park (Park). In 2010, after purchasing the property, the Volunteer (Maxon-ALCO Holdings) divided the Property into three parcels: Parcel A, Parcel B and Parcel C (Site Nos. C447042, C447043, and C447044, see Figure 1) and each Parcel was deemed eligible for the BCP and subject to separate BCAs. In November of 2013, MAH proposed the reconfiguration of Parcels B and C to NYSDEC to more efficiently proceed with potential Interim Remedial Measures and redevelopment planning; the proposed reconfiguration was approved by NYSDEC by letter dated December 23, 2013.

The purpose of the BCP is to encourage voluntary remediation of brownfield sites for reuse and development. This includes conducting a complete characterization of the Site by performing a Remedial Investigation (RI). The primary objective of the RI is to identify environmental concerns and to provide the basis for evaluating remedial alternatives, if necessary. The RI was completed in the first half of 2012, and the RI Report (prepared by CHA) was submitted to NYSDEC in August 2012. Though a separate Work Plan was prepared for each Parcel, the Remedial Investigation (RI) Report covered the entire Site since remedial decision making will include activities that involve multiple parcels on the ALCO Site.

Specifically, the objectives of the RI were to:

- Supplement the historic investigations that have been conducted on the Site,
- Further identify source(s) of contamination,
- Define the nature and extent of that contamination,
- Assess the impact of contamination on public health or the environment, and
- Provide information for the development and selection of a remedial work plan across all parcels (A, B, and C) that make up the Alco property.

The RI Report also provided a qualitative human health exposure assessment. An exposure pathway is complete when all five elements of an exposure pathway are documented; a potential exposure pathway exists when any one or more of the five elements comprising an exposure pathway is not documented.

The results of the exposure assessment indicated that there is currently one complete potential exposure pathway.

- Potential exposure of current tenants of Buildings 304, 306 and 330 to VOCs in indoor air through inhalation.

The following potential exposure pathways were identified:

- Exposure of future on-Site workers, residents, site occupants to soil, groundwater, soil vapor or LNAPL that may have detectable concentrations of VOCs, SVOCs, and/or metals during future intrusive activities at the Site. Routes of exposure to future on-Site workers could include inhalation, ingestion, dermal contact, eye contact, and puncture/injection.
- Exposure to groundwater that may have detectable concentrations of VOCs, SVOCs, and/or metals if groundwater wells are installed and used for drinking water, etc.

By letter dated December 14, 2012, NYSDEC provided comments on the RI Report; general comments were provided for site-wide issues, and comments specific to each parcel were also provided. The comment letter indicated that no further investigation was required for a majority of the areas/issues that were addressed by the RI. Finally, the comment letter requested additional data collection activities to follow-up on and/or reserve some specified issues to finalize the RI.

In January 2013 Barton & Loguidice prepared a Supplemental Remedial Investigation Work Plan (SRI-WP) to provide the procedures for conducting the requested follow-up work. In follow-up discussions with the NYSDEC, there was concurrence that the design investigation tasks proposed in the Remedial Work Plan (RWP) should be combined with the requested follow-up RI work, as the tasks were 1) similar in nature, and 2) needed to be performed prior to the Remedial Design (RD). The tasks performed during the Supplemental Remedial Investigation are summarized below:

<u>Tasks Requested in the NYSDEC 12/14/12 Letter and Follow-up Discussion:</u>

- Follow-up investigation on the geophysical investigation in identified areas
- Soil Vapor Intrusion investigation in the identified buildings
- Installation of three monitoring wells between Buildings 306-320
- Inspection of Buildings 308 Trench
- Borings in the MW-36 Area (AOC 1A)

<u>Tasks Proposed in the Remedial Work Plan (RWP):</u>

- Chlorinated Solvent Plume Source Investigation (AOC 2)
- Chlorinated Solvent Plume Delineation (monitoring wells) (AOC 2)
- Monitoring well in the MW-45 Area (AOC 1B)

The SRI activities included the installation of soil borings, monitoring wells, soil vapor monitoring points, and test pits along with the collected of subsurface soil, soil vapor, and groundwater to further characterize the site. The planned scope of SRI activities consisted of the following:

- Installation of three (3) monitoring wells between Buildings 306-320 screening the water table and the collection of groundwater samples for VOCs analysis.
- Installation of three (3) monitoring wells screening the water table near MW-45 to determine the approximate extent of previously documented LNAPL at this location.
- Installation of 12-15 Geoprobe borings around MW-36 to assess the extent of previously documented LNAPL at this location.
- Advancement of approximately 30 membrane interface probe (MIP) borings near SV-C9 and MW-19 to determine the source of the previously documented chlorinated solvent plume.
- Collect subsurface soil samples from the MIP borings for VOCs analysis.
- Installation of four (4) monitoring wells to delineate the chlorinated solvent plume and determine an effective means for mitigation.
- Collection of groundwater samples from the four (4) newly installed chlorinated solvent plume delineation wells along with seven (7) existing plume delineation wells to be analyzed for VOCs.
- Installation of test pits around Ground Penetrating Radar (GPR) area 2, 6, and 8 as a follow-up to the geophysical survey performed during the 2012 Remedial Investigation by CHA.
- Installation of six (6) subsurface soil vapor points in Buildings 300, 306, and 330.
- Inspection and confirmation of filling of the former Building 308 trench system.

The Supplemental RI activities were completed during the period from May through August 2013. Field activities were conducted in general accordance with NYSDEC protocols (including DER-10), the Remedial Action Work Plan (Kleinfelder, Inc., 2010), and the Supplemental Remedial Investigation Work Plan (Barton & Loguidice, P.C., 2013). Deviations from these plans are summarized below.

- Due to the presence of a thick concrete slab in the area surrounding SV-C9 and MW-19 the MIP could not be advanced. Instead, a Geoprobe was utilized to advance the MacroCore and a photoionization detector (PID) and field Gas Chromatograph (GC) were used to screen select samples in the field before submitting to the lab for analysis.
- Monitoring well MW-50 was sampled during the RI and was scheduled for re-sampling, but could not be located and was not sampled.

- The NYSDEC and NYSDOH advised in a phone call on 5/31/13 that soil vapor samples were not required in Building 300 due to extensive mold in the basement and the building's current unoccupied status. SVI sampling will be required if the building is to be occupied.

Under contemplated future land use, the objective of the selected remedial alternative will be to prevent exposure to contaminated soil, groundwater, and soil vapor.

The Alternatives Analysis Report (AAR) is the next step in the BCP process; the AAR was prepared and revised by Barton & Loguidice, Inc., and was submitted to NYSDEC in December 2013. As part of the AAR, three areas of concern (AOCs) were identified based on the findings of the RI and the Exposure Assessment:

1. Historic aged, Light Non-Aqueous Phase Liquid (LNAPL- free-phase petroleum) on the water table around monitoring well MW-36 and MW-45 (AOCs 1A and 1B) and existing underground storage tanks (USTs) that were not properly closed (AOC 1C) ;
2. A chlorinated solvent plume in a narrow area of the eastern portion of the Site that extends from the vicinity of MW-19 toward the Mohawk River (AOC 2); and
3. Soils with elevated detections of polynuclear aromatic hydrocarbons (PAHs) (AOC 3) associated with past industrial activities.

1.1 Purpose of Report

This work plan (WP) has been prepared to present the procedures for remediating AOCs 1A, 1B and 1C as Interim Remedial Measures (IRMs). The use of IRMs to address discrete AOCs such as USTs and LNAPL accumulations is specifically discussed in DER-10 Section 1.11. Methods for remediating AOCs 2 and 3 are presented in the AAR and Remedial Work Plan (RWP), which are under review by NYSDEC. This IRM-WP has been prepared in accordance with DER-10, 6 NYCRR Part 375, and the Brownfield Cleanup Program Guidelines.

1.1.1 Report Organization

This report is organized into three sections (including this introduction section), with appropriate subsections within each division. Figures are located following the text, prior to the appendix in the back of the document.

1.2 Site Background

1.2.1 Site Description

The Schenectady Locomotive Engine Manufactory initially developed a portion of the existing Park in 1849. In 1851, the company changed its name to Schenectady Locomotive Works (Works) and continued to develop the Site. In 1901, the Works merged with several other companies to form the American Locomotive Company (ALCO). ALCO operated the Site until 1969. Schenectady Industrial Corporation (SIC) purchased the Park in 1971, with General

Electric Company (GE) occupying the Park from 1971 to 1985. Small industrial, manufacturing and fabrication companies have occupied various buildings within the Park since 1985, when occupancy of buildings was returned to SIC.

During April 1992, Coyne Textile Services (CTS), with operations on Front Street, adjacent to the ALCO Site, had a fuel oil release that partially leaked into the municipal storm drain sewer system which flows under the Site, discharging to the Mohawk River at the College Creek Outfall. During inspection of this release, the NYSDEC reportedly observed petroleum seeping from riprap along the bank of the Mohawk River adjacent to Buildings 320 and 324. The NYSDEC requested that a subsurface investigation be performed onshore adjacent to the petroleum seep areas. Following this release, Schenectady Industrial Corporation (SIC) entered into an Order on Consent (OC), (Index No. R4-1338-92-05), with the NYSDEC .

In 1992, SIC performed a subsurface investigation that included advancing a series of five hand-excavated test pits, (TP-A1 through TP-E1), along the riverbank. Soil analytical results indicated total petroleum hydrocarbon (TPH) concentrations up to 12,000 parts per million (ppm). Following these results, two deep soil borings and five shallow soil borings were advanced adjacent to the test pits. The five shallow soil borings were completed at groundwater monitoring wells. Free-phase petroleum was found in two wells and the free-phase petroleum in one well was found to contain trace levels of polychlorinated biphenyls (PCBs). Groundwater analytical results indicated TPH concentrations ranging from 4.6 ppm to 32,200 ppm. Volatile organic compound (VOC) concentrations were detected.

Historically there have been many environmental investigations completed at the former ALCO Site since the initial investigation in 1992. These investigations, some of which were conducted in conjunction with NYSDEC oversight, have taken place across the ALCO-Maxon Site, which has been separated into Parcels A, B and C. In addition to the environmental investigations conducted throughout the former ALCO Industrial property, underground storage tank (UST) removals and remedial activities have been completed on the ALCO-Maxon Site parcels. Summaries of the investigations, UST removals and remedial activities are provided in Section 4.0.

