Pilot Study Work Plan

Southside Plaza Site BCP Site No. C907043

704-744 Foote Avenue
Jamestown, New York, 14701

EBI Project No. 1221000044

Dated: May 27, 2022

Prepared for:

Southside Station LLC
31 Sylvan Road
Rochester, New York, 14618

Prepared by:

EBI Engineering & Architecture

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May 27, 2022

Mr. Joshua M. Vaccaro
Division of Environmental Remediation
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203

Subject: **Pilot Study Work Plan**
Southside Plaza Site BCP Site No. C907043
704-744 Foote Avenue
Jamestown, New York, 14701
EBI Project No. 1221000044

Dear Mr. Vaccaro:

EBI Engineering PC (dba: EBI Engineering & Architecture, hereinafter "EBI"), on behalf of Southside Station LLC, is providing this *Pilot Study Work Plan (PSWP)* for the above referenced site (herein identified as the Subject Property). Previous site investigation work by EBI and others identified the presence of tetrachloroethylene (PCE), a chlorinated volatile organic compound (CVOC) that is commonly used to dry clean clothes, in on-site groundwater and soil vapor from a former dry-cleaning tenant space. This document presents the scope and details of the pilot study of E-Redox®-In Reduction to evaluate the remedial technology at the Subject Property for the appropriate remedial alternative selection. The soil vapor impacts are currently being mitigated by a sub-slab depressurization system (SSDS) in the tenant space that has reportedly been operating successfully since February 2013. This report has been completed in accordance with New York State Department of Environmental Conservation (NYSDEC) DER-10, issued May 3, 2010 and the NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6, dated December 14, 2006. If you have any questions or comments, please contact Mr. Brian Kilcoyne at (781) 418-2349.

Respectfully submitted,
EBI ENGINEERING PC

07 June 2022

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Certification Statement

I, Dr. Anthony E. Farmand, PhD, PE certify that I am currently a NYS registered professional engineer and that this Pilot Study Work Plan (PSWP) 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).

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APPENDICES

1.0 INTRODUCTION

1.1 SITE DESCRIPTION

The Subject Property (Figure 1) consists of one 5-acre tax parcel identified by Chautauqua County SBL 404.07-8-3. The Subject Property is developed with two structures including a retail strip mall on the western side of the Subject Property and a separate restaurant tenant space north of the strip mall. The buildings are surrounded by an asphalt paved driveway to the west of the building for access, and a small portion of unpaved grassy area at the southwestern corner of the Subject Property. The eastern side of the Subject Property is an asphalt paved parking lot.

The Subject Property is bordered by Cole Avenue to the north, Foote Avenue to the east, a separate strip retail mall and parking lot to the south, and residential homes and backyards to the west.

The separate restaurant building to the north is currently occupied by a McDonald's restaurant (704 Foote Avenue). The strip mall consists of six separate tenant spaces occupied from north to south by: the UPS Store – a shipping supplies store (708 Foote Avenue), Spa Nails – a nail salon (710 Foote Avenue), Dollar Tree – a retail store (716 Foote Avenue), Cellular One – a cellular service and retail store(720 Foote Avenue), KeyBank – a bank (730 Foote Avenue), and TOPS Friendly Markets (TOPS) – a grocery store (738 Foote Avenue). See Figure 2 for details.

1.2 SITE HISTORY

The Subject Property had been occupied by residential buildings from at least the 1890s to 1955. Between 1955 and 1958 to 1960, a strip mall and a former separate structure north of the strip mall were built at the Subject Property. Two historical dry cleaners, Triangle Cleaners and Anderson Cleaners, occupied a tenant space historically addressed as 736 Foote Avenue from approximately 1956 to at least 1975 in the strip mall building. Two additional dry cleaners, Anderson Cleaner and Whirley-Wash Dry Cleaners, occupied the historical tenant space addressed as 750 Foote Avenue from approximately 1980 to at least 1994.

The former northern building (704 Foote Avenue) had been historically occupied by two former gas stations between approximately the 1950s to the late 1970s. . This building was demolished between 1975 and 1980, and the current building was constructed in 1980 for use as a McDonald's. Two 500-gallon oil USTs and four 3,000-gallon gasoline USTs were known to be at the Subject Property, however no information was identified from the Jamestown Fire Department or the petroleum bulk storage (PBS) registration, nor were tank closure reports identified.

1.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS AND REGULATORY CORRESPONDENCE

Environmental Reports and Investigations have been completed at the Subject Property since 2007. The following is a list of reports that had been completed and were reviewed.

- Phase I Environmental Site Assessment (ESA), prepared by EMG Corporation, dated April 2007;
- Limited Site Investigation Report, prepared by Apex Companies, LLC (Apex), dated November 2008;
- Additional Site Investigation, prepared by Apex, dated March-May 2010;
- Site Investigation, prepared by Apex, May-June 2010;
- Site Investigation, prepared by Apex, dated May 2011;
- Off-Site Site Investigation, prepared by Apex, dated December 2011 – January 2012;

- Sub-Slab Vapor Assessment, prepared by Apex, dated March-April 2012;
- Off-Site Sub-Slab Vapor Assessment at Southside Foote Avenue Plaza, prepared by Apex, dated July 2012;
- Phase I ESA, prepared by EBI Consulting, dated December 2012;
- Sub-Slab Depressurization System Installation Report, prepared by Apex, dated May 2013;
- Addendum to Phase I ESA and NYSDEC Regulatory File Review, prepared by EBI Consulting, dated August 2013;
- Environmental Review and Comments, prepared by Bell Oldow, dated August 2013;
- Phase I ESA, prepared by AEI Consultants (AEI), dated October 2014;
- Potential Source Area Investigation, prepared by Apex, dated May 2015;
- Groundwater Sampling Results and Evaluation of SSDS, prepared by ATC Engineering, LLP (ATC), dated January 30, 2019;
- Remedial Investigation Work Plan, prepared by Benchmark, dated November 2019; and,
- Draft Remedial Investigation / Alternatives Analysis Report, prepared by Benchmark, dated June 2020.

Previous environmental investigations and reports have been completed at the Subject Property between 2007 and 2019 to assess potential environmental issues based on the historic use of two tenant spaces for dry cleaning operations. The investigations identified the presence of soils impacted by chlorinated volatile organic compounds (CVOCs) at concentrations above the 9 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs) and groundwater impacted by CVOCs above the 1.1.1. TOGS Groundwater Quality Standards/ Guidance Values (GWQS). The highest concentrations of CVOCs in soil and groundwater were observed adjacent to the former Whirley-Wash location (750 Foote Avenue). Elevated concentrations of CVOCs were identified in sub-slab vapor samples collected from this area. A sub-slab depressurization system (SSDS) was installed in February 2013 at the location of the former Whirley-Wash, within the existing TOPS. Indoor air results collected in 2013 from TOPS and the neighboring property to the south were below the NYSDOH action levels, confirming that the SSDS is effectively mitigating CVOC concentrations in the sub-slab vapor of these buildings.

1.4 SUMMARY OF THE DRAFT REMEDIAL INVESTIGATIONS FINDINGS

The Draft Remedial Investigation was completed by Benchmark between April 16 to May 7, 2020 (Benchmark's 2020 RI) to supplement previous environmental data and delineate or identify areas requiring remediation. On-site field activities included a sewer evaluation; SSDS evaluation; soil boring advancement; surface, near surface, and subsurface soil and fill sampling; soil vapor testing; monitoring well installation; and groundwater quality sampling. The sampling was completed in accordance with NYSDEC-approved RI Work Plan, prepared by benchmark, dated November 2019.

1.4.1 Surface and Near Surface Soil Analytical Investigation and Results

Two surface soil samples and two near-surface soil samples were collected from the non-hardscaped area in the southwestern corner of the Site, from depths of 0 to 2 inches below the vegetative cover (if present) and near-surface soil samples were collected from 2 to 12 inches below ground surface, via hand augur. The two soil samples were analyzed for Target Analyte List (TAL) metals, polychlorinated biphenyls (PCBs), pesticides, herbicides, 1,4-dioxane and PFAs. No samples were analyzed for TCL VOCs since no elevated PID readings were detected.

The analytical results were compared to the UUSCOs and the CUSCOs. Nickel was the only contaminant detected above its CUSCO. The detection was in a surface soil sample in the southwestern corner of the Subject Property. Chromium, zinc, and 4,4'-DDT were the only contaminants detected above UUSCOs.

1.4.2 Subsurface Soil and Fill Analytical Results

Seventeen soil borings were advanced across the Subject Property; two borings were located inside the TOPS tenant space, one boring was completed in the Salon-1 tenant space, and one boring was completed in the offsite building adjoining to the TOPs to the south. The borings were completed to depths ranging between 7 and 20.5 feet below ground surface (bgs). One location, MW-1D was planned to be a deep overburden groundwater monitoring well to be paired with existing well MW-1; however, the depth to refusal was the same as the depth of well MW-1 so it was not completed as a well. An additional five soil borings were converted to monitoring wells. The soil samples were analyzed for target compound list (TCL) plus CP-51 List VOCs plus tentatively identified compounds (TICs), TCL SVOCs plus TICs, TAL metals, PCBs, pesticides, herbicides, 1,4-dioxane, and PFAs. A limited number of subsurface soil samples were also submitted for analysis of total organic carbon (TOC), heterotrophic plate count (HPC), and soil oxidant demand (SOD) to assist in selecting potential remedial alternatives.

Benzo(a)pyrene, dibenz(a,h)anthracene, arsenic, and barium were the only contaminants detected above CUSCOs in subsurface soil and fill. Benzo(a)pyrene was detected in one soil sample collected from two to four feet bgs and is associated to urban fill and was currently covered by asphalt pavement. The arsenic and two barium exceedances were at depths between eight and fourteen feet bgs, tend to be ubiquitous in urban fill and are covered by asphalt pavement. PCE was detected above its Protection of Groundwater Soil Cleanup Objective (PGSCO) in saturated soil and fill at depths between 8 and 16 feet bgs in the presumed source area, and along the groundwater plume, with the highest concentration (14 mg/kg) detected in the saturated 6 to 10 feet interval prior to the installation of well MW-13 in 2015. None of the concentrations suggest a soil or fill source of contamination.