Due to the historic industrial impacts identified on the ALCO Site and subsequent to the execution of a BCA, three Remedial Investigation Work Plans (one for each parcel) were prepared by Kleinfelder, Inc. (KLF) and submitted to NYSDEC on May 24, 2010. The Work Plan outlined the procedures and protocols that were to be utilized to conduct a full-scale remedial investigation that would provide the necessary field data to further delineate the nature and extent of contamination at the subject Site. The Work Plan was prepared to conform to the Draft DER-10 *Technical Guidance for Site Investigation and Remediation* issued by the Division of Environmental Remediation (December 2002). The RI Work Plans for Parcels B and C were subsequently approved by the NYSDEC on June 23, 2011. One of the comments received by the NYSDEC was a request for sampling of both the riverbank and Mohawk River sediments adjacent to the Site. Following the submission of a Work Plan Addendum on January 10, 2012, the RI Work Plan for Parcel A was approved by the NYSDEC on January 23, 2012.

1.2.2 Remedial Investigation Findings

1.2.2.1 Geology/Hydrogeology

The Site is underlain by a unit of fill that is present across much of the Site, varying from a minimum depth of 2 feet to a maximum depth observed during the RI of 12.4 feet. In general, the fill material consists of reworked soil (e.g., silt, sand, gravel, and clay) with lesser amounts of brick, concrete, ash/cinders, slag, metal, wood/organics, and glass. In locations where the fill unit is generally thinner, a fine to coarse grained sand unit of limited thickness is present beneath the fill. Based on the groundwater contours, as presented in Figure 6, it is apparent that groundwater flow across the majority of the subject Site is to the North towards the Mohawk River. The horizontal hydraulic gradient from south to north across the Site (i.e. from MW-19 to MW-25D) is approximately 0.006 ft/ft.

1.2.2.2 Surface Soil

The analytical results from this RI confirm that there are no VOC or PCB impacts to surface soil at the Site. These results are generally consistent with results from previous investigations. There are relatively widespread SVOC detections in surface soils at concentrations below Part 375 SCOs, and only limited areas that exceed Part 375 SCOs. The presence of certain VOC and SVOC Tentatively Identified Compounds (TICs) suggest that degradation/breakdown of historic aged petroleum has and/or is occurring across the Site. Lastly, there are limited, isolated areas of trace amounts of arsenic, lead, and/or mercury that slightly exceed Part 375 SCOs.

1.2.2.3 Subsurface Soil

Analytical results for samples collected from the upper fill/sand unit establish that there are no significant VOC impacts and only limited SVOC impacts to unsaturated soils. Within the unsaturated zone, the area of highest SVOC concentrations is present in the area just west of Building 308, the area located just south of Building 320, beneath the slab of Building 320, and the area between Buildings 316 and 332.

Based on the analytical results for soil samples that were collected from test pits as part of the current RI and from previous investigations, there is no evidence of any PCB or metal impacts to subsurface soils across the Site.

1.2.2.4 Groundwater

The results obtained during this RI confirm the detection of a historic chlorinated solvent plume, which appears to originate upgradient from or in the vicinity of MW-19 and extends over 1,200 feet in length towards the Mohawk River. The plume is relatively narrow and is well-delineated to the east, south and west. The depth of the plume is relatively shallow (~20 feet bgs) in the vicinity of monitoring well MW-19 and temporary monitoring well TMW-19C and deepens to approximately 50 to 70 feet bgs along the length of the plume. The data

confirms that natural degradation is occurring based on the presence of PCE and TCE breakdown products.

The only other areas with impacts to groundwater are those with relatively localized SVOC (PAH) detections that are generally associated with former UST areas or free product recovery areas. However, a comparison of analytical results from this and from previous investigations suggests that contaminant concentrations have generally decreased, with few exceptions. The presence of TICs in most wells across the Site, consisting primarily of petroleum-related compounds, suggest that degradation/breakdown of historic, aged petroleum has occurred in groundwater across the Site.

1.2.2.5 Soil Vapor Summary

The most apparent impacts to subsurface vapor are present at the southern edge of the Site located just north of Erie Boulevard. The subsurface in this area is primarily impacted by chlorinated VOCs that appear to be related to the underlying chlorinated solvent groundwater plume. Chlorinated VOC detections extend to the north/northeast and generally follow the direction of the groundwater plume. There are also chlorinated VOC detections in subsurface soil vapor in a limited area between Buildings 346 and 324 and in the southwestern-most portion of the Site between Buildings 306 and 308. There are various but minor impacts to subsurface soil vapor from petroleum-related compounds; however, the detections do not indicate the presence of any significant petroleum source for soil vapor contamination.

1.2.2.6 Riverbank Soil Summary

The analytical results from this RI indicate that there are no VOC or PCB impacts to soils on the bank of the Mohawk River that runs parallel to the Site, generally consistent with results from previous investigations. Impacts from SVOCs to the riverbank of the Mohawk River associated with the Site are generally limited to areas where historic operations took place, in the immediate vicinity of Buildings 326, 324 and 322.

Based on the results obtained during this RI and the previous remedial measures undertaken, minor detections of inorganics (mainly iron, arsenic, mercury and lead) in riverbank soils appear to also be limited to the western portion of the riverbank that runs parallel to the Site (west of College Creek Outfall). The eastern portion of the riverbank has only limited detections of metals (arsenic and lead) slightly above Part 375 SCOs in the area north of Building 346.

1.2.2.7 River Sediment Summary

Collectively, the RI noted detectable concentrations of contaminants present in Mohawk River sediments both adjacent to the Site and upstream from the Site. The data suggests an up-gradient source of the chlorinated VOCs detected in the river sediments, but the impacts are relatively localized. There do not appear to be any VOC impacts to sediment immediately adjacent to the site. SVOC impacts are most evident upstream and adjacent to the western-most

portion of the site (i.e. in the Building 320 area to the east) and suggest that, in addition to limited contribution from the Site itself, an up-gradient SVOC source is, or was, also present. There are no PCB impacts to the river sediments. The results also indicate that sediments both adjacent to the Site and upstream from the Site have detectable concentrations of metals. The data reflects that the Site is not causing significant adverse inorganic impacts to river sediments.

1.2.3 Supplemental Remedial Investigation Findings

The additional activities implemented as part of the SRI provided further delineation and identification of historic industrial conditions at the former industrial property. The data gathered was consistent with prior site investigation information.

1.2.3.1 Parcel A

- NAPL was detected in two of the three monitoring wells installed around MW-45; NAPL thicknesses varied from roughly one inch in MW-47 to roughly one foot in MW-48.
- Concentrations of chlorinated VOCs in Parcel A monitoring wells sampled ranged from 136 ug/L to 3082 ug/L.

1.2.3.2 Parcel B

- Follow-up on the geophysical study Area 2 identified an underground vault.
- Follow-up on the geophysical study Area 6 identified a former concrete building wall with re-bar.
- Concentrations of petroleum-related VOCs were detected in one of the three wells installed between Building 306 and former Building 320; concentrations did not exceed 22 ug/L.
- Concentrations of chlorinated VOCs in Parcel B monitoring wells sampled ranged from ND to 178 ug/L.

1.2.3.3 Parcel C

- Follow-up on the geophysical study Area 8 identified two underground storage tanks that had been used for petroleum products. The tanks did not appear to have been abandoned or backfilled.
- SVI results in Buildings 306 and 330 detected contaminants both in sub-slab soil vapor and in ambient air above guidance concentrations, but there was not a large degree of correlation between the contaminants detected in sub-slab versus ambient air samples.
- LNAPL was detected in one of the ten boring locations around to MW-36; the one location where LNAPL was detected was roughly five feet from MW-36.

1.2.3.4 Site-Wide Groundwater Quality

- Monitoring wells installed on Parcels A, B and C provided further delineation of the chlorinated solvent plume, which migrates across the three parcels along the established groundwater flow gradient.
- The source area for the chlorinated solvent plume was identified and delineated in an area of Parcel C around soil vapor point SV-C9.

1.2.4 Current and Intended Use

The City of Schenectady adopted its new Zoning Ordinance (Chapter 264) on March 24, 2008. The ALCO Site is zoned C-3 Waterfront Development District. The purpose of the C-3 district is to provide unique opportunities for the development and maintenance of water-oriented uses within certain areas of the City adjacent to the Mohawk River. The C-3 District permits certain recreational, open space, business, and residential uses which will generally benefit from and enhance the unique aesthetic, recreational, and environmental qualities of the waterfront areas.

The former industrial site is serviced by municipal water and sewer and currently has commercial tenants on a limited portion of the property along Front Street and is otherwise unoccupied with the vacant structures being demolished in 2011. The intended future use of the site is to contain a mixture of restricted - residential and commercial uses.

2.0 Supplemental Remedial Investigation Findings

This section discusses the findings of the Supplemental Remedial Investigation for the three areas to be addressed as IRMs. The three areas are shown on the Site Location Map (Figure 1).

2.1 MW-36 Area (AOC 1A)

Recovery of Light Non-Aqueous Phase Liquid (LNAPL) in the MW-36 series wells was begun by Kleinfelder in 2008, and efforts were continued when site demolition work was initiated in 2011, when electrical power was unavailable. During 2011 to mid-2012, LNAPL thicknesses were measured and the accumulated LNAPL was manually removed from the wells in the MW-36 area. LNAPL thicknesses were typically in the range of three feet and the amount of LNAPL removed was typically in the range of one to three quarts per event. A battery-operated belt skimmer was installed in mid-2012 to address the only well with remaining LNAPL, MW-36C, which is effectively surrounded by monitoring wells that do not contain LNAPL.

During the SRI, a total of ten borings (B-BL1 through B-BL10) were advanced in the vicinity of MW-36C and screened with a PID and visually examined for the presence of LNAPL. The borings were advanced to total depths ranging from 10 to 15 feet, or where the water table was encountered. PID readings ranged from 1.5 to 170 ppm (parts per million) with a majority of the contamination noted from 8 to 10 feet. Soils in this area generally consisted of approximately five feet of fill material overlain on sand with some fine to medium gravel.