1.4.3 Soil Vapor Investigation

Ten soil vapor sample locations were planned for the RI; seven to be completed along the west, north, and east property boundary (SV-01 to SV-07) and three off-site along the east side of Foote Avenue (SV-08 to SV-10). The soil vapor probes were installed to a depth of 5-feet bgs. The soil vapor samples were purged and sampled in general accordance to NYSDOH guidance and analyzed for VOCs via USEPA Method TO-15. Two of the soil vapor locations, SV-06 and SV-07, located along the western boundary of the Subject Property did not collect a sample, due to water in the borehole. Benchmark-Turnkey attempted to remove the water from the borehole and to collect an additional sample on two additional field dates, however this effort was unsuccessful, so these two samples were not collected or analyzed. One outdoor ground level air sample was collected to the southeast of SV-06 location near MW-4, which was upwind of the soil vapor location the day of sampling.

None of the onsite or off-site soil vapor samples exceeded the NYSDOH air guideline values. The outdoor air sample did not contain PCE; however, PCE was detected in all soil vapor samples at low concentrations, generally less than 1.7 micrograms per cubic meter (µg/m^3), except for one location at a concentration of 12 µg/m^3. The highest concentration of PCES in soil vapor sample SV-04 did not correspond to the highest concentration of PCE in the groundwater or subsurface soil and fill. Since the offsite soil vapor concentrations are generally lower than onsite soil vapor samples, and offsite groundwater is not impacted by CVOCs, an offsite soil vapor intrusion study was not warranted as part of the Benchmark's 2020 RI and was not recommended.

1.4.4 Groundwater Investigation

Five out of the planned eight planned onsite groundwater monitoring wells were installed during the RI. Five shallow overburden wells (MW-15 though MW-19) were installed. Three planned deep overburden wells (MW-1D, MW-6D, and MW-18D) were abandoned since the confining layer was identified at a depth of 10 to 22 feet bgs, which is the depth of the existing groundwater monitoring wells. This modification was approved by the NYSDEC in an email dated April 2, 2020. Five of the previously existing ten wells were buried under asphalt. On April 20, 2020, wells MW-3, MW-5, MW-6, MW-8, and MW-11 were uncovered, and the road boxes were repaired. Two shallow overburden wells were installed offsite in the Salon-1 tenant space of the building. Four temporary wells were installed along Cole Avenue and Foote Avenue on April 21, 2020. Groundwater samples were analyzed for TCL plus CP-51 List VOCs, TCL SVOCs plus TICs, TAL metals, PCBs, pesticides, herbicides, 1,4-dioxane and PFAs in nine locations. Groundwater from MW-13 was also analyzed for chlorinated VOCs degraders, dissolved metals, dissolved gasses, and general chemistry to assist in selecting potential remedial alternatives.

The following contaminants of concern were detected in groundwater at concentrations above the GWQS/GVs:

- Cis-1,2-dichloroethene
- PCE
- TCE
- Barium
- Magnesium
- Sodium
- PFOA
- PFOS

The metals detected in limited wells were attributed to naturally occurring conditions. Total PFOAs and PFOS only slightly exceeded the action level in one well. The only groundwater contaminants of significance are the CVOCs which were detected on the eastern portion on the Subject Property in a plume migrating from the southwest to the northeast. The CVOCs in groundwater are the remedial drivers for the Subject Property.

1.4.5 Geology and Hydrogeology

According to the RI and previous environmental investigations, the Subject Property is located within the glaciated Allegheny Plateau. The overburden material at the Subject Property is generally described as gray to brown sandy silt and clayey silt with some gravel. The overburden extends from the ground surface to approximately 7 to 11 feet bgs in the southwestern (upgradient) portion of the Subject Property, and ranges from approximately 14 to 20 feet bgs in the northeastern portion of the Subject Property. The overburden overlies gray weathered shale. Bedrock was observed in all boring location at depths of 7 feet bgs near the southwestern portion of the Subject Property and 20.5 feet bgs near the northeastern corner of the Subject Property. The weathered shale was encountered between 6 and 16 feet bgs.

The Subject Property is located within the Allegheny River major drainage basin, in which the major areas of groundwater are within coarser overburden deposits and sandstone and shale bedrock. Groundwater was encountered at the Subject Property from depths of approximately 3.43 feet bgs (MW-12) at the

southwestern portion of the Subject Property, to 9.28 feet bgs (MW-5) at the northern side of the Subject Property.

Groundwater flows in a northeast direction through the upgradient (southwestern) portion of the Subject Property, then turns and flows in a northerly direction based on the groundwater elevations measure on May 4, 2020. The groundwater flow direction determined during the April 2019 sampling event completed by ATC was towards the northeast.

1.4.6 Remaining Contaminants of Concern (COCs)

Based on the results of the previous investigations, and the Draft Remedial Investigation completed in April 2020, the constituents of concern of the Subject Property which need to be addressed via a remedial strategy include:

- Nickel identified in one surface soil sample at the southwestern corner of the Subject Property
- PCE identified in the subsurface soil
- PCE and TCE identified in the groundwater at the Subject Property

2 SUMMARY OF PILOT STUDY

The goals of the Pilot Study Work Plan (PSWP) and scope of work are detailed in this section.

2.1 OBJECTIVES AND RATIONALE

The following are the objectives of the PSWP:

- Complete a baseline round of groundwater sampling to update the conceptual site model for the Subject Property and to provide a basis of support for or against the effectiveness of the proposed pilot study;
- Reduce PCE contamination through degradation in the groundwater just downgradient of the source area, therefore providing a line of evidence that E-Redox®-In Reduction is a feasible remediation solution;
- Evaluate the results of the pilot testing data to supplement the design for full-scale remediation;
- Collect soil vapor vacuum readings prior to and during pilot testing to ensure that the remedial technology will not adversely affect the existing operation of the SSDS.

The objectives of this PSWP will not address the remediation of any residual soil contamination consisting of metals in the subsurface or the residual chlorinated solvents in the soil vapor phase. As per the NYSDEC comment letter dated October 21, 2021, subsurface soil vapor/ vacuum monitoring points will be installed in order to determine if the pilot testing will affect the operation of the SSDS at the TOPs tenant space.

2.2 SCOPE OF WORK

The scope of work to be completed as part of this PSWP is detailed as follows:

- A geophysical survey of the work area in order to document subsurface utilities in the locations of proposed conduit trenching and monitoring well installation.
- Site mobilization for the groundwater and electrode monitoring well installation, shallow vapor well installation and baseline testing, and trenching/ installation the electrical connections for use in the pilot testing.
- Completion of one round of baseline groundwater sampling via the low-flow purging method of the newly installed groundwater monitoring wells and select existing onsite and offsite groundwater monitoring wells to update the conceptual site model (CSM) and to provide a basis of support for or against the effectiveness of the proposed pilot study.
- Following the baseline sampling event, three of the newly installed wells will be used for electrode installation for E-Redox®-In Reduction. One central monitoring well, located between the three electrode test wells, will be used as the primary monitoring well for evaluation of E-Redox®-In effectiveness . All groundwater wells will be 2-inch diameter and completed with flush mount road boxes with sufficient room for installation of the electrode and wiring. Following installation and baseline sampling, the pilot testing will commence. A detailed description of the remedial technology is included in Section 2.7.
- The pilot testing will continue for 3 months. Three rounds of groundwater monitoring from selected groundwater wells around the pilot testing area will be completed, with sampling conducted after one, two, and three months of operations. The schedule of groundwater monitoring well sampling is included in Section 2.6.

- After the completion of the pilot testing for a duration of 3 months, EBI, Advanced Environmental Technologies, LLC (AET) and the remedial engineer will assess the data to determine the effectiveness of the technology and report the findings in a revised Alternate Analysis Report (AAR).

2.3 FIELD PREPARATION

Prior to the mobilization for field work, EBI will contract with a New York state certified driller.

Prior to the mobilization for drilling and electrical installation work onsite, EBI and/or the selected drilling contractor will contact Dig Safely New York to notify the affected member utilities of the proposed work. This notification will be made a minimum of 72-hours in advance of site mobilization. EBI will contract with a ground penetrating radar contractor in order to clear the proposed drilling and trenching locations, and to locate all subsurface utilities in the parking lot of the Subject Property in advance of future remedial installations. This survey will aid in the development in of the Remedial Action Work Plan (RAWP).

2.4 PILOT TESTING INSTALLATION AND BASELINE SAMPLING

EBI will contract with a New York state certified driller to install one groundwater monitoring well just upgradient and exterior to the TOPs tenant space at the Subject Property, and three groundwater electrode wells triangulated around this monitoring well to the northwest, northeast, and east of the new groundwater monitoring well (Figure 3).

Prior to equipment setup, the work area will be secured by placing reflective road cones with telescoping lateral connections around the work area to prevent the public from entering the work area.

A site-specific Community Air Monitoring Plan (CAMP) has been prepared for the Site and has been placed in Section 2.8.1. This document will be employed during all intrusive Site activities, including monitoring well and vapor/vacuum monitoring point installation and trenching. Implementation of the CAMP is not necessary during baseline and monthly groundwater gauging/ sampling or electrode installation.

2.4.1 Soil Screening and Well Installation Details

Each proposed well location will be continuously soil sampled prior to advancement of the hollow stem augers. Soils will be field screened at discrete 6-inch intervals using a PID. If elevated PID readings and/or field indicators/ odors indicating contamination are identified, soil samples will be collected and shipped under chain of custody to a New York-certified laboratory for the analysis of CVOCs. If no elevated PID readings and/or field indicators/ odors indicating contamination are encountered, soil samples will not be collected for laboratory analysis. Soil boring logs, documenting the PID field screening data, will be prepared for each well location.

The permanent groundwater wells will be installed by a New York licensed well driller using a Geoprobe drill rig equipped with 4.25-inch ID hollow stem augers. The soils samples collected prior to well installation will aid with placement of the well screen interval. wells will be constructed with 2-inch diameter10-slot screened PVC and 2-inch PVC casing. The annular space between the well and the borehole will be filled with a filter sand pack to 2-feet above the screened interval, and sealed with bentonite chips. The permanent wells will be finished with road-grade well boxes set in a concrete pad to protect the wells from vehicular traffic. Following installation, the wells will be developed with a submersible or inertial pump until the water is visibly free of sand and silt. Well completion logs will be prepared for each installed well.

After installation, the monitoring wells will be allowed to equilibrate for 3 days. During this two-week period, the four groundwater monitoring wells will be surveyed. This information will also aid in the groundwater elevation determination.

2.4.2 Vacuum Monitoring Point Installation and Testing

Two shallow vapor wells (i.e. vacuum monitoring points) will also be installed exterior to the TOPs tenant space in order to facilitate the collection of vacuum readings during pilot testing as per the NYSDEC October 21, 2021 Comments Letter. The vapor/ vacuum monitoring wells, designated ESV-1 and ESV-2 (Figure 3) will be installed to a depth of approximately 5- feet bgs using a direct push drill rig. The construction materials will consist of a plastic vapor point/screen attached to Teflon or Nylaflow tubing. The soil vapor points will be set near the bottom of the boring and surrounded by silica sand to approximately 4.5 feet in depth. Neat cement will be installed between 0.5 and 4.5 feet bgs. The points will be finished with protective flush mount road boxes set in concrete. Vacuum readings will be collected at the same frequency as the groundwater sampling events (baseline, and monthly after implementation pilot study) to ensure that the remedial technology will not adversely affect the active SSDS.

2.4.3 Trenching and Electrical Installation Details

Following well installation, trenching through the concrete walkway and asphalt parking lot will be completed. The trenches will extend to depths of approximately 6-12 inches below grade surface (bgs), and will horizontally connect the wellheads of the electrode wells to the electrical equipment/ DC power source that will supply a low voltage to the electrodes. An existing standard 120VAC outlet, located proximal to the pilot study area, will be utilized as the power source for the testing. A locking protective cover will be installed over the outlet to minimize potential tampering with or disconnection of the power source during the test. The DC power source will be placed inside a weather resistant locking Junction box mounted to the exterior building façade and will plug directly into the existing outlet.

A ¾ to 1 inch diameter PVC electrical rated conduit will be installed in the trench from the power supply and routed to each electrode well. Low voltage 10-gauge, stranded weather rated wiring will be pulled through the conduit to each of the three electrode well heads. Sufficient excess wiring will be nested in each road box for electrode connection/ placement into the well. Several inches of excavated soil will be returned to the trench and compacted over the conduit. Electrical underground warning tape made of metal-detectable polyester material will be placed several inches above the conduit. The remaining space will be backfilled, compacted, and topped with asphalt. No open trenches will be left during non-working hours and the work area will remain secured until the final asphalt restoration is complete.

Excess concrete will be discarded as municipal waste. Excess asphalt will be hauled offsite by the paving contractor for recycling. Minimal excess soil is anticipated to be generated during the well installation/ trenching work. Excess soil will be placed on and covered with minimum 6-mil poly sheeting during the installation activities. Any excess soil remaining following completion of backfilling will be containerized in 55-gallon DOT approved drums and staged onsite for future characterization and disposal. Soils exhibiting excessive VOC headspace readings or with visual indications of impacts will not be reused as backfill.

2.4.4 Baseline Groundwater Gauging and Sampling

Following three days of equilibration time, EBI will re-mobilize to the Subject Property to collect a round of groundwater elevation levels and groundwater samples. The groundwater samples will be collected from the following wells:

- The newly installed groundwater monitoring well (MW-22);
- The three newly installed electrode wells (EMW-1, EMW-2 and EMW-3);
- All existing accessible onsite groundwater wells; and
- Offsite exterior wells MW-8, MW-10A, MW-11, and offsite interior wells MW-20, and MW-21 (if interior access can be granted by the adjacent property owner)

The groundwater sample will be collected via low-flow sampling methods and sent to the laboratory for analysis of CVOCs via EPA Method 8260 and chloride. MW-22 and MW-13 will also be analyzed for ethane, ethene, and acetylene. This round of sampling will constitute the baseline sampling event. Field parameters, including pH, dissolved oxygen, oxidation-reduction potential, turbidity and conductivity will be measured with a water quality meter and recorded onto field sheets prior to sample collection.

2.5 PILOT TESTING

EBI will contract with AET to install the electrodes in the three proposed electrode wells. AET will connect the electrodes to the DC power supply located at the front of the TOPs tenant space within a secured weather resistant, secured junction box (See Section 2.4.3). Once the connections are made, AET will operate the system and monitor the system for the start date, and the second day of operation. Once the pilot testing is operational, it will run for a minimum of 3 months. During this time EBI personnel will monitor the system twice during the first month of operation, then once a month until the end of the pilot testing period. EBI will also complete a total of four rounds of groundwater sampling and gauging, with a baseline sampling event prior to pilot testing startup, and continue once a month until the end of the 3- month pilot testing period. A detailed description of the remedial technology is discussed in Section 2.7.

Vacuum readings will be collected at the same frequency as the groundwater sampling events to ensure that the remedial technology will not adversely affect the active SSDS.

2.6 GROUNDWATER SAMPLING DATA COLLECTION SCHEDULE

The following table details the proposed groundwater monitoring well sampling schedule during the implementation of the PSWP. The baseline groundwater samples will be collected from the following wells:

- The newly installed groundwater monitoring well (MW-22);
- The three newly installed electrode wells (EMW-1, EMW-2 and EMW-3);
- All existing accessible onsite groundwater wells; and
- Offsite exterior wells MW-8, MW-10A, MW-11, and offsite interior wells MW-20, and MW-21 (if interior access can be granted by the adjacent property owner).

The monthly monitoring after baseline testing and commencement of pilot testing will include select onsite and offsite wells, as detailed below:

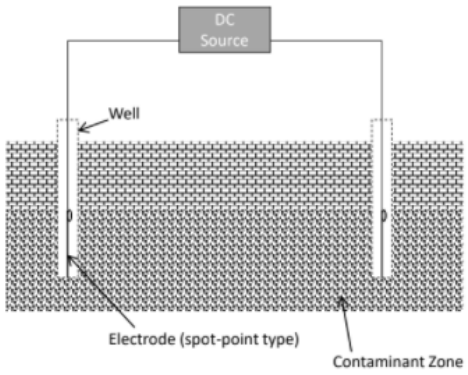
Groundwater Monitoring Well	Rationale	First Month Monitoring	Second Month Monitoring	Third Month Monitoring
MW-13	Source Area/Upgradient of Pilot Testing	CVOCs, Chloride, ethane, ethene, and acetylene	CVOCs, Chloride, ethane, ethene, and acetylene	CVOCs, Chloride, ethane, ethene, and acetylene
MW-6	East/Crossgradient of the Pilot Testing	CVOCs, Chloride	CVOCs, Chloride	CVOCs, Chloride
MW-2	Northwest/Downgradient of the Pilot Testing	CVOCs, Chloride	CVOCs, Chloride	CVOCs, Chloride
MW-8	Cross/Upgradient of Pilot Testing	CVOCs, Chloride	CVOCs, Chloride	CVOCs, Chloride
MW-22 (proposed monitoring well to be installed as part of this PSWP)	Monitoring well Directly in the Pilot Testing Area	CVOCs, Chloride, ethane, ethene, and acetylene	CVOCs, Chloride, ethane, ethene, and acetylene	CVOCs, Chloride, ethane, ethene, and acetylene
EMW-1, EMW-2 and EMW-3 (Proposed electrode wells installed as part of this PSWP)	Treatment well testing to determine effectiveness directly in the treatment well.			CVOCs, Chloride

All groundwater monitoring well on the Subject Property will be gauged in order to updated contour maps during the PSWP period. The groundwater sample will be collected via low-flow sampling methods and sent to the laboratory for analysis of CVOCs via EPA Method 8260 and chloride. Field parameters, including pH, dissolved oxygen, oxidation-reduction potential, turbidity and conductivity will be measured with a water quality meter and recorded onto field sheets prior to sample collection.

2.7 TECHNICAL DESCRIPTION OF E-REDOX REDUCTION

E-Redox® technology is a relatively new remedial technology that utilizes bio-electro-chemical processes in order to achieve rapid degradation of contaminants by manipulating and accelerating transfer of electrons within the impacted media including groundwater, soils, and sediments. E-Redox® would be applied in-situ at the Subject Property and installed within existing monitoring wells and newly installed boreholes as needed. E-Redox® is a patented technology developed AET. For chlorinated solvents, E-Redox®-In is generally used for reductive de-chlorination, specifically TCE and PCE destruction. The technology relies on connection to a DC power source in order generate an electric field. See diagram[1] below.

[1] Low-intensity Electrochemical Redox Reactions for Contaminant Remediation in Clay & Silt Matrices, Song Jin, Ph.D., CHMM, Advanced Environmental Technologies, LLC, Fort Collins, Colorado



E-Redox®-In generates a low-voltage gradient electric field in between the electrodes uniformly inducing reduction and oxidation (redox) reactions. The soil particles become micro-electrodes triggering numerous red-ox reactions. Additionally, microbial activities within the electric field can also be stimulated by the red-ox reactions, which further enhances contaminant degradation or transformation. E-Redox®-In is applicable to highly oxidized contaminants such as chlorinated solvents. It has also been shown to be highly effective at complete degradation, without leaving intermediate breakdown products such as cis-1,2-dichloroethylene (cis-1,2-DCE) and vinyl chloride.

According to a Case Study published by AET, a field pilot test was conducted at a chlorinated solvent-contaminated site in Utah, where the primary COCs were TCE, DCE, and vinyl chloride. The E-Redox®-In system was applied to groundwater and sediments, and results indicated enhanced back diffusion, which would result in high reduction rates indicated by high production of ethene. After 47 days, the ethene production was 15 times higher than the baseline concentration, which results in equivalent TCE reduction rates of 1,187 and 876 micrograms per liter per day (µg/L/day), respectively. Another case study demonstrated the effectiveness on PCE contaminated groundwater degradation using laboratory testing with impacted groundwater. Direct current (DC) and alternating currents (AC) sources provided the electrical requirements for the E-Redox®-In electric field. After 40 hours, the test yielded 53% reduction of PCE. Based on the case studies, and a consultation with AET, EBI and the remedial engineer believe that E-Redox®-In has the potential to be an effective remedial strategy at the Subject Property.

Since E-Redox®-In operates well by transferring electricity through soil media, low permeable soils are preferable in order to increase the radius of influence of effectiveness. At the time of this PSWP, AET anticipates starting with an assumed 15-foot radius of influence. The soil media at the Subject Property is comprised of very tight, low permeability silts and clays within the water bearing strata, hence the slow groundwater advection velocity.