During the investigation, the presence of LNAPL saturation was noted on the MacroCore sleeve at boring location B-BL2 (located approximately 5 feet northwest of MW-36C). A 10-foot section of 1-inch PVC was installed at this location with a screen interval at 5 to 10 feet. The product monitoring point was observed over time; product thicknesses ranged from 0 to 1.5 inches over a 30 day timeframe. Remaining boring locations did not contain evidence of LNAPL saturation during the investigations and borings were subsequently backfilled.

2.2 MW-45 Area (AOC 1B)

LNAPL was detected in monitoring well MW-45 during the 2012 Remedial Investigation conducted by CHA. Subsequent monitoring and LNAPL removal was conducted on a roughly monthly basis for six months. LNAPL thickness ranged from approximately three feet to less than one foot; LNAPL recovery ranged from roughly three quarts to one pint. Both the LNAPL thickness and recovery decreased with time.

During the SRI, three new monitoring wells were installed in the vicinity of MW-45 for the purpose of delineating the extent of previously detected in MW-45, and were monitored to determine if there was any LNAPL accumulation. Since installation, approximately five gallons of LNAPL was manually removed from MW-58 and placed in a designated on-site storage container. Approximately 1-inch of LNAPL product was also noted in MW-57 and removed. The presence of LNAPL in MW-59 was not observed during monitoring.

2.3 Geophysical Study GPR Area 8 (AOC 1C)

The Geophysical Survey work performed during the RI identified two possible underground storage tanks (USTs) in GPR Area 8. The possible USTs had areal dimensions of 7 feet by 22 feet and 16 feet by 18 feet. Additional work was conducted during the SRI to help determine whether the status of the tanks (i.e. – whether they had been filled with inert material).

The tank area was covered by a concrete slab, which was cleaned off to expose the top of the tank. The tanks were physically inspected to determine whether they were closed by being filled with inert material (sand or concrete). The filling appurtenances for the tanks were contained in a metal vault roughly 3 feet in diameter, which had been filled with concrete. The tanks themselves were accessed through two standpipes by lowering a water-level probe; the probe was lowered to the apparent bottom of each tank (roughly 11 feet below the top of the concrete slab). The tanks did not appear to have been backfilled, so in accordance with the SRI work plan, these tanks have been identified as AOC 1C and will be removed as part of this IRM program.

3.0 IRM Methodology

This section provides the methodology for performance of the IRMs. The use of IRMs is discussed in DER-10 Section 1.11, which indicates that IRMS are a preferred method for addressing discrete AOCs such as USTs and LNAPL accumulations. IRMs have been determined to be appropriate for this BCP Site.

A Health & Safety Plan (HASP) for Barton & Loguidice, Inc. personnel is provided in Appendix A of this IRM-WP. The HASP was developed in accordance with 29 CFR 1910.120. Other companies (contractors) who will be working on these IRMs can adopt the B&L HASP or provide their own HASP; in either case, safety for personnel of companies other than B&L is the responsibility of that company, pursuant to OSHA regulations.

3.1 AOC 1A and AOC 1B

Each of these AOCs is of similar size and the same type of remedial issue – LNAPL floating on the water table surface, so the basic remedial approach will be the same.

A backhoe will be used to begin excavating at the monitoring well where LNAPL has been observed. Soils will be field-screened with a photoionization detector (PID) as they are removed from the excavated hole. Soils which do not exhibit evidence of staining, odors and/or elevated PID readings will be stockpiled on plastic sheeting to allow for further inspection and/or sampling, as needed. It is anticipated that much of the overlying soils will not be impacted and will be able to be re-used on-site, subject to NYSDEC approval.

As impacted soils are encountered (evidenced by staining, odors and/or elevated PID readings), they will be removed from the excavation and stockpiled on a separate soil storage area that is lined with plastic sheeting and bermed to prohibit run-off. In the event that LNAPL is present in the excavation, efforts will be made to recover as much as feasible. Small amounts will be soaked up using oleophilic pads, boom or similar. If greater amounts are present, a temporary large diameter (e.g. – 6 inch diameter) well casing will be installed vertically in the bottom of the excavation with a belt skimmer to recover the free-phase LNAPL.

Excavation will be continued vertically and laterally until the impacted soils have been removed. After completion of the excavation, confirmatory samples will be collected from the sides and bottom of the excavation hole. The final number of samples will be determined in accordance with DER-10, and will be subject to concurrence in the field with NYSDEC. Confirmatory samples will be analyzed for volatile organic compounds (VOCs) by USEPA Method 8260B.

Stockpiled impacted soils will be sampled, with the number of samples and analytical parameters dictated by the soil disposal facility. Impacted soils will remain on the soil storage pad and will be covered with plastic sheeting while awaiting disposal approval. Once the soils are approved for disposal, they will be loaded with a front-end loader onto transports (dump trucks, roll-off boxes). Transports will have the necessary approvals, permits and licenses for

transport of petroleum-impacted soils in NYS, and will be placarded in accordance with NYDEC and NYSDOT regulations.

3.2 AOC 1C

The USTs that compromise AOC 1C will be removed in accordance with 6NYCRR Parts 611-612 and DER-10 Section 5.5. The following steps will be used for tank removal.

- Break up and remove the concrete pad overlying the tanks.
- Excavate around the tanks to expose their full length and width. Screen soil as it is removed and place stockpiled soil on a plastic sheet.
- Measure vapor concentrations in the tank with a portable meter capable of measuring the specific petroleum vapors in the range of the Lower Explosive Limit (LEL). No cutting will begin until vapor concentrations are below 10% of the LEL. If needed, the tank will be ventilated to reach the necessary limit.
- Clean inside of tanks. Contain rinseate.
- Cut tanks into workable sections.
- Remove tank sections from the excavation.
- Transport tank sections to local scrap yard following NYSDEC inspection and approval.
- Inspect the excavation for indications of tank leakage.
- If impacted soils are encountered, excavate and stockpile impacted soils on a separate soil storage area that is lined with plastic sheeting and bermed to prohibit run-off.
- Excavation will be continued vertically and laterally until the impacted soils have been removed.
- After completion of the excavation, confirmatory samples will be collected from the sides and bottom of the excavation hole. The final number of samples will be determined in accordance with DER-10, and will be subject to concurrence in the field with NYSDEC. Confirmatory samples will be analyzed for volatile organic compounds (VOCs) by USEPA Method 8260B.
- Backfill the excavation with approved on-site fill.

3.3 Construction Certification Report

At the conclusion of the IRMs, a Construction Completion Report (CCR) will be prepared and submitted to NYSDEC. The CCR will be prepared in accordance with 6 NYCRR Part 375 and DER-10, and will provide a narrative description of the work performed (including modifications to the original work plan, if needed), and appending supporting documentation. The CCR will also have the necessary PE certification.

Figure 1

Site Location Map Showing Areas of Concern

CHLORINTED SOLVENT PLUME (AOC 2)

FLOOD PLAIN ELV. 229

39.49-2-1.311

OUTFALL D42

OUTFALL A43

COLLEGE CREEK OUTFALL

MW-45 AREA (AOC-1B)

PARCEL A

PARCEL B

39.41-1-2

39.41-1-3

39.49-2-1.1

GPR AREA 2

MW-62

MW-63

MW-61

MW-60

MW-59

MW-58

MW-57

MW-55

MW-54

MW-56

BUILDING 346

BUILDING 324

BUILDING 328

BUILDING 382

BUILDING 332

BUILDING 316

39.49-2-7

39.49-2-5

39.49-2-6

39.49-2-8

39.49-2-1.2

BUILDING 304

BUILDING 306

BUILDING 308

BUILDING 300

BUILDING 338

MW-36 AREA BORINGS (AOC-1A)

GPR AREA 8 (AOC-1C)

FORMER BUILDING LOCATIONS 312 & 314

PARCEL C

CHLORINATED SOLVENT PLUME SOURCE AREA (AOC 2)

39.49-2-1.311

LEGEND

- PROPERTY BOUNDARY
- BCP SITE BOUNDARY
- MANHOLE WITH DRAINAGE STUCTURE NUMBER
- CATCH BASIN WITH DRAINAGE STRUCTURE NUMBER
- LIFT STATION WITH DRAINAGE STRUCTURE NUMBER
- MANHOLE (S.N.)
- CATCH BASIN (C.B.)
- MONITORING WELL (SRI)
- TEMPORARY MONITORING WELL (TMW)
- RECOVERY WELL
- PIEZOMETER
- GEOPROBE BORING
- SURFACE SOIL SAMPLE LOCATION (SS)
- SOIL BORING LOCATION

AREA DEFINITIONS

- BUILDINGS/STRUCTURES
- FORMER BUILDINGS (PREVIOUSLY DEMOLISHED)
- "EVU" PARCEL
- "BPU" PARCEL
- OTHER PROPERTIES NO PART OF B
- REMEDIATION AREA
- FORMER UST/AST LOCATIONS

MW-63 MONITORING WELL (SRI INVESTIGATION 2013)

MAP REFERENCE:

1) "SURVEY OF LANDS, ALCO LOCOMOTIVE, INC., CITY OF SCHENECTADY, COUNTY OF SCHENECTADY", DATED MARCH 1970, AS PREPARED BY C.T. MALE ASSOCIATES.

2) "A SUBDIVISION OF A PORTION OF LANDS OF SCHENECTADY INDUSTRIAL CORPORATION", DATED JUNE 30, 1988, AS PREPARED BY THE ENVIRONMENTAL DESIGN PARTNERSHIP.

3) "SITE PLAN, PROPOSED C & D RECYCLING FACILITY, NOTT STREET INDUSTRIAL PARK", DATED FEBRUARY 1995, AS PREPARED BY INGALLS SMART ASSOCIATES.

SOURCE:

1) ABD ENGINEERS AND SURVEYORS FEBRUARY 1988, REVISED NOVEMBER 1988.

2) HISTORIC BUILDING (HB) LOCATIONS BASED ON A "FUEL OIL PIPING" PLAN. PREPARED FOR AMERICAN LOCOMOTIVE CO., REVISED AUGUST 22,1955.