For the Pilot Testing planned as detailed in this PSWP, three sets of opposite poled electrodes, called an anode and cathode, will be inserted into the three newly installed groundwater electrode wells. The electrodes will be connected to to electrical wires through the top of the well casing. The wiring connects back to the DC power source through the conduit installed in the trenches. Low voltage will be applied to the electrodes, which will cause an electric field (voltage gradient), which will induce ionic movement. This ionic movement consists of cations moving to the cathode, and anions moving to the anode. The voltage to each well can be controlled from the DC power source and will be set based on AETs experience with similar applications.

2.8 DUST, ODOR, VAPOR, AND NUISANCE CONTROL PLAN

The following sections will identify all the air monitoring protocols that will be completed during the PSWP. The air monitoring is only anticipated to be completed during invasive subsurface activities including

the groundwater monitoring well and soil vapor/ vacuum monitoring point installation and trenching for electrical wire connections. Once the wells are installed and the electrodes are placed, no other invasive subsurface work that has the potential to generate dust, odor, vapor, or other nuisance is anticipated.

2.8.1 CAMP Details

In accordance with the Health and Safety Plan (See Section 2.9), the CAMP will be implemented during all ground intrusive activities, which during this scope of the PSWP, which will consist of installation of groundwater monitoring wells and soil vapor/ vacuum monitoring points and trenching between the wells and the electrical connection at the front of the tenant space. The CAMP will consist of an upwind, downwind, and work zone air monitoring system, consisting of real-time monitoring of VOCs and particulates.

2.8.2 Odor and Vapor Control Plan

In addition to the CAMP, EBI will monitor for the presence of odors during subsurface work, including the drilling and the trenching work. The groundwater monitoring well installation is anticipated to be completed in two days and will minimally disturb the subsurface soils. The trenching will be completed following the well installation and will take up to three days. Based on the depth of the trenching (approximately 6-12-inches bgs), minimal dust, odor, vapor, or other nuisance is anticipated. However, CAMP air monitoring will be completed during this work, until the trenches are repaired. The total duration of intrusive ground work is anticipated to take approximately 1-week to complete.

Total VOCs will be monitored with a hand-held PID. If the action level is exceeded and adequate ventilation cannot be provided, work will cease and the potential affected portion of the work area will be evacuated until adequate mechanical ventilation can be implemented to control the hazard. The following actions will be taken based on total VOC levels measured:

- If total VOC levels exceed 5 ppm above background for the 15-minute average at the work zone, work will be temporarily halted and monitoring continued. If levels readily decrease (per instantaneous readings) below 5 ppm above background, work will resume with continued monitoring.
- If total VOC levels at work zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work will resume provided that the total VOC level is below 5 ppm above background for the 15-minute average within the work zone.
- If the total VOC level is above 25 ppm in the work zone or at the perimeter of the work area, excavation will be stopped and a re-evaluation of activities will be initiated. The source of vapors will be identified, corrective actions will be taken to abate emissions, and monitoring will continue. After these steps, work will resume provided that the total VOC level is below 5 ppm above background for the 15-minute average within the work zone.

All 15-minute readings will be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

2.8.3 Dust Control Plan

Dust management during drilling and trenching will include:

- Exercising extra care during dry and high-wind periods.

- Dust suppression consisting of the use of water for wetting trenching areas on an as-needed basis during subsurface work. All asphalt and concrete cutting will be conducted using wet cutting methods.

Dust emissions will be monitored and controlled as identified through the collection of dust data collected through the air monitoring stations employed as per the CAMP. 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 will be utilized. The following actions will be taken based on visual observations and measured dust levels using a quantitative meter:

- If the work zone particulate level is 100 µg/m³ greater than background for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression must be employed. Work may continue with dust suppression techniques provided that work zone particulate levels do not exceed 150 µg/m³ above the background level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, work zone particulate levels or the particulate levels measured at the downgradient air monitoring station occurring are greater than 150 µg/m³ above the background level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the work zone particulate concentration to within 150 µg/m³ of the background level and in preventing visible dust migration.

If nuisance odors or vapors are identified outside of the building structure or off-site, work will be halted and the source of odors will be identified and corrected. Work will not resume until nuisance odors or vapors have been abated.

NYSDEC and NYSDOH will be notified of all odor and vapor events and of all other complaints about the project. Implementation of odor and vapor controls, including halting work, will be the responsibility of the Field Manager. Implementation of odor and vapor controls will be the responsibility of the Contractor.

NYSDEC and NYSDOH will be notified within 24-hours in the event of any exceedances of the CAMP action levels that require corrective action. These corrective actions taken will be reported to the NYSDEC and NYSDOH within 24-hours and also included in the field daily reports.

2.8.4 Other Nuisances

Noise control will be exercised during the drilling and trenching work, including setting up an exclusions zone to keep customers of the tenant space away from the active work areas.

2.9 HEALTH AND SAFETY PLAN (HASP)

The HASP provides a mechanism for establishing on-site safe working conditions, safety organization, procedures, and personal protective equipment requirements. The HASP meets the requirements of 29 CFR 1910.120. The HASP includes, but is not limited to, the following components listed below:

- Organization and identification of key personnel
- Training requirements
- Medical surveillance requirements
- List of site hazards
- Excavation safety

- Work zone descriptions and monitoring procedures
- Personal safety equipment and protective clothing requirements
- Contingency plan
- Safety data sheets

The CIH certified HASP can be found in Appendix B.

2.10 QUALITY ASSURANCE PROJECT PLAN (QAPP)

The following section details the QAPP in accordance with the NYSDEC DER-10 Technical Guidance as applies to the activities to be completed as part of this PSWP. This QAPP will summarize:

- The project scope and project goals for this PSWP and its importance in the overall remedial goals of the Subject Property
- Project organization including the designation of a project manager and the quality assurance officer (QAO)
- Sampling procedures, data quality usability objectives, and equipment decontamination procedures
    - Including a site map showing sample locations
    - Analytical Methods/Quality Assurance Summary Table

2.10.1 Project Scope and Goals

The scope of work to be completed as part of this PSWP is detailed as follows:

- A geophysical survey of the Subject Property in order to document subsurface utilities throughout the Subject Property and clear the locations to be used for the electrode, groundwater monitoring wells and soil vapor/ vacuum monitoring points.
- Site mobilization for the groundwater and electrode monitoring well installation, shallow vapor well installation, and trenching for the electrical connections for use in the pilot testing.
- Completion of one baseline round of groundwater sampling via the low-flow purging method of the newly installed groundwater monitoring well and selected existing groundwater monitoring wells to update the CSM and to provide a basis of support for or against the effectiveness of the proposed pilot study.
- Following the baseline sampling event. EBI and AET will mobilize to install the electrodes into the three newly electrode wells and connect to electricity at the Subject Property. Following this installation, the pilot testing will commence. A detailed description of the remedial technology is in Section 2.7.
- The pilot testing will continue for a minimum of 3 months. Sampling of selected groundwater wells around the pilot testing area will be completed after one, two, and three months of operation.
- After the completion of the pilot testing for 3 months, EBI, AET and the remedial engineer will assess the data to determine the feasibility of the technology, and report the findings in a revised AAR.

2.10.2 Project Organization

The following table outlines an organizational chart for relevant contacts and personnel involved in the PSWP:

Title	Name	Entity	Contact Information
Professional Engineer	Dr. Anthony E. Farmand, PhD, PE	EBI	afarmand@ebiconsulting.com
Project Manager	Brian Kilcoyne	EBI	bkilcoyne@ebiconsulting.com
Field Manager	Christine B Madsen	EBI	cmadsen@ebiconsulting.com
AET Project Manager	Song Jin	AET	songjin@aetecs.com
NYSDEC Project Manager	Joshua Vaccaro	NYSDEC	Joshua.Vaccaro@dec.ny.gov
Site Representative	Rabbi Shlomo Noble	Southside Plaza LLC	rabbinoble@gmail.com
Emergency	Ambulance	Jamestown Fire Department	911

2.10.3 Sampling Procedures

During the scope of the PSWP, soil and groundwater will be sampled and sent for laboratory analysis. The groundwater samples will be collected from the following wells:

- The newly installed groundwater monitoring well (MW-22);
- The three newly installed electrode wells (EMW-1, EMW-2 and EMW-3);
- All existing accessible onsite groundwater wells; and
- Offsite wells MW-8, MW-10A, MW-11, MW-20 and MW-21.

The groundwater sample will be collected via low-flow sampling methods and sent to the laboratory for volatile organic compounds (VOCs) + Tentatively Identified Compounds (TICs) via EPA Method 8260. This round of sampling will constitute the baseline sampling event.

The groundwater sampling will be completed using low flow sampling methodology, which includes the collection of groundwater quality parameters while purging the water a rate no greater than 200 milliliters per minute (mL/min). Bladder or peristaltic pumps will be used to reduce the volatilization of the volatile organic compounds, which are the contaminants of concern to be sampled. During purging, water quality parameters will be collected via a calibrated inline meter (YSI or Horiba multiparameter meter, or equivalent) for temperature, dissolved oxygen, ORP pH, conductivity, and turbidity. Once the parameters have stabilized (see Appendix C field sampling sheet for specific stabilization criteria), the groundwater sample will be collected directly from the tubing, before the water quality meter. Groundwater samples will not be collected fewer than 30 minutes after the start of purging, and if the parameters do not stabilize, the groundwater samples will be collected after a total of 3 volumes of water have been purged.

The following groundwater monitoring wells will be sampled, along with other quality assurance (QA)/ quality control (QC) samples in accordance with NYSDEC DER-10 Technical Guidance.

Groundwater Monitoring Well	Matrix	Frequency	Analytical Method and Analysis	Sampling Container and Preservative	Sample Holding Time
MW-1, MW-3, MW-4, MW-5, MW-7, MW-12, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19	Groundwater	Once During Baseline	CVOC List* via EPA Method 8260D	2 x 40 millimeter (mL) capped Teflon septum glass vials with hydrochloric acid (HCl) filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice

Groundwater Monitoring Well	Matrix	Frequency	Analytical Method and Analysis	Sampling Container and Preservative	Sample Holding Time
			Chloride via EPA Method 300/SW846 9056	Plastic 250ml unpreserved	28 days – Keep sample in ice chest at 4°Celsius using ice
MW-13, MW-6, MW-2, MW-8, MW-22	Groundwater	Baseline, 1st, 2nd, 3rd Month	CVOC List* via EPA Method 8260D	2 x 40 mL capped Teflon septum glass vials with HCl filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice
			Chloride via EPA Method 300/SW846 9056	Plastic 250ml unpreserved	28 days – Keep sample in ice chest at 4°Celsius using ice
MW-13 and MW-22	Groundwater	Baseline, 1st, 2nd, 3rd Month	Ethane, ethene, and acetylene via EPA Method EPA RSKSOP-175, Revision 2, May 2004	2 x 40 mL capped Teflon septum glass vials with HCl filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice
EMW-1, EMW-2, EMW-3	Groundwater	Baseline and 3rd Month	CVOC List* via EPA Method 8260D	2 x 40 mL capped Teflon septum glass vials with HCl filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice
			Chloride via EPA Method 300/SW846 9056	Plastic 250ml unpreserved	28 days – Keep sample in ice chest at 4°Celsius using ice
Duplicate Sample	QA/QC - Groundwater	1 per 20 samples collected	CVOC List* via EPA Method 8260D	2 x 40 mL capped Teflon septum glass vials with HCl filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice
Matrix Spike/ Matrix Spike Duplicate (2 samples)	QA/QC - Groundwater	1 per 20 samples collected			
Field Blank	QA/QC	1 per sampling day			
Trip Blank	QA/QC	1 per cooler			

* CVOC List consists of PCE, TCE, DCE, Vinyl Chloride, cis/trans- DCE

Is elevated PID readings and/or field indicators/ odors are encountered in soil samples collected from the new well locations, soil samples will be collected and submitted for laboratory analysis of CVOCs.

Soil Boring/ Groundwater Monitoring Well	Matrix	Frequency	Analytical Method and Analysis	Sampling Container and Preservative	Sample Holding Time
EMW-1, EMW-2, EMW-3	Soil	Once During Well Installation	CVOC List* via EPA Method 8260D	2 x 40 millimeter (mL) capped Teflon septum glass vials with deionized water and 1x40 mL capped Teflon septum glass vial with methanol	14 days – Keep sample in ice chest at 4°Celsius using ice
Duplicate Sample	QA/QC - Soil	1 per 20 samples collected	CVOC List* via EPA Method 8260D	2 x 40 millimeter (mL) capped Teflon septum glass vials with deionized water and 1x40 mL capped Teflon septum glass vial with methanol	14 days – Keep sample in ice chest at 4°Celsius using ice
Matrix Spike/ Matrix Spike Duplicate (2 samples)	QA/QC - Soil	1 per 20 samples collected			
Trip Blank	QA/QC	1 per cooler			

* CVOC List consists of PCE, TCE, DCE, Vinyl Chloride, cis/trans- DCE

See Figure 2 for the locations of the existing groundwater monitoring wells. The proposed groundwater monitoring wells are shown on Figure 3.

2.10.4 Equipment Decontamination

The project activities that will require decontamination consist of the drilling equipment used for the installation of the groundwater monitoring wells and soil vapor/ vacuum monitoring points, and any equipment that is reused between groundwater well gauging and sampling.

During drilling, the drilling rods will be decontaminated between boring locations to avoided cross contamination. During groundwater gauging, the water level will be decontaminated between wells. During groundwater sampling, any equipment that is not strictly dedicated, such as tubing, bailers, or bladders, will be disposed of at the end of each use on one single well location. Re-used equipment such as the water level meter and the water quality parameter meter will be decontaminated between wells.

The field personnel will always start gauging wells, and sampling in the source area, and move from groundwater monitoring wells containing lower concentrations of contamination to areas of higher contamination. Depth to water readings will be collected prior to the collection of any independent groundwater samples. Depth to bottom readings will be completed at the end of sampling collection on a well-by-well basis.

Any sampling equipment used should preferably be laboratory cleaned, packaged, and dedicated for use at one site and sample location for each day of sampling activity.

1. Decontamination of all equipment should be completed prior to the start of any drilling
2. Establish a decontamination station on plastic sheeting consisting of three buckets for decontamination:
    2.1. Rinse with tap or distilled water over a bucket
    2.2. Rinse with Alconox mixed with tap or distilled water over a bucket to catch initial rinsate
    2.3. Rinse with tap or distilled water over a Bucket to catch rinsate
    2.4. Final rinse the equipment with water over a bucket

3. Drillers should don new gloves, then decontaminate all drilling rods to be used and the stainless steel macrocore liner prior to use.
   3.1. Knock loose all loose dirt and soil with a brush prior to liquid decon
   3.2. Don new gloves
   3.3. Decon the metal equipment using the three buckets decon procedure.
4. All equipment should be thoroughly decontaminated between borehole locations.

2.10.5 Data Reduction, Verification and Reporting

Verification of data obtained from sampling will be performed by the Project Manager who will determine the validity of the data by comparing the actual procedures used for field measurements, sampling, and custody, as documented on forms and in the field log book, with those prescribed in the work plan and/or approved by the Project Manager.

2.10.6 Data Usability Summary Report

As part of this PSWP, a Data Usability Summary Report or DUSR will be prepared to summarize the groundwater sampling and analytical results for the Site. The primary objective of the DUSR is to determine whether the analytical data meets Site specific objectives for data quality and data use.

The DUSR will be prepared following the guidelines provided in DER-10 Technical Guidance for Site Investigation and Remediation, May 2010, Guidance for the Development of Data Usability Summary Reports. The complete validated analytical results (ASP Category B Deliverables) and Form 1s will be provided in the DUSR to be incorporated in the AAR

2.10.7 Electronic Data Deliverables

The revised AAR will be provided to NYSDEC and DOH will be submitted in the Department's most current electronic data deliverable (EDD) format upon completion of the pilot study. All analytical data will be summarized in data tables compared to applicable regulatory standards, along with complete laboratory analytical reports.

3 SCHEDULE

Following NYSDEC approval of this PSWP, the installation of the various components of the E-Redox® pilot testing system, including baseline testing, is expected to take approximately 4-6 weeks to complete. The system will then run for a minimum of 3-months. Following the completion of the pilot test, the findings will be included in a revised AAR which will be submitted to the NYSDEC for approval. A detailed tentative project schedule is presented as a Gannt Chart included in Appendix D.

3.1 NOTIFICATION

The NYSDEC will be notified at least 7 days prior to commencement of field work related to the PSWP. A pre-construction meeting will be coordinated between the property owner, EBI, and the NYSDEC. This meeting must take place prior to the implementation of this PSWP.

4 REPORTING

4.1 PSWP REPORTING

EBI will complete and submit a status report to update the NYSDEC of the completion of the pilot testing field installation activities and baseline testing. This report will also include the field documents stipulated below. Following installation of the test wells and E-Redox® electrodes, pilot testing will commence. EBI will prepare monthly status reports to document the progress of the pilot testing, including any deviations to the approved PSWP.

The final report of the pilot study will specifically include the following field notes as attachments:

- Boring logs;
- Well construction logs;
- Well development logs; and
- Well sampling purge logs

4.2 REVISED ALTERNATIVES ANALYSIS REPORT

The results of the E-Redox® pilot test will be summarized in a revised AAR. Previous comments provided in the DEC comment letter dated October 21, 2021, will also be addressed in the revised AAR. At the conclusion of the pilot testing, if successful remediation is demonstrated, a remedial approach including use of full scale E-Redox® treatment technology, along with targeted soil excavation to remediate metals in soil will be the suggested preferred alternative.

If after the pilot testing the remedial success is indeterminate or not successful, the Alternative Analysis Report will be revised, and the feasibility of other remedial alternatives will be re-evaluated.

4.3 REMEDIAL ACTION WORK PLAN

A Remedial Action Work Plan will be prepared outlining the selected remedial alternative following approval of the revised AAR by the NYSDEC and NYSDOH.

APPENDIX A
FIGURES

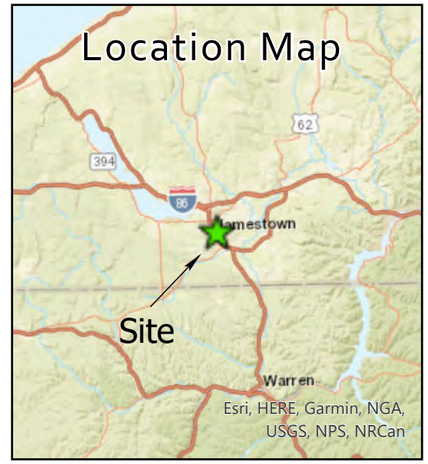


Figure 1
Site Location Map

Subject Parcel

Southside Plaza
704-744 Foote Avenue
Jamestown, NY 14701

USGS 24K Quad:
Jamestown, NY 1986

EBI GIS Date: 2/3/2022

EBI PN: 1220000038

EBI Engineering & Architecture

0 125 250 500 750 1,000 US Feet

Name	Label
McDonald's	704 Foote Ave.
UPS Store	708 Foote Ave.
Spa Nails	710 Foote Ave.
Dollar Tree	716 Foote Ave.
Cellular One	720 Foote Ave.
Key Bank	730 Foote Ave.
Tops	738 Foote Ave.