Barton & Loguidice, D.P.C.

MAXON ALCO HOLDINGS, LLC
INTERIM REMEDIAL MEASURES WORK PLAN

SITE PLAN

CITY OF SCHENECTADY, NEW YORK

Figure 1
Project No. 1368.001.001
Date 1/9/2014

Appendix A

Health and Safety Plan

Former ALCO Site
Brownfield Cleanup Project

City of Schenectady
Schenectady County, New York

Health and Safety Plan (HASP)

New York State
Brownfield Cleanup Program
Site Nos. C447042, C447043, and C447044

December 2013

Barton & Loguidice

Former ALCO Site
Brownfield Cleanup Project

City of Schenectady

Health and Safety Plan
Site Nos. C447042, C447043, and C447044

December 2013

Prepared For:

Maxon ALCO Holdings, LLC
540 Broadway
Albany, New York 12207

Prepared By:

Barton & Loguidice, P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects
10 Airline Drive, Suite 200
Albany, New York 12205

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Section Page

Tables

Attachments

1.0 General Information

1.1 Introduction

This Health and Safety Plan (HASP) was prepared by Barton & Loguidice, Inc. (B&L) for future excavation work at the former ALCO site where the existing soils will be penetrated. The existing soils contain residual impacts from historic activities at the site. The impacts were characterized by the Remedial Investigation and Supplemental Remedial Investigation that were conducted at the site. A summary of the impacts is provided in this HASP

Please note that this site falls within the definition of a hazardous waste sites for the purposes of 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response*. Plan. This was prepared in accordance with 29 CFR 1910.120. This plan was prepared, and will be implemented, by a qualified person as defined under 29 CFR 1910.120; this is also in accordance with NYSDEC DER-10, *Technical Guidance for Site Investigation and Remediation.*

The purpose of this Health and Safety Plan for the Steel Treaters contaminant source removal IRM is to provide specific guidelines and establish procedures for the protection of personnel during the field investigation and site remediation activities. The Plan is based on the site information available at this time and anticipated conditions to be encountered during the different phases of work. This Plan is subject to modification as data are collected and evaluated.

All personnel conducting activities on-site must comply with all applicable Federal and State rules and regulations regarding safe work practices. Personnel conducting field activities must also be familiar with the procedures, requirements and provisions of this Plan. In the event of conflicting Plans and requirements, personnel must implement those safety practices that afford the highest level of protection.

This HASP is not intended to be used by any subcontractors, but it may be used as the basis for contractors to prepare their own plans. This HASP may not address the specific health and safety needs or requirements of subcontractors and should be viewed as the minimum requirement.

2.0 Project Information

2.1 Comprehensive Work Plan

This HASP is appended to the Site Remedial Work Plan (RWP) prepared by Barton & Loguidice, Inc., which describes the proposed remedial activities for the site.

2.2 Scope of Work

Remedial and/or development activities at the site may entail excavation into the existing in-place soils at the site.

2.3 Organization Structure

Barton & Loguidice, P.C.:
Program Manager – Scott Nostrand, P.E.

Site Manager – Andy Barber
Maxon ALCO Holdings, LLC (MAH):

Project Contact – Steve Luciano

The Site Manager is responsible for the day-to-day activities of the project and for coordinating between office and field personnel. The Site Manager will oversee the remedial activities. The Barton & Loguidice on-site field personnel will serve as the Site Safety and Health Coordinator (SSHC). The SSHC will establish operating standards and coordinate overall project safety and health activities for the site. The SSHC will review project plans and revisions to determine that safety and health procedures are maintained throughout the project. Specifically the responsibilities of the SSHC include:

a. Aiding the selection of protective clothing and equipment.

b. Periodically inspecting protective clothing and equipment.

c. Maintaining proper storage of protective clothing and equipment.

d. Monitoring the workers for signs of heat stress, cold stress, and fatigue.

e. Monitoring on-site hazards and conditions.

f. Conducting periodic surveillance to evaluate effectiveness of the Site-specific Health and Safety Plan.

g. Having knowledge of emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire department, and police department.

h. Providing handouts to all on-site personnel that contain directions to the hospital and the telephone numbers of the ambulance, local hospital, poison control center, fire department, and police department.

i. Notifying, when necessary, local public emergency officials.

j. Coordinating emergency medical care.

The Site Manager will be responsible for ensuring that the field personnel are familiar with the contents of this plan and the roles of the SSHC.

3.0 Health and Safety Risk Analysis

Table B-1 breaks down the hazard types that may be encountered for the site activities.

Table B-1
Site Investigation Activity Hazard Evaluation

Activity	Hazard Type					
	Mechanical	**Electrical**	**Chemical**	**Physical**	**Biological**	**Temperature**
Excavation of Impacted Soils	Accidental injury from excavation equipment. Accidental injury from contact with excavated materials.	Overhead power lines.	Accidental inhalation, ingestions, skin absorption or eye contact with contaminants. Inhalation of equipment exhaust gases.	Collapse of excavation structure. Puncture from buried objects/nails. Excessive noise. Fall hazards. Falling objects.	Rodents, Bees and wasps.	Heat stress and frost bite.

3.1 Chemical Hazards

Site soils have been impacted by historic industrial operations at the site. These impacts are largely related to the use of petroleum products and coal at the site. The contaminants that have been detected at the site are listed in Table B-2 and their properties are listed in Table B-3 (below).

Table B-2 – Contaminants Detected in Soil

Contaminants Detected in Surface Soils

	Part 375 Residential	Part 375 Restricted Residential	Part 375 Commercial	SS-A1	SS-A2	SS-A3	SS-A5	SS-A6	SS-A8	SS-A9
Parcel A										
2-Methylnaphthalene	*410*	*NS*	*NS*	57 J	**410 J**	130 J	**700 J**	3,500 U	**890 J**	**11,000 J**
Benzo(a)Anthracene	*1,000*	*1,000*	*5,600*	**1,300**	**6,000**	**5,500**	**4,500**	**1,800 J**	**24,000**	**160,000**
Benzo(a)Pyrene	*1,000*	*1,000*	*1,000*	**1,700**	**6,700**	**6,800**	**4,200**	**2,100 J**	**21,000**	**140,000**
Benzo(b)Fluoranthene	*1,000*	*1,000*	*5,600*	**3,100**	**12,000**	**14,000**	**6,700**	**4,400**	**25,000**	**170,000**
Benzo(G,H,I)Perylene	*100,000*	*100,000*	*500,000*	600 J	2,300	3,100	1,300	1,500 J	14,000	**98,000**
Benzo(k)Fluoranthene	*1,000*	*3,900*	*56,000*	**1,400**	**4,000**	**5,100**	**3,000**	**2,100 J**	**11,000**	**71,000**
Chrysene	*1,000*	*3,900*	*56,000*	**1,700**	**6,600**	**6,700**	**4,400**	**2,600 J**	**23,000**	**150,000**
Dibenzo(A,H)Anthracene	*330*	*330*	*560*	210 J	**820 J**	**880 J**	**370 J**	3,500 U	4,900 U	9,800 U
Dibenzofuran	*14,000*	*59,000*	*350,000*	31 J	710 J	260 J	1,100	3,500 U	2,300 J	**22,000**
Fluoranthene	*100,000*	*100,000*	*500,000*	1,800	11,000	8,700	9,900	2,700 J	44,000	**330,000**
Indeno(1,2,3-Cd)Pyrene	*500*	*500*	*5,600*	**570 J**	**2,200**	**2,800**	**1,200**	**1,400 J**	**11,000**	**84,000**
Phenanthrene	*100,000*	*100,000*	*500,000*	600 J	9,100	4,600	9,300	1,300 J	35,000	**290,000**
Pyrene	*100,000*	*100,000*	*500,000*	1,700	8,800	7,100	7,400	2,200 J	40,000	**310,000**

All units are in µg/Kg
Values shown in BOLD exceed the 6 NYCRR Part 375 Residential Soil Cleanup Objective
Values that are highlighted exceeds the 6 NYCRR Part 375 Commercial Soil Cleanup Objective
U = The compound was not detected at the indicated concentration.
J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL.

Table B-2 – Contaminants Detected in Soil – Continued

Contaminants Detected in Surface Soils

	Part 375 Residential	Part 375 Restricted Residential	Part 375 Commercial	SS-B3	SS-B4	SS-B5	SS-B6	SS-B8
Parcel B								
2-Methylnaphthalene	*410*	*NS*	*NS*	18,000 U	**620 J**	27 J	12 J	3,900 U
Benzo(a)Anthracene	*1,000*	*1,000*	*5,600*	**960 J**	**13,000**	850	**1,400**	**2,900 J**
Benzo(a)Pyrene	*1,000*	*1,000*	*1,000*	**1,000 J**	**15,000**	**1,100**	**1,500**	**4,100**
Benzo(b)Fluoranthene	*1,000*	*1,000*	*5,600*	18,000 U	**20,000**	**1,300**	**3,900**	**5,000**
Benzo(k)Fluoranthene	*1,000*	*1,000*	*56,000*	18,000 U	**6,800**	480	**1,500**	**2,800 J**
Chrysene	*1,000*	*1,000*	*56,000*	**1,000 J**	**13,000**	890	**2,100**	**3,300 J**
Indeno(1,2,3-Cd)Pyrene	*500*	*500*	*5,600*	18,000 U	**7,700**	**550**	**1,600**	**2,100 J**

All units are in µg/Kg
Values shown in BOLD exceed the 6 NYCRR Part 375 Residential Soil Cleanup Objective
Values that are highlighted exceeds the 6 NYCRR Part 375 Commercial Soil Cleanup Objective
U = The compound was not detected at the indicated concentration.
J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL.