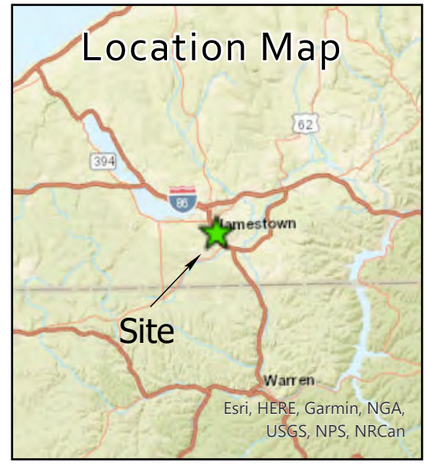


Figure 2
Site Plan

Subject Parcel
Tenants
SSDS Suction Point
SSDS Piping

Monitoring Well
(labeled on map as MW-xx)

Existing
Proposed

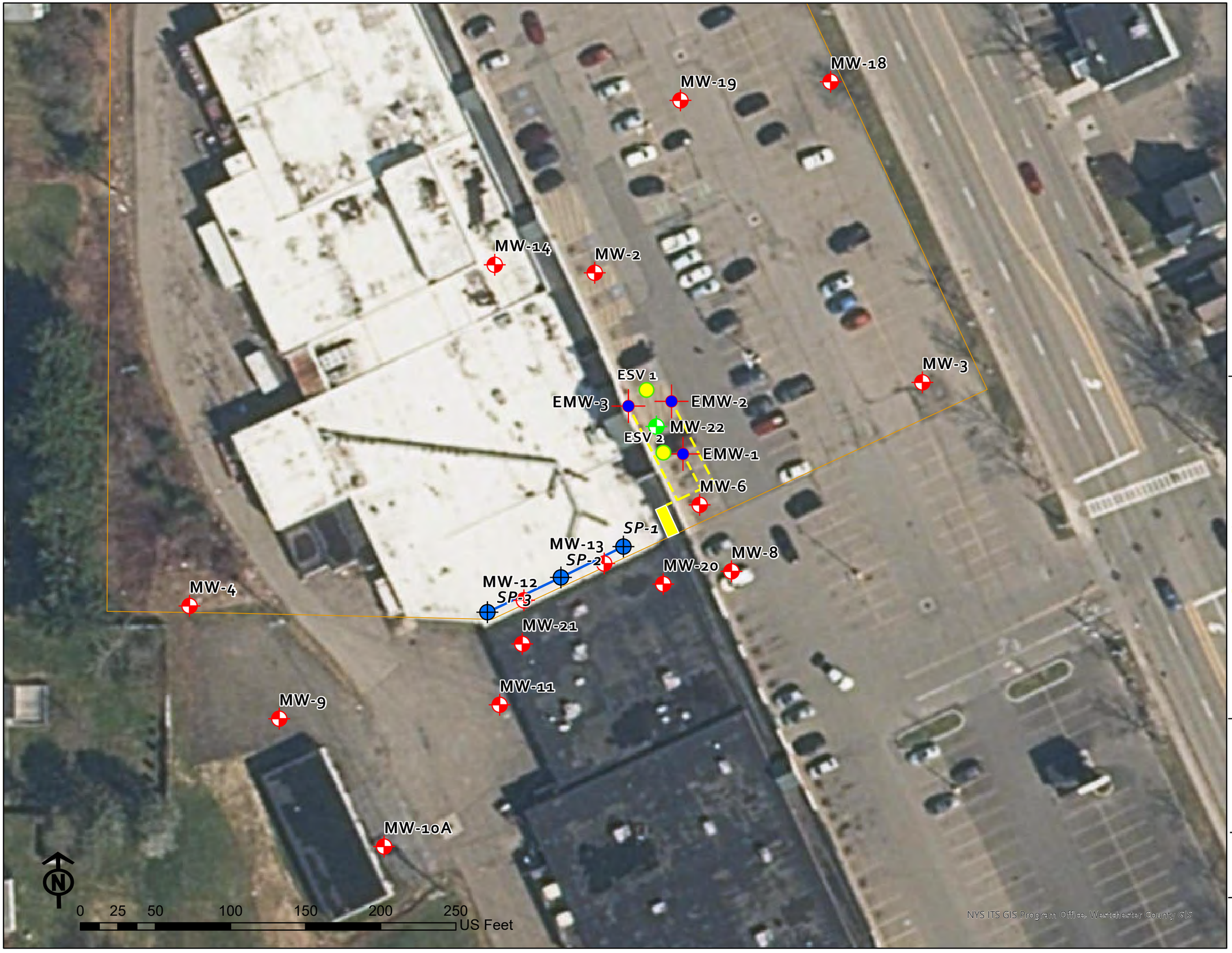
Southside Plaza
704-744 Foote Avenue
Jamestown, NY 14701

USGS 24K Quad:
Jamestown, NY 1986

EBI GIS Date: 4/25/2022

EBI PN: 1221000044

EBI Engineering & Architecture



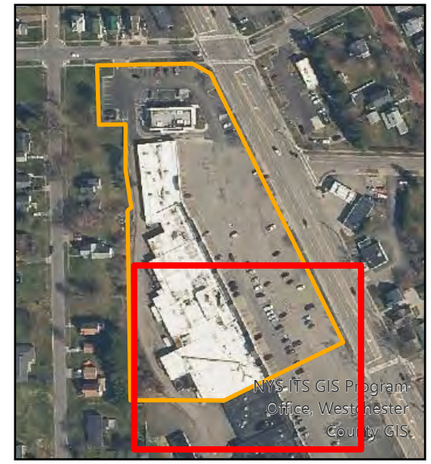


Figure 3
Proposed Pilot Testing Study Area

- Subject Parcel

Monitoring Well
(labeled on map as MW-xx)
- Existing
- Proposed

- Proposed Electrode Well
- Electrical Connection Unit
- Electrical Trenching
- Proposed Soil Vapor Monitoring
- SSDS Suction Point
- SSDS Piping

Southside Plaza
704-744 Foote Avenue
Jamestown, NY 14701

USGS 24K Quad:
Jamestown, NY 1986

EBI GIS Date: 4/25/2022

EBI PN: 1221000044

EBI Engineering & Architecture

APPENDIX B
HEALTH AND SAFETY PLAN

EBI Engineering & Architecture

21 B Street
Burlington, MA 01803
Tel: (781) 273-2500
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www.ebiconsulting.com

SITE-SPECIFIC HEALTH & SAFETY PLAN

FOR ACTIVITIES FOR THE PILOT STUDY WORK PLAN

Project Name

704-744 Foote Avenue
Jamestown, New York, 14701

EBI Project No. 1221000044

May 27, 2022

Prepared for:

Southside Station LLC
31 Sylvan Road
Rochester, New York, 14701

Prepared by:

EBI Engineering PC dba: EBI Engineering & Architecture
21 B STREET
Burlington, MA 01803
(800) 786-2346

EBI Engineering & Architecture

EBI Engineering & Architecture

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May 27, 2022

Rabbi Shlomo Noble
Southside Station LLC
31 Sylvan Road
Rochester, New York

Subject: **Site-Specific Health and Safety Plan –**
For Construction Activities Involving Disturbance of Soil and Groundwater
Southside Plaza Site BCP Site No. C907043
704-744 Foote Avenue
Jamestown, New York, 14701
EBI Project #1221000044

Dear Rabbi Shlomo Noble:

EBI Engineering PC dba: EBI Engineering & Architecture (EBI) is submitting the enclosed Site-Specific Health and Safety Plan (HASP) on behalf of Southside Station LLC for the above referenced Project Site.

The purpose of this HASP is to define and address the potential health and safety hazards that may be involved in the operations to be conducted at the Project Site associated with potentially CVOC and metal impacted soil and groundwater. This HASP defines the requirements and designated protocols to be followed at the Project Site during construction activities that involve the disturbance and handling of soil at the Project Site. The HASP was developed in consideration of current safety standards as defined by EPA/OSHA/NIOSH, health effects and standards for contaminants, and procedures designed to account for the potential for exposure to unknown substances.

This HASP does not include the oversight of the onsite excavation and construction activities or implementation of this HASP by EBI.

If you should have any questions or concerns regarding this submittal, please feel free to contact Christine B Madsen at 862-202-2213.

Sincerely,
EBI CONSULTING

Christine B. Madsen
Project Manager

Edwin M. Jean
Certified Industrial Hygienist
(202) 438-1680

Brian Kilcoyne
Senior Project Manager
(781) 418-2349

BOARD FOR GLOBAL EHS CREDENTIALING INCORPORATED
CERTIFICATE NO. 11512 CP
EXPIRES 12-1-2023
PENNSYLVANIA-1998
EDWIN M. JEAN, CIH

TABLE OF CONTENTS

APPENDIX

1. PURPOSE

This plan provides health and safety guidelines for site activities to protect on-site personnel and visitors from exposure to soil and groundwater potentially contaminated with CVOC and metals during subsurface activities that contact with soil is encountered. The procedures and guidelines herein are based on the best available information at the time of plan preparation. It is the responsibility of all field team members to evaluate the work conditions of this site and, if in doubt about safety or a particular operation, request assistance from the Site Safety & Health Officer. Compliance with this plan is mandatory for all on-site personnel.

It is the designated contractor's policy to implement and enforce specified safety rules for all proposed field projects. If an unsafe or hazardous condition is observed by the field Site Safety & Health Officer or by the Corporate Health and Safety Manager during a site safety inspection, work activities will be suspended immediately until the situation is corrected and/or the appropriate safety equipment is obtained to complete the work properly. This policy shall apply to all contractor employees, subcontractors, and client representatives.

2. INTRODUCTION

The Subject Property (Figure 1) consists of one 5-acre tax parcel identified by Chautauqua County SBL 404.07-8-3. The Subject Property is developed with two structures including a retail strip mall on the western side of the Subject Property and a separate restaurant tenant space north of the strip mall. The buildings are surrounded by an asphalt paved driveway to the west of the building for access, and a small portion of unpaved grassy area at the southwestern corner of the Subject Property. The eastern side of the Subject Property is an asphalt paved parking lot.

The Subject Property is bordered by Cole Avenue to the north, Foote Avenue to the east, a separate strip retail mall and parking lot to the south, and residential homes and backyards to the west.

The separate restaurant building to the north is currently occupied by a McDonald's restaurant (704 Foote Avenue). The strip mall consists of six separate tenant spaces occupied from north to south by: the UPS Store – a shipping supplies store (708 Foote Avenue), Spa Nails – a nail salon (710 Foote Avenue), Dollar Tree – a retail store (716 Foote Avenue), Cellular One – a cellular service and retail store(720 Foote Avenue), KeyBank – a bank (730 Foote Avenue), and TOPS Friendly Markets (TOPS) – a grocery store (738 Foote Avenue)

The Subject Property had been occupied by residential buildings from at least the 1890s to 1955. Between 1955 and 1958 to 1960, a strip mall and a former separate structure north of the strip mall were built at the Subject Property. Two historical dry cleaners, Triangle Cleaners and Anderson Cleaners, occupied a tenant space historically addressed as 736 Foote Avenue from approximately 1956 to at least 1975 in the strip mall building. Two additional dry cleaners, Anderson Cleaner and Whirley-Wash Dry Cleaners, occupied the historical tenant space addressed as 750 Foote Avenue from approximately 1980 to at least 1994.

According to previous reports, there had been some debate as to whether the Whirley-Wash was located on the Subject Property or on the adjacent property to the south. However, a letter dated August 19, 2019 from Mr. Karim Abdulla of Barclay Damon, LLP (representing the southern adjacent property identified as the South Foote Avenue Plaza (SFAP)) submitted to the previous property owner and the NYSDEC documentation that both dry cleaner tenant spaces were historically located on the Subject

Property. There was no evidence in previous reports of underground storage tanks (USTs) usage at the former dry cleaner location.

The former northern building (704 Foote Avenue) had been historically occupied by two former gas stations between approximately the 1950s to the late 1970s. . This building was demolished between 1975 and 1980, and the current building was constructed in 1980 for use as a McDonald's. Two 500-gallon oil USTs and four 3,000-gallon gasoline USTs were known to be at the Subject Property, however no information was identified from the Jamestown Fire Department or the petroleum bulk storage (PBS) registration, nor were tank closure reports identified.

Previous environmental investigations and reports have been completed at the Subject Property between 2007 and 2019 to assess potential environmental issues based on the historic use of two tenant spaces for dry cleaning operations. The investigations identified the presence of soils impacted by chlorinated volatile organic compounds (CVOCs) at concentrations above the 9 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs) and groundwater impacted by CVOCs above the 1.1.1. TOGS Groundwater Quality Standards/ Guidance Values (GWQS). The highest concentrations of CVOCs in soil and groundwater were observed adjacent to the former Whirley-Wash location (750 Foote Avenue). Elevated concentrations of CVOCs were identified in sub-slab vapor samples collected from this area. A sub-slab depressurization system (SSDS) was installed in February 2013 at the location of the former Whirley-Wash, within the existing TOPS. Indoor air results collected in 2013 from TOPS and the neighboring property to the south were below the NYSDOH action levels, confirming that the SSDS is effectively mitigating CVOC concentrations in the sub-slab vapor of these buildings.

Based on the results of the previous investigations, and the Draft Remedial Investigation completed in April 2020, the constituents of concern of the Subject Property which need to be addressed via a remedial strategy include:

- Nickel identified in one surface soil sample at the southwestern corner of the Subject Property
- PCE identified in the subsurface soil
- PCE and TCE identified in the groundwater at the Subject Property

Contaminants of Concern Detected in the Soil and Groundwater Samples	
VOCs	**Metals**
Cis-1,2-dichloroethene PCE TCE	Barium Magnesium Sodium Nickel

This Site-Specific Health & Safety Plan is prepared for the conductance of work activities involving the construction activities that may come in contact with soil and groundwater at the Project Site. These work activities are considered restricted and will require conformance with, and incorporation of the methods and procedures incorporated herein.

This Health & Safety Plan presents various work practices and requirements for the protection of workers conducting work activities during disturbance of potentially contaminated soil and groundwater and for protection of the surrounding area from potential airborne hazards as a result of the work. These areas of work are defined as Exclusion Zones and shall be understood as locations where soil and groundwater disturbance is being conducted, where spoils are exposed and coincide with areas where sub-strata soil contamination is present or suspected of being present and the potential for occupational exposure exists in excess of known regulatory limits. In conjunction with the Exclusion Zone, a Contamination Reduction Zone and a Support Zone will be established.

The work practices and requirements as described in the Health & Safety Plan shall be understood as the minimum requirements and nothing shall be understood as to limit any additional controls or implementation of more stringent work practices. All work shall be in strict accordance with this document, Site safety requirements and with current applicable federal, state and local laws, ordinances, rules, regulations, orders and codes including guidelines and regulations of the U.S. Environmental Protection Agency (EPA), and U.S. Department of Labor (DOL), Occupational Safety and Health Administration (OSHA), National Institute of Occupational Safety and Health (NIOSH), State of New Jersey and any other applicable state or local regulations which may apply.

The Health & Safety Plan does not include specific detail with regard to operational procedures for specific work tasks. The intent is to describe the health and safety considerations, which each employer will need to consider in the conductance of their work and in development of their individual work plan. All work shall comply with OSHA regulations as delineated in Title 29 of the Code of Federal Regulations Part 1926 entitled Safety and Health Regulations for Construction. Activities conducted shall conform to Subpart D - Occupational Health and Environmental Control 1926.65 entitled Hazardous Waste Operations and Emergency Response.

This Health & Safety Plan is intended to be a flexible document and may be updated based on continual inspection activities of observed conditions, changes in the anticipated work and additional analytical data.

3. APPLICABILITY

This Site-Specific Health & Safety Plan is applicable to the following work tasks at the Site:

- Disturbance of ground surfaces for access where contact with contaminated soil and groundwater may exist
- Subsurface sample collection
- Handling/containerizing of sample material
- Movement from and between the Exclusion Zone, Contamination Reduction Zone and Support Zone
- Decontamination of vehicles, tools and equipment

Implementation of the Health & Safety Plan is a requirement of the Site Manager. The Site Manager is

responsible for ensuring the compliance with the Health & Safety Plan and coordination of work with the others at the Site.

Compliance with all applicable federal, state and local regulations pertaining to work practices, hauling, disposal and protection of workers, visitors to the site and persons occupying areas adjacent to the Project Site is mandatory by the Site Manager. Nothing contained herein shall relieve any Site Manager of regulatory requirements.

The term Contractor as utilized within this Document shall be understood as any Contractor, Subcontractor, Sub-subcontractor, vendor, supplier, person or entity accessing or conducting work at the Site. This term shall also include the Site Manager as defined herein.

4. SITE DESCRIPTION

The Site at which the work is to be conducted is: **704-744 Foote Avenue**
Jamestown, New York, 14701

The specific areas of work consist of the grade locations as identified in the document below.

TITLE	DATE
Pilot Study Work Plan: 704-744 Foote Avenue Jamestown, New York, 14701 Prepared by EBI Engineering PC dba: EBI Engineering & Architecture EBI Project #1221000044	May 27, 2022

Specific locations of the below grade areas of work can be observed in this document. It is noted that at the time of this writing, adjustments and revisions will be incorporated in the Site plans. Reference, including as-built notes, must be made utilizing the most current drawings to be maintained on site during the work.

5. ORGANIZATIONAL STRUCTURE

The Engineer of Record for this project is: Dr. Anthony E. Farmand, PhD, PE
Engineer-of-Record

The Engineer of Record is ultimately responsible for the successful execution of the project by the Site Manager, and Site Supervisor, and the Site Safety and Health Officer. The Engineer of Record is responsible that all work onsite is completed in accordance with the Pilot Study Work Plan and bears the ultimate responsibility for the proper implementation of the Health & Safety Plan.

The Site Manager for this project is: Brian Kilcoyne
Designated site manager

The Site Manager has the responsibility and authority to direct all work operations and schedules. The Site Manager also coordinates safety and health functions with the Site Safety and Health Officer, has the authority to oversee the conductance of the Site Safety and Health Officer.

The Site Manager shall assure the availability, use, proper maintenance and decontamination of personal protective equipment and other safety or health equipment including site communication devices, provisions for immediate response to all medical emergencies involving work of their trades, and shall ensure that Contractors working within or adjacent to the established zones as defined herein are fully knowledgeable of the HASP and shall strictly adhere to all precautions necessary for the safety and health of employees and conduct all aspects of the work in accordance with the provisions herein, including corrective action.

The Site Supervisor (Competent Person) is: Christine B Madsen
Designated site supervisor

The Site Supervisor is responsible for field operations and reports to the Site Manager. The Site Supervisor ensures the implementation of the HASP requirements and work procedures, including; execution of individual work plan(s). The Site Supervisor is also responsible for coordination of the work with the Site Safety and Health Officer. The Site Supervisor or a designated representative, shall be at the Site during all work activities. For the purpose of the Health & Safety Plan the Site Supervisor shall also be the designated Competent Person as defined by OSHA.

The Site Safety and Health Officer is: Christine B Madsen
Designated Site Safety Officer

The Site Safety and Health Officer is responsible for review of the HASP, individual contractor submitted work plans and to verify compliance during the project. The Site Safety and Health Officer shall be readily accessible to the Site Manager during the work and has the authority to halt the work if unsafe conditions are identified.

The Site Safety and Health Officer is responsible for managing the safety and health functions at the Site, serves as the point of contact for safety and health matters, ensures the conductance of site monitoring, worker training, effective selection and use of Personal Protective Equipment, assesses site conditions for unsafe acts and conditions and coordinates with the emergency response personnel and the Industrial Hygienist.

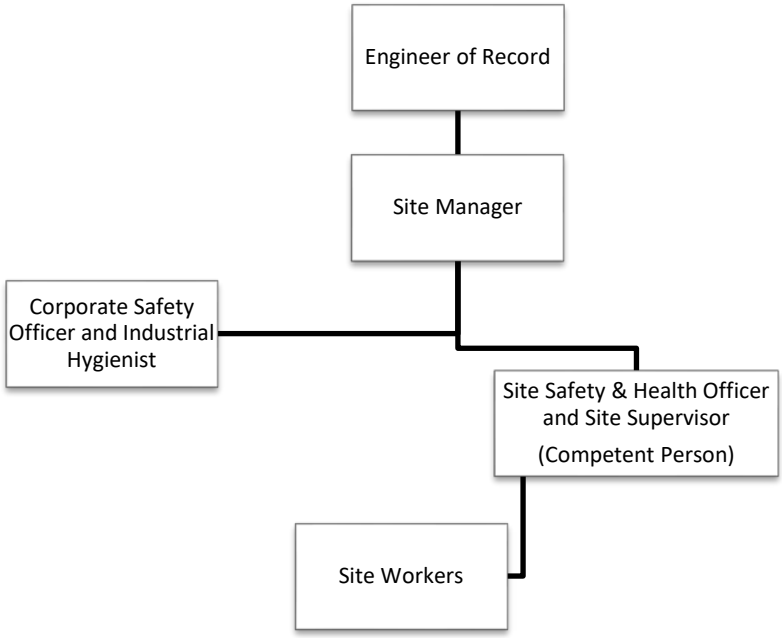
The Industrial Hygienist and Corporate Safety Officer is: Edwin M. Jean, EBI
Designated Corporate Safety Officer abd
Designated Certified Industrial Hygienist

The Corporate Safety Officer is responsible for the overall health and safety on the project and coordinates directly with the Site Safety and Health Officer. The Industrial Hygienist is responsible for preparation of the Health & Safety Plan.

Site Worker

The Site Worker is responsible to the Site Supervisor and are those Contractor employees, representatives and authorized visitors entering the Exclusion Zone and/or Contaminate Reduction Zone. Site Workers are responsible for compliance with the Health & Safety Plan, using proper Personal Protection Equipment and reporting unsafe acts and conditions. Site Worker shall comply with the work safety/health instructions of the Site Manager, Site Supervisor, Site Safety and Health Officer, and/or Industrial Hygienist.

The organizational structure for the Site is reiterated in the chart below.