Table B-2 – Contaminants Detected in Soil – Continued

Contaminants Detected in Surface Soils

	Part 375 Residential	Part 375 Restricted Residential	Part 375 Commercial	SS-C1	SS-C2	SS-C4	SS-C6	SS-C9
Parcel C								
2-Methylnaphthalene	*410*	*NS*	*NS*	6,900 U	7,000 U	**440 J**	65 J	2,000 U
Benzo(a)Anthracene	*1,000*	*1,000*	*5,600*	**1,500 J**	**4,600 J**	**49,000**	**3,900**	**1,500 J**
Benzo(a)Pyrene	*1,000*	*1,000*	*1,000*	**1,700 J**	**6,400 J**	**43,000**	**3,700**	**1,600 J**
Benzo(b)Fluoranthene	*1,000*	*1,000*	*5,600*	**2,000 J**	**9,600 J**	**50,000**	**4,500**	**2,000**
Benzo(k)Fluoranthene	*1,000*	*1,000*	*56,000*	**2,100 J**	**3,500 J**	**29,000**	**1,700 J**	**1,100 J**
Chrysene	*1,000*	*1,000*	*56,000*	**1,500 J**	**4,900 J**	**46,000**	**3,900**	**1,600 J**
Dibenzo(A,H)Anthracene	*330*	*330*	*560*	6,900 U	7,000 U	9,500 U	**680 J**	2,000 U
Indeno(1,2,3-Cd)Pyrene	*500*	*500*	*5,600*	**880 J**	**3,600 J**	**22,000**	**2,100**	**800 J**

All units are in μg/Kg
Values shown in BOLD exceed the 6 NYCRR Part 375 Residential Soil Cleanup Objective
Values that are highlighted exceeds the 6 NYCRR Part 375 Commercial Soil Cleanup Objective
U = The compound was not detected at the indicated concentration.
J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL.

Table B-2 – Contaminants Detected in Soil – Continued

Contaminants Detected in Surface Soils

	Arsenic	Copper	Lead
Part 375 Residential	*16*	*270*	*400*
Part 375 Restricted Residential	*16*	*270*	*400*
Part 375 Commercial	*16*	*270*	*1,000*
Sample Location			
SS-A2	**18.8**	**723 J**	**1530**
SS-A3 / DUP-03	**32.1 / 19.6 J**	92.3 J/ 317 J	**897** / 298
SS-A9	**15.6 J**	67.3	95
SS-B3	**79.7 J**	15.7	16.4
SS-C7	**24.5**	37.9	8.8

J = Indicates an estimated value detected below the reporting limit.
Values shown in BOLD exceed the 6 NYCRR Part 375 Residential Soil Cleanup Objective
Values that are highlighted exceeds the 6 NYCRR Part 375 Commercial Soil Cleanup Objective
All units are in mg/Kg

Table B-2 – Contaminants Detected in Soil – Continued

Contaminants Detected in Subsurface Soils

	Part 375 Residential	**Part 375 Restricted Residential**	**Part 375 Commercial**	SB-A1	SB-A2 / DUP-03	SB-A3
Parcel A						
2-Methylnaphthalene	*410*	*NS*	*NS*	**3,200 J**	48 J / 36 J	150 J
Benzo(a)Anthracene	*1,000*	*1,000*	*5,600*	**14,000**	**2,000 J / 1,300 J**	**1,800**
Benzo(a)Pyrene	*1,000*	*1,000*	*1,000*	**14,000**	**1,900 J / 1,300 J**	**1,600**
Benzo(b)Fluoranthene	*1,000*	*1,000*	*5,600*	**17,000**	**2,500 J / 1,400 J**	**1,800**
Chrysene	*1,000*	*1,000*	*56,000*	**15,000**	**2,000 J / 1,300 J**	**1,700**
Dibenzo(A,H)Anthracene	*330*	*330*	*560*	**2,800 J**	**370 J /** 220	280
Indeno(1,2,3-Cd)Pyrene	*500*	*500*	*5,600*	**8,400**	**1,100 J / 650 J**	**850**

All units are in µg/Kg .
Values shown in BOLD exceed the 6 NYCRR Part 375 Residential Soil Cleanup Objective
Values that are highlighted exceeds the 6 NYCRR Part 375 Commercial Soil Cleanup Objective
J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL.

Table B-2 – Contaminants Detected in Soil – Continued

Contaminants Detected in Subsurface Soils

	Part 375 Residential	Part 375 Restricted Residential	Part 375 Commercial	SB-B2 /	DUP-02-SB	SB-B3
Parcel B						
2-Methylnaphthalene	*410*	*NS*	*NS*	**860 J /**	**890 J**	55 J
Benzo(a)Anthracene	*1,000*	*1,000*	*5,600*	**13,000 /**	**13,000**	**3,800**
Benzo(a)Pyrene	*1,000*	*1,000*	*1,000*	**13,000 /**	**13,000**	**3,900**
Benzo(b)Fluoranthene	*1,000*	*1,000*	*5,600*	**14,000 /**	**15,000**	**5,600**
Chrysene	*1,000*	*1,000*	*56,000*	**12,000 /**	**13,000**	**5,000**
Dibenzo(A,H)Anthracene	*330*	*330*	*560*	**2,400 /**	**2,200**	400 U
Indeno(1,2,3-Cd)Pyrene	*500*	*500*	*5,600*	**7,000 /**	**6,400**	**2,700**

All units are in μg/Kg .
Values shown in BOLD exceed the 6 NYCRR Part 375 Residential Soil Cleanup Objective
Values that are highlighted exceeds the 6 NYCRR Part 375 Commercial Soil Cleanup Objective
U = The compound was not detected at the indicated concentration.
J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL.

Table B-2 – Contaminants Detected in Soil – Continued

Contaminants Detected in Subsurface Soils

	Part 375 Residential	Part 375 Restricted Residential	Part 375 Commercial	SB-C3
Parcel C				
Benzo(a)Anthracene	*1,000*	*1,000*	*5,600*	**1,200 J**
Benzo(a)Pyrene	*1,000*	*1,000*	*1,000*	**1,200 J**
Benzo(b)Fluoranthene	*1,000*	*1,000*	*5,600*	**1,300 J**
Chrysene	*1,000*	*1,000*	*56,000*	**1,200 J**
Indeno(1,2,3-Cd)Pyrene	*500*	*500*	*5,600*	**700 J**

All units are in μg/Kg .
Values shown in BOLD exceed the 6 NYCRR Part 375 Residential Soil Cleanup Objective
Values that are highlighted exceeds the 6 NYCRR Part 375 Commercial Soil Cleanup Objective
J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL.

Table B-3 - Assessment of Detected Chemicals

Chemical Name (or class)	REL/PEL/TLV	Other Pertinent Limits (Specify)	Warning Properties – Odor Threshold	Potential Exposure Pathways	Acute Health Effects	Chronic Health Effects
#1 Fuel Oil (Kerosene)	100 mg/m3 (NIOSH)		Colorless to yellowish oily liquid with a strong characteristic odor	Inhalation, Ingestion, Contact	Eye, skin & respiratory irritation; dizziness, drowsiness, nausea, vomit, headache, abdominal pain	Eyes; skin; respiratory system; CNS
#2 Fuel Oil	5 mg/m3 (OSHA)		Colorless to yellowish oily liquid with a strong characteristic odor	Inhalation, Ingestion, Contact	Eye, skin & respiratory irritation; dizziness, drowsiness, nausea, vomit, headache, abdominal pain	Eyes; skin; respiratory system; CNS
#4 Fuel Oil	5 mg/m3 (OSHA)		Colorless to yellowish oily liquid with a strong characteristic odor	Inhalation, Ingestion, Contact	Eye, skin & respiratory irritation; dizziness, drowsiness, nausea, vomit, headache, abdominal pain	Eyes; skin; respiratory system; CNS
Polynuclear Aromatic Hydrocarbons (Coal components)	0.1 mg/m3 (NIOSH) 0.2 mg/m3 (OSHA)		Black, dark brown residue	Inhalation, Ingestion, Contact	Skin irritation	Respiratory system; skin, bladder; kidneys
Arsenic				Inhalation, Ingestion, Contact	Skin irritation	Eyes; skin; respiratory system; CNS; kidneys; GI tract; repro system
Copper	1 mg/m3 (OSHA, NIOSH)		Reddish metal	Inhalation, Ingestion, Contact	Eye irritation	Eyes; skin; respiratory system; liver; kidneys;
Lead	0.050 mg/m3 (OSHA, NIOSH)		Gray metal	Inhalation, Ingestion, Contact		Eyes; CNS; kidneys; GI tract; blood

PEL = OSHA Permissible Exposure Limit; represents the maximum allowable 8-hr. time weighted average (TWA) airborne exposure concentration.
TLV = ACGIH Threshold Limit Value; represents the maximum recommended 8-hr. TWA exposure concentration.
STEL = OSHA Short-term Exposure Limit; represents the maximum allowable 15 minute TWA exposure concentration.
TLV-STEL = ACGIH Short-term Exposure Limit; represents the maximum recommended 15 minute TWA exposure concentration.

3.2 Physical Hazards

Physical hazards associated with the site are:

1. *Slip, Trip, and Fall During All Activities (Uneven Terrain):* The site contains numerous potential safety hazards such as pits, broken glass, slippery surfaces and fire debris. The work itself may be a potential safety hazard. Site personnel should constantly look out for potential safety hazards and should immediately inform the SSHC of any new hazards.
2. *Excavation Debris:* Excavation projects pose potential safety hazards from materials falling from the excavator as they are removed from the working excavation. The excavation work is a potential safety hazard and the SSHC will provide oversight during demolition activities.
3. *Moving Parts of Heavy Equipment:* Heavy equipment poses dangers though moving parts. Where feasible, access to moving parts will be guarded and equipment will be equipped with backup alarms.
4. *Noise from Heavy Equipment:* Work around large equipment often creates excess noise. Engineering controls and personal protective equipment will be used to protect employees' hearing.
5. *Electrical Hazards:* As in all site work, overhead power lines, buried power lines, electrical wires and cables, site electrical equipment, and lightning also pose a potential hazard to site workers. Site personnel should constantly look out for potential safety hazards and should immediately inform the SSHC of any new hazards.
6. *Biological Hazards (Insects, Poison Ivy, etc.):* Other biological hazards that may be present at the site include rodents and insects. PPE can reduce the potential for exposure. The SSHC can assist in determining the correct PPE for the hazard present.

3.3 Heat and Cold Stress

Workers will be routinely observed by the SSHC for symptoms of heat stress or cold exposure, as dictated by the weather conditions and work being conducted. Heat stress and cold exposure can be avoided by periodic, regular rest breaks.