6. WORK PLAN SUMMARY (*excerpt*)

The proposed work activities are based on the construction activities outlined in the Lease Exhibit. Exposure to soil and groundwater potentially impacted with VOCs and metals is anticipated during these activities.

The designated drilling subcontractor will contact the appropriate state agencies and local and municipal utilities in order to obtain utility clearance prior to commencing excavation activities. Unless otherwise agreed, the Client shall provide or arrange for the contractor to be provided with locations of buried utilities and other underground structures in areas of subsurface exploration. The on-site representatives will also confirm the location of underground utilities to the contractor. In addition, the contractor will retain a private utility locator contractor to confirm the locations of the underground utilities.

7. HAZARD OVERVIEW & ANALYSIS

The current environmental hazard associated with construction activities at the Project Site is exposure to soil impacted with petroleum hydrocarbons and fill material. Access to the subsurface may potentially expose workers to this contaminant through skin contact and inhalation exposure. Safety hazards also exist with the work of this project regarding heavy equipment, noise producing equipment, vehicle movement, etc.

Safety measures and equipment operational parameters are to be in accordance with applicable OSHA regulations. A copy of each contractor's site-specific health and safety plan and programs must be available at the Site and a copy provided for reference. Submission of the contractor's work plan along with their applicable safety plans and programs is a requirement.

Note that it is each contractor's responsibility for compliance with regulatory requirements and to conduct work in a safe and responsible manner. Submission of contractor plans and programs shall not constitute a review or approval of such plans and programs.

General physical hazards associated with operating and working in the vicinity of heavy equipment will be present at the site (i.e. excavation, dewatering, and decontaminating equipment). These hazards will be minimized by allowing only trained, qualified, and licensed personnel to operate the heavy machinery. In addition, only trained personal with proper PPE are to be permitted access to areas where heavy machinery will be operated. Underground utility hazards will also be present at the site. These hazards will be minimized by contacting New York Call 811 and facility personnel to identify underground product, electrical, natural gas and sewer lines etc. prior to the beginning of construction. In the event that previously unidentified lines are discovered, work will be stopped immediately until proper identification can be made. Safe work practices in compliance with OSHA standards and this document will be used at all times.

CHEMICAL HAZARD ANALYSIS

Volatile Organic Compounds (VOCs)

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. VOCs are emitted by a wide array of products numbering in the thousands. Examples include: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions.

Health effects include eye, nose, and throat irritation; headaches, loss of coordination, nausea; damage to liver, kidney, and central nervous system. Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans. Key signs or symptoms associated with exposure to VOCs include conjunctival irritation, nose and throat discomfort, headache, allergic skin reaction, dyspnea, declines in serum cholinesterase levels, nausea, emesis, epistaxis, fatigue, and dizziness.

Metals

Heavy or toxic metals are trace metals with a density at least five times that of water. As such, they are stable elements (meaning they cannot be metabolized by the body) and bio-accumulative (passed up the food chain to humans). Heavy metals have no function in the body and can be highly toxic.

Once liberated into the environment through the air, drinking water, food, or countless human-made chemicals and products, heavy metals are taken into the body via inhalation, ingestion, and skin absorption. Studies confirm that heavy metals can directly influence behavior by impairing mental and neurological function, influencing neurotransmitter production and utilization, and altering numerous metabolic body processes. Systems in which toxic metal elements can induce impairment and dysfunction include the blood and cardiovascular, detoxification pathways (colon, liver, kidneys, skin), endocrine (hormonal), energy production pathways, enzymatic, gastrointestinal, immune, nervous (central and peripheral), reproductive, and urinary.

HAZARD CONTROL/FIRST AID MEASURES

Inhalation: Wear respiratory protection if required, based on ambient concentrations. See the Community Air Mointoring Program Requirements (CAMP) in the 2022 Pilot Study Work Plan (PSWP) for action levels. Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Move victim to fresh air. Call a Poison Center or doctor.

Skin Contact: Avoid direct contact. Wear petroleum-resistant gloves (based on manufacturer's recommendations) and chemical protective clothing (if necessary). If clothing becomes contaminated, quickly remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately flush with lukewarm, gently flowing water for 15-20 minutes. Call a Poison Centre or doctor. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely. Double bag, seal, label and leave contaminated clothing, shoes and leather goods at the scene and hold for proper disposal determination.

Eye Contact: Avoid direct contact. Wear chemical splash goggles when performing tasks that may result in eye contact with groundwater or soil. If eye contact occurs, immediately flush the contaminated eye(s)

with lukewarm, gently flowing water for 15 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay flushing or attempt to remove the lens. If irritation or pain persists, see a doctor.

Ingestion: Have victim rinse mouth with water. Immediately call the Poison Center or a doctor.

Overhead Protection: A hard hat should be worn during all drilling activities, and precautions should be made to ensure no overhead obstructions are present.

JOB HAZARD ANALYSIS

The following table lists the specific Job Hazard Analysis for identified work activities in potentially contaminated soil and groundwater and the associated minimum safety rules for proper control.

JOB HAZARD ANALYSIS		
AREA & TYPE OF WORK	**HAZARD***	**CONTROLS****
Access atop the site where suspect soils exist including setup of Exclusion Zone, Contamination Reduction Zone and Support Area	Generation of airborne dusts Skin contact with contaminated soils	• Set-up designated "decontamination station" on undisturbed soil for donning and doffing PPE • Utilize Level D PPE for subsequent work to include petroleum-resistant gloves • Demark site areas with visual barriers, signs or similar • Maintain soils damp to minimize dusting • Conduct work in such a manner as to minimize dust dispersion • Consider temporary ground cover on walkways and common access (e.g. weighted plastic sheeting)
	General	• Mark out and protect all utilities • Safety glasses, work boot, long pants and sleeved shirts shall be donned at all times
Groundwater well drilling and Sample Collection	Skin contact with contaminated soils	• Support Area, Contamination Reduction Zone and Exclusion Zone to be established • Level D PPE to include petroleum resistant disposable coveralls and petroleum-resistant gloves and reflective vests • Avoid contact with bulk suspect debris and liquid wastes • Promptly package sample material • Cleaning of sample spoons to be conducted while donning petroleum-resistant gloves • Follow proper personal hygiene practices (e.g. washing hands, arms and face prior to eating, drinking and smoking) • Equipment operators must be qualified to operate specific equipment

JOB HAZARD ANALYSIS		
AREA & TYPE OF WORK	**HAZARD***	**CONTROLS****
	Loading and transfer Tool/equipment handling Potential injury from heavy equipment Noise exposure from heavy equipment/dewatering pump	• Non-essential workers must stay >20 feet beyond equipment swing or movement areas • Utilize proper lifting techniques • Operation of equipment in accordance with manufactures instructions and contractors safety plan • All equipment to have back-up alarms • Confirm proper operation of "kill" switches • Approach equipment in view of operator • Designate equipment spotter • Safety glasses, work boot, long pants, reflective vests, and sleeved shirts shall be donned at all times • Utilize hearing protection
Decontamination of Equipment	Generation of airborne dusts Contact with contaminated soils	• Support Area, Contamination Reduction Zone and Exclusion Zone to be established • Level D PPE to include petroleum resistant disposable coveralls and gloves • Wet dirt to prevent dust dispersion • Spoils and used PPE to be properly packaged for disposal
	Heat stress Liquid injection Noise from water jetting/washing Slipping	• Appropriate clothing to be donned • Work rest/regime based on ambient conditions • Encourage adequate fluid intake • Utilize hearing protection • Additional PPE consisting of full rain suit, rubber gloves and face shield (in addition to safety glasses) • Non-slip footwear/rubber boots shall be worn • Maintain footing surfaces free of water accumulations
* LIMITED TO SPECIFIC CONSTITUENTS AS STATED IN THE HASP. NOT ALL HAZARDS ARE DEPICTED ** ALL WORK ACTIVITIES SHALL CONFORM TO THE SITE REQUIREMENTS AND INCLUDE AT A MINIMUM; SAFETY GLASSES, WORK BOOTS, GLOVES, LONG PANTS AND SLEEVED SHIRTS.		

8. TRAINING & CERTIFICATION

The Site Manager shall ensure that all Site Workers, visitors, employees, specialty trades have all applicable licenses, certifications and training as required and that such personnel entering the Support Zone and/or the Contamination Reduction Zone site that are responsible for implementation of any work activities thereof are familiar with this Health & Safety Plan.

Site-specific training shall consist of a pre-entry briefing to all contractors, employees, visitors, and specialty trades before beginning their work assignment in the Exclusion Zone as to the potential hazards to be encountered. Training shall be by a knowledgeable person and a class roster sheet prepared for each Training session. Topics will include:

- Availability of this document.
- Communication protocols.
- General hazards attributable to subsurface sampling activities and specific hazards in the areas of work, including those attributable to the environmental hazards present. During the work, personnel must observe each other for signs of toxic exposure and shall be cautioned to inform each other of non-visual effects of toxic exposure.
- Heat Stress Awareness. Site Workers may be subject to heat injuries due to use of personal protective equipment and physical exertion; care should be exercised even in colder months. Any person who experiences signs of heat related distress will be instructed to stop work immediately. Medical attention will be sought if there is any doubt that prompt and full recovery will result without it. Symptoms of heat related distress include muscle cramps, pale and clammy or hot, dry and flushed skin, confusion, disorientation and incoherent speech, nausea and/or convulsions.
- Hazard communication, with specific hazard information training addressing skin and inhalation exposure to petroleum-containing compounds.
- Selection, use, testing and care of the personal and respiratory protective equipment to be worn, along with the limitations of protection provided by such equipment.
- Decontamination procedures for personnel, their personal protective equipment and other equipment used on the project.
- Routes of access, egress, evacuation, emergency alarm systems, and emergency response procedures including methods to obtain emergency assistance and medical attention.

Additional training requirements include:

Competent Person - Training course of at least 40 hours meeting the requirements of the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard 29 CFR 1910.120(e) within the last 12 months and annual refresher training as applicable.

Each contractor providing Site Workers shall provide the following certifications:

Personnel who are required to work in areas where the potential for toxic exposure exists shall complete training and will have relevant site experience conforming to the requirements of HAZWOPER 29 CFR 1926.65 and 29 CFR 1910.120. The required 40-hour course (and 24-hours of "on the job" training) provides training on procedures for working at hazardous waste sites. Personnel are also required to have received 8 hours of refresher training annually thereafter. In addition, all supervisory