Heat stress may be a potential hazard for personnel wearing PPE, particularly working in hot and humid conditions. Workers should take regular rest breaks within a shaded area, removing their PPE, and drink electrolyte replacing liquids and/or water. The SSHC is responsible for scheduling the amount of time each individual can work under the existing site conditions, and how often and how long they will break. Workers will be required to take their breaks in the clean zone after going through the decontamination area , or they may undergo partial decontamination and rest in a clean area within the decontamination area. Please refer to Section 7.2 (Site Control) of this HASP for a detailed description of the above referenced clean zone and decontamination area.

3.4 Confined Space Entry

Excavations do pose a potential confined space entry area. When an excavation becomes a confined space entry area (greater than 4 feet deep), then permit-required confined space entry procedures will be followed should the excavation need to be entered. In addition, air monitoring for oxygen deficiency, LEL, and organic vapors will be performed should the excavation be greater than 4 feet deep. Attempts will be made to collect samples from the excavation without entering the excavation (i.e., from excavator bucket, sampling rods, etc.).

4.0 Medical Surveillance Program

4.1 General

OSHA in 29 CFR 1910.120, the Hazardous Waste Operations regulations and in 1910.134, the Respiratory Protection regulations, requires medical examinations. The examination may include the OSHA required Medical Questionnaire, Respirator Suitability Form, a Medical Examination, Audiology Test, Pulmonary Function Test, and testing for complete blood count and chemistry profile.

These medical examinations and procedures are performed by or under the supervision of a licensed physician. The medical monitoring is provided to workers free of cost, without loss of pay and at a reasonable time and place. In addition, the need to implement a more comprehensive medical surveillance program will be re-evaluated after an apparent over-exposure incident.

Employees who wear, or may wear, respiratory protection will be provided respirators as regulated by 29 CFR 1910.134 before performing designated duties. Prior to issuance of a respirator, a medical professional must have medically certified the individual's ability to wear respiratory protection. Where the medical requirements of 29 CFR 1910.120 overlap those of 29 CFR 1910.134, the more stringent of the two will be enforced. It is not anticipated the respirator use will be required at the site.

4.2 Frequency

1. *Baseline Examinations:* Individuals who are assigned temporarily or permanently to fieldwork at hazardous waste sites or the use of a respirator will receive a baseline examination prior to job assignment.

2. *Periodic Examinations:* Individuals who are assigned temporarily or permanently to fieldwork at hazardous waste sites or the use of a respirator will receive periodic examinations as required.

3. *Termination Examinations:* Field employees permanently leaving the company who were in the medical surveillance program will receive an exit examination.

4. *Possible Exposure Examinations:* As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that an employee has been injured or exposed above the permissible exposure limits in an emergency situation, that employee will be required to receive medical attention.

4.3 Examination Results

A letter must be received from the attending physician stating the parameters of the examination and whether or not the individual is able to work with or without restriction. This letter will be filed in the employee's file and a copy distributed to the employee. The examining physician makes a report to B&L of any medical condition that would place B&L employees at increased risk when wearing a respirator of other personal protective equipment. B&L maintains the medical records of personnel, as regulated by 29 CFR 1910.120 and 29 CFR 1910.1020, where applicable.

5.0 Training Program

5.1 Hazardous Waste Operations Health and Safety Training

Employees who are assigned to perform duties on hazardous waste sites will receive the OSHA initial 40-hour health and safety training prior to on-site activities, in accordance with 29 CFR 1910.120 (e). In addition, such personnel provide documentation of having received three (3) days of supervised field experience applicable to this site, or receive three (3) days of supervised field experience at this site. Applicable employees will receive yearly 8-hour refresher courses. On-site managers and supervisors who are directly responsible for or who supervise workers engaged in hazardous waste operations receive, in addition to the appropriate level of worker HAZWOPER training described above, 8 (eight) additional hours of specialized supervisory training, in compliance with 29 CFR 1910.120(e)(4).

Because this site is meets the definition of a hazardous waste site, employees who work during field activities are required to have completed HAZWOPER initial and refresher training.

5.2 Additional Training

As site activities change, supplemental training will be provided to employees to address changes in identified hazards, risks, operations procedures, emergency response, site control, and personal protective equipment. Specialty training will be provided as determined by task and responsibility.

Site-specific training will be provided to each employee and will be reviewed at safety briefings. Specialized training will be provided as dictated by the nature of site activities. Specialized training will be provided for activities such as the handling of unidentified substances. Employees involved in these types of activities will be given off-site instruction regarding the potential hazards involved with such activities and the appropriate health and safety procedures to be followed. Off-site instruction is meant to include any areas where employees will not be exposed to site hazards.

5.3 Other Required Training

Other training that may be required by workers that is in addition to required training described above is detailed below:

- Hazard communication, in accordance with 29 CFR 1910.1200
- Respirator use, in accordance with 29 CFR 1910.134
- Hearing conservation, in accordance with 29 CFR 1910.95
- Working safely around heavy equipment
- Heat and cold stress prevention
- Confined space entry, in accordance with 289 CFR 1910.146

5.4 Pre-Entry Briefing

A site-specific briefing will be provided to all individuals, including site visitors, who enter this site beyond the site entry point. For visitors, the site-specific briefing provides information about site hazards, the site lay-out including work zones and places of refuge, the emergency alarm system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

The SSHC will brief personnel as to the potential hazards likely to be encountered. Topics will include:

- Availability of this HASP.
- General site hazards and specific hazards in the work areas, including those attributable to the chemicals present.
- Selection, use, testing and care of the body, eye, hand and foot protection being worn, with the limitations of each.
- Decontamination procedures for personnel, their personal protective equipment, and other equipment used on the site.
- Emergency response procedures and requirements.
- Emergency alarm systems and other forms of notification, and evacuation routes to be followed.
- Methods to obtain emergency assistance and medical attention.

5.5 Training Records

Written certification of the successful completion of applicable training requirements for each worker will be maintained on-site during the course of the investigation. Written certificates have been given to each person so certified. Additionally, an employee sign off sheet indicating that each worker has reviewed a copy of this HASP and understands its contents is stored at the same location.

6.0 Health and Safety Field Implementation

6.1 Personal Protective Equipment Requirements

The requirements for personal protective equipment (PPE) are outlined in Table B-4. Level D protection will initially be worn for excavation activities. Level C protection may be used, based upon a sustained (five (5) minutes or more) readings above five (5) parts per million (ppm) measured with the photoionization detector (PID). The emissions from gasoline or diesel-powered excavation equipment may affect PID readings. At the start of work (excavation equipment in operation, but prior to exposing contaminated soils), an ambient PID reading will be established. This ambient PID reading will be subtracted from subsequent readings to evaluate PPE usage.

Table B-4
Personal Protective Equipment (PPE) Requirements

Job Tasks	Level of Protection	PPE						
		Suit	Gloves	Feet	Head	Eye	Ear	Respirator
Down-grade	Modified D	Std.	Neoprene or Nitrile	Steel + Booties	HH	Glasses/ Goggles	Plugs/ Muffs	N/A
All on-site	C	PE Tyvek	Neoprene or Nitrile	Steel + Booties	HH	N/A	Plugs/ Muffs	Full APR w/OV& N100

Personal Protective Equipment

SUIT:
Std = Standard Work Clothes
PE Tyvek = Polyethylene-coated Tyvek

FEET:
Steel = Steel-toe Boots
Booties = PVC or Latex Booties

HEAD:
HH = Hard Hat

EYE:
Glasses = Safety Glasses w/side shields
Goggles = Safety Goggles

Personal Protective Equipment

EAR:
Plugs = Ear Plugs
Muffs = Ear Muffs

RESPIRATOR:
APR = Air-purifying respirator
Full APR = Full-face APR
OV = Organic vapor cartridge
N100 = N100 particulate filters

6.2 Community Air Monitoring Plan

The Site Manager or designee will conduct air monitoring in accordance with the New York State Department of Health (NYSDOH) Community Air Monitoring Plan. Direct reading instruments will be calibrated in accordance with manufacturer's requirements and the results of the calibration will be documented.

This Community Air Monitoring Plan (CAMP) sets forth the procedures for performing real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area with respect to specific subsurface intrusive activities to be completed as part of the IRM. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses, and on-site or nearby workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

Continuous monitoring will be required for all subsurface intrusive excavation activities**.** The various field instruments that will be used by on-site personnel to perform the continuous air monitoring are listed in Table B-5 below. Subsurface intrusive activities include, but are not limited to, soil excavation and handling.

VOCs will be monitored at the downwind perimeter of the site, outside the existing building on a continuous basis with the use of a Photoionization detector (PID). Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the site exceeds five (5) parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below five (5) ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the site persist at levels in excess of five (5) ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below five (5) ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the site, activities must be shutdown.

All 15-minute readings will be recorded and made available for NYSDEC and NYSDOH personnel to review. Instantaneous readings, if any, used for decision making purposes will also be recorded.

Particulate concentrations will also be monitored continuously at the upwind and downwind perimeters of the exclusion zone or work area during the performance of the IRM. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques if downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and if no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume if dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings will be recorded and made available for NYSDEC and NYSDOH personnel to review.

Table B-5
Monitoring Protocols and Contaminant Action Levels

Contaminant/ Atmospheric Condition	Monitoring Equipment	Monitoring Protocol	Breathing Zone* Action Level Concentrations	
			Monitored Level For Mandatory Respirator Use**	Monitored Level For Mandatory Work Stoppages***
VOCs	Photoionization detector (PID) with an 10.6 eV lamp	Initially readings will be recorded every 15 minutes. If no sustained readings are obtained in the breathing zone, readings will be recorded every 30 minutes.	5 ppm above background	25 ppm above background

Table B-5
Monitoring Protocols and Contaminant Action Levels

Contaminant/ Atmospheric Condition	Monitoring Equipment	Monitoring Protocol	Breathing Zone* Action Level Concentrations	
			Monitored Level For Mandatory Respirator Use**	Monitored Level For Mandatory Work Stoppages***
Particulates	MiniRam or Dusttrak or Equivalent	Continuously during intrusive activities that can generate dust, e.g. monitoring well installation, test pits		150 ug/m3 at fence line (institute engineering controls to control dust) per NYSDEC TAGM 4031

* Monitoring performed in the breathing zone for sustained readings of 5 minutes or more. Monitor source first; if the source is near or above the action level concentration, monitor in the breathing zone.
** Monitored levels will require the use of approved respiratory protection specified in Table B-3.
*** Consult the Site manager.

6.3 Decontamination Procedures

Depending on the specific job task, decontamination may include personnel themselves, tools, and/or heavy equipment. The specified level of protection for a task (A, B, C, or D) does not itself define the extent of personal protection or equipment decontamination. For instance, Level C without dermal hazards will require less decontamination than Level C with dermal hazards. Heavy equipment will always require decontamination to prevent cross-contamination. The following sections summarize general decontamination protocols.

6.3.1 Heavy Equipment

Heavy equipment will be decontaminated prior to personnel decontamination. Heavy equipment, drilling rods, augers and/or buckets will be steam cleaned after use at the designated decontamination area. In addition, containment systems will be set-up at the designated decontamination area for collection of decon fluids and materials.

6.3.2 Personnel

In general, decontamination involves scrubbing with a non-phosphate soap/water solution followed by clean water rinses. Disposable items will be disposed of in a dry container.

Reusable protection will be washed with soap and clean potable water and air-dried prior to storage. Dirt, oil, grease or other foreign materials that are visible will be removed from surfaces. Scrubbing with a brush may be required to remove materials that adhere to the surfaces. Certain parts of contaminated respirators, such as harness assemblies and leather or cloth components, are difficult to decontaminate. If grossly contaminated, they may be discarded in a designated container. Rubber components can be soaked in soap and water and scrubbed with a brush.

The following decontamination protocol will be used, as appropriate to the level of PPE being used:

- Drop hand tools and equipment in the designated decontamination area.
- Either wash outer rubber boots or dispose of booties.
- Rinse outer boots.
- Wash and rinse outer gloves.
- Remove outer boots and gloves, dispose gloves if necessary in the container designated for PPE waste.
- Replace cartridges if required.
- Remove and dispose Tyvek coverall in the designated PPE waste container.
- Remove respirator, dispose cartridges as required in the container designated for PPE waste.
- Personnel should wash their respirator at the end of each workday.

6.3.3 Decontamination Wastes and Investigation Derived Wastes

Decontamination wash and rinse waters and investigation derived wastes (IDW) will be managed according to applicable regulatory guidelines.

- Spent decon solutions may be required to be drummed and disposed of as hazardous waste and/or solvent solutions may be required to be segregated from water rinses.
- Decontamination shall be performed in a manner that minimizes the amount of waste generated.
- IDW may be required to be drummed and disposed of as hazardous waste.

7.0 Site Operating Procedures

These following guidelines comply with the established guidelines of the Barton & Loguidice, P.C., Corporate Health and Safety Program:

All field investigation activities must be coordinated through the Site Manager.

During any activity conducted on-site in which a potential exists for exposure to hazardous materials, accident or injury, at least two (2) persons must be present who are in constant communication with each other. At least two (2) persons must also be present during all demolition or excavation activities.

Samples obtained from areas known or suspected to contain contaminated substances or materials must be handled with appropriate personal protection equipment.

All equipment used to conduct the Site Investigation must be properly decontaminated and maintained in good working order. Equipment must be inspected for signs of defects and/or contamination before and after each use.

The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated will result in the evacuation of the activity zone until a complete evaluation of the hazard can be performed.

7.1 Daily Operating Procedures

The following are the daily operating procedures that are to be followed by on-site personnel:

- Hold Tailgate Safety Meetings prior to work start and as needed thereafter (suggest daily; however, minimum of weekly).
- Use monitoring instruments and follow designated protocol and contaminant action levels.
- Use PPE as specified.
- Use hearing protection around heavy equipment.
- Remain upwind of operations and airborne contaminants, if possible.
- Establish a work/rest regimen when ambient temperatures and protective clothing create potential thermal hazards.
- Eating, drinking, applying cosmetics and smoking are prohibited in work areas.
- Refer to the SSHC for specific safety concerns for each individual site task.
- On-site personnel are encouraged to be alert to their own physical condition, as well as their co-workers.
- **All accidents, no matter how minor,** must be immediately reported to the SSHC.

7.2 Site Control

The purpose of site control is to minimize the exposure of site workers to potential contamination, protect the public from the site's hazards, and prevent vandalism. The degree of site control necessary depends on site characteristics and the surrounding community. At this time, there are no access restrictions to the site. During the field activities, Barton & Loguidice, P.C. (B&L), and Steel Treaters are requesting that personnel, subcontractors and visitors report to the on-site B&L supervisor prior to entering the work area.

Since there are no access restrictions to the Site, particular attention will be placed on the condition of the site regarding three (3) main work zone areas:

Activity Zone

This zone applies to the immediate work area and includes all materials, equipment, vehicles and personnel involved in the site activity. For example, during the installation of a monitoring well, the activity zone will encompass the borehole, drilling rig, monitoring well construction materials and equipment, sampling equipment, decontamination supplies, and drilling/well inspection personnel. Site control measures will include flagging the perimeter of the activity zone to clearly mark the limits of work and to warn passers-by and visitors of the site activity. In addition, the site supervisor will maintain communication with City personnel as the location of this zone (and the type of work being performed) changes throughout the project.

The required level of PPE in the activity zone can vary according to job assignment. This will allow a flexible, effective, and less costly operation, while still maintaining a high degree of safety.

This area will be limited to authorized personnel from B&L, regulatory agencies, and contractors/subcontractors to the B&L and/or Steel Treaters. Personnel entering this area will be required to comply with their own HASP that is at least as stringent as this HASP.

Decontamination Zone

In order to prevent incidental contact with contaminants on investigation equipment or in the wash water, activities within the decontamination area will be completed before subsequent site work or other activity begins. This includes:

- Complete removal of contaminants on all equipment used during the preceding phase of the investigation;
- Placement of the waste wash water and sediment in sealed drums;
- Storage of the drums in a secure and out-of-the-way place for future disposal;
- Proper labeling of drum contents;
- Cleanup (if necessary) of area outside of decontamination area; and

Support Zone

The support zone is the location of the administrative and other support functions needed to keep the operations in the activity and decontamination zone running smoothly. Any function that need not or cannot be performed in a hazardous atmosphere is performed here. Personnel may wear normal work clothes within this zone. Any potentially contaminated clothing, equipment and samples must remain in the decontamination zone until decontaminated. All emergency telephone numbers, change for the telephone (if necessary), evacuation route maps, and vehicle keys should be kept in the support zone.

The SSHC will establish a decontamination system and decontamination procedures appropriate to the site and the work that will prevent potentially hazardous materials from leaving the site. All personnel exiting the activity zone will be decontaminated prior to entering the support zone. The decontamination procedures will be reviewed at each daily safety briefing.

Personal hygiene facilities meeting at least the minimum requirements of 29 CFR Part 1910.120 will be provided nearby.

Upon completion of the day's activities, heavy machinery and equipment will be stored securely within the site, or at a location selected by the SSHC.

7.3 Buddy System

Most activities in a contaminated or otherwise hazardous area should be conducted with a partner who is able to:

- Provide his or her partner with assistance.
- Observe his or her partner for signs of chemical or heat exposure.
- Periodically check the integrity of his or her partner's protective clothing.
- Notify the SSHC if emergency help is needed.

7.4 Engineering Controls

Engineering controls and work practices are primarily for limiting exposure through application of engineered barriers. They will be applied to this project when and where they are practicable. The following engineering controls may be applied on this project: water spray, covering of materials, site preparation to facilitate operations and remove obvious physical hazards, and warning alarms/devices.

8.0 Emergency Response Procedures

8.1 Pre-Emergency Planning

Planning for emergencies is a crucial part of emergency response. The SSHC is responsible for training all employees in potential site hazards and the emergency response procedures.

8.2 Personnel Roles

The SSHC is responsible for responding to, or coordinating the response of, off-site personnel to emergencies. In the event of an emergency, the SSHC will direct all notification, response and follow-up actions. Contacts with outside response personnel (hospital, fire department, etc.) will be done at the direction of the SSHC.

Prior to the start of work on the site, the SSHC will:

1. Notify emergency contacts, and/or health care facilities of the potentially hazardous activities and potential wastes that may develop as a result of the activities performed on-site;
2. Confirm that the following safety equipment is available: eyewash and safety shower station, first aid supplies, air horn, and fire extinguishers;
3. Have a working knowledge of the safety equipment available; and
4. Confirm directions to the hospital are prominently posted with the emergency telephone numbers.

Employees who will respond to emergencies involving hazardous materials will be trained in how to respond to such emergencies.

The SSHC will check daily to see that the following safety equipment is available at the site: eyewash station, first aid supplies, and fire extinguisher.

The SSHC will be responsible for directing notification, response and follow-up actions and for contacting outside response personnel (ambulance, fire department or others) prior to and during an emergency. Upon notification of an exposure incident, the SSHC will call the Hospital and fire and police emergency response personnel for recommended medical diagnosis, treatment, if necessary, and transportation to the hospital.

The SSHC must conduct an investigation of the incident as soon as possible. The SSHC will determine whether and at what levels exposure actually occurred, the cause of such exposure, and the means to prevent similar incidents from occurring. The resulting report must be accurate, objective, complete and signed and dated.

8.3 Safe Distances and Places of Refuge

In case of an emergency, a designated off-site area will serve as the immediate place of refuge. Personnel in the exclusion zone should evacuate through the decontamination zone to the refuge location, both for their own personal safety and to prevent hampering response/rescue efforts. Following an evacuation, the SSHC will account for on-site personnel. If evacuation from the work site is necessary, the project vehicles will be used to transport on-site personnel to a place of refuge.

8.4 Emergency Communications

There will be a cellular telephone located in either the Site Manager's and/or SSHC's vehicle for emergency use. Emergency telephone numbers are listed in Attachment 7 of this HASP. There will be air horns, walkie-talkies, and/or other audible emergency signals located within the exclusion zone and decontamination area to signal others of an emergency. The SSHC should brief all personnel regarding audible emergency signals to be used during the site activities prior to starting the work. Site personnel will use the following hand signals to inform others of emergencies:

- Hand gripping throat - out of air, cannot breathe.
- Grip partner's wrist or both hands around waist - leave area immediately.
- Hands on top of head - need assistance.
- Thumbs up - everything's OK, or I understand.
- Thumbs down – No.

8.5 Emergency Procedures

The nature of work at a contaminated or potentially contaminated work site makes emergencies a continual possibility. Although emergencies are unlikely and occur infrequently, a contingency plan is required to assure timely and appropriate response actions. The contingency plan is reviewed at tailgate safety meetings.

8.5.1 Incident Procedures

If an emergency incident occurs, the following actions will be taken:

1. Size-up the situation based upon available information.
2. Notify the SSHC.
3. Only respond to an emergency if personnel are sufficiently trained and properly equipped.
4. As appropriate, evacuate site personnel and notify emergency response agencies, e.g., police, fire, etc.

5. As necessary, request assistance from outside sources and/or allocate personnel and equipment resources for the response.
6. Consult the posted emergency telephone list and contact key project personnel.
7. Prepare an incident report.

All site personnel should be aware of the location of fire fighting equipment. Personnel shall only extinguish minor fires. Large fires will require contacting the local fire department and allowing them to handle the fire. The local fire department will be contacted prior to initiating site activities to inform them of the potential hazardous materials that could be encountered in an emergency.

8.5.2 Medical Emergencies

In the event of an accident or injury, workers will immediately implement emergency decontamination and isolation measures to assist those who have been injured or exposed and to protect others from the hazards. Upon notification of an exposure incident, the SSHC will contact the emergency response personnel who can provide medical diagnosis and treatment. If necessary, immediate medical care will be provided by trained personnel competent in first aid procedures. Trained personnel competent in such matters will only provide other on-site medical and/or first aid response to an injury or illness.

If an individual is transported to a hospital or doctor, a copy of this HASP will accompany the individual.

The SSHC will be notified when an accident or incident occurs and will respond according to the seriousness of the incident. The SSHC will investigate facility/site conditions to determine whether and at what levels exposure actually occurred, the cause of such exposure and the means to be taken to prevent the incident from recurring.

The SSHC and the exposed individual will complete an exposure-incident investigation. The SSHC will prepare a signed and dated report documenting the investigation. The SSHC and the exposed individual will also complete an exposure-incident reporting form. The form will be filed with the employee's medical and safety records to serve as documentation of the incident and the actions taken.

Emergency first aid may include taking care of minor scrapes to performing CPR. All site personnel should be familiar with the location of the site first aid kits. The site safety officer should be trained in first aid and CPR. Contacting hospital and/or emergency agencies shall be made on a case by case basis depending on the severity of the injury. If an off-site emergency agency is contacted, all the details relating to the injury should be relayed to that agency. All site injuries should be documented. The following actions should be taken if someone requires first aid:

1. Survey the scene to determine if it is safe to reach the injured person.

2. Ask the injured person what happened. If the person is unconscious, look for signs as to what may have occurred.
3. See if there are others injured.
4. Reassure the victim. Contact others for help; tell them to call the appropriate emergency agency.
5. If it is safe to move the victim, return them back to the field office.

Only trained personnel should perform CPR or rescue breathing on an unconscious victim.

Personnel who experience heat stress or frost bite should be attended to in the following manner:

Heat Stress - Symptoms include cool, pale and moist skin, heavy sweating, headache, and nausea. This person should be removed from the hot environment immediately, and allowed to lie on their back. Apply cold packs or make sure they are in an air-conditioned room. Give them plenty of water and/or electrolyte-replacing fluids. Should a victim experience heat stroke (high body temperature, red skin) the body must be cooled down quickly and receive medical attention immediately. Persons experiencing heat stress or heat stroke should be attended to until the situation has been remedied.

Frostbite - Symptoms include slightly flushed skin that becomes white, pain at extremities in early stages. Get a victim experiencing frostbite to a warm area and put the frostbitten parts in warm (100-105º F) water. Loosely bandage injured parts after soaking.

Hypothermia - Under conditions of cold temperatures and high winds, there is the potential for workers experiencing hypothermia. Signs of hypothermia include: shivering, dizziness, numbness, confusion, or drowsiness. Warm up this person's body with dry clothes and a blanket, if available. Call the appropriate emergency agency or take this person to the hospital.

8.6 Emergency Routes

Should an emergency signal be sounded, on-site personnel should immediately stop what they are doing, and return to the decontamination area. Personnel in the decontamination area and the support zone should evaluate the emergency and contact the appropriate off site emergency personnel. Once on site personnel return to the decontamination area, there will be someone there to direct them as to what to do. It is imperative that the SSHC or designated alternate account for all site personnel. The SSHC should direct all personnel to the nearest safe refuge.

The hospital route is included as an attachment.

If the emergency event threatens the surrounding community, it is important that the local police and fire departments be contacted immediately regarding the potential danger.

8.7 Spill Control

A major spill is not anticipated at the site. Should a spill of any type occur, the employee should report it immediately to the SSHC, who will make arrangements for the proper cleanup of the spill. These arrangements will include diking and ditching, as necessary, as well as the use of absorbents such as vermiculite or Speedi Dry. The emergency response personnel will be contacted immediately by SSHC in the event that on-site materials can not immediately contain the spill.

8.8 Personal Protective and Emergency Equipment

There will be suitable equipment on site for small emergency events such as additional PPE, fire extinguishers and first aid kits. In the event of a major emergency event, off-site personnel will be contacted immediately.

8.9 Decontamination Procedures

The extent of emergency decontamination depends on the severity of the injury or illness and the nature of the contamination. Minimum decontamination will consist of detergent washing, rinsing, and removal of contaminated outer clothing and equipment. If time does not permit the completion of all of these actions, it is acceptable to remove the contaminated clothing without washing it. If the situation is such that the contaminated clothing cannot be removed, the person should be given required first aid treatment, and then wrapped in plastic or a blanket prior to transport to medical care. If heat stress is a factor in the victim's illness/injury, the outer protective garment will be removed immediately.

8.10 Evacuation Routes

Unless otherwise directed, evacuation will be made through the decon area to the designated refuge location for a head count.

8.11 Response Critique

Should an incident on-site occur, the SSHC will analyze the response efforts in order to continually improve on-site conditions and procedures. The SSHC must complete follow-up activities before on-site work is resumed following an emergency. Used emergency equipment must be recharged, refilled or replaced. Government agencies must be notified as required in their regulations.

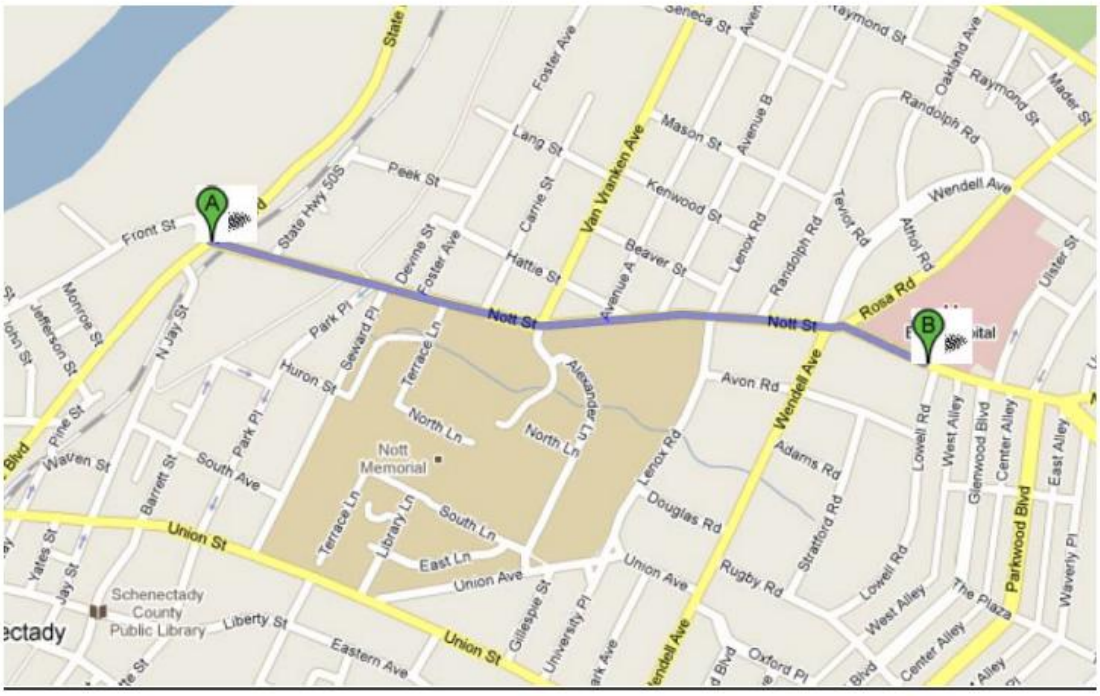
Attachment 1

Driving directions to Ellis Hospital
1.0 mi – about **2 mins**

A 301 Nott St
Schenectady, NY 12305

1. Head **east** on **Nott St** toward **Erie Blvd/Maxon Rd** 1.0 mi
Destination will be on the left

B Ellis Hospital
1101 Nott St
Schenectady, NY



(This should be posted at a conspicuous location at the site.)

Attachment 2

Emergency Contacts
(To Be Posted)

Contact	Person or Agency	Phone Number
Maxon-ALCO Holdings LLC	Steve Luciano	(518) 356-4445
NYSDEC Region 4 Project Manager	John Strang	(518) 357-2390
Law Enforcement	(C) Schenectady PD	911
Fire Department	(C) Schenectady FD	911
Confined Space Rescue (Fire Department)	(C) Schenectady FD	911
Ambulance		911
Hospital - Emergency	Ellis Hospital	(518) 243-4000
B&L Site Manager/Site Safety Officer	Andrew J Barber	(518) 218-1801
B&L Officer-in-Charge	Scott D. Nostrand, P.E.	(315) 457-5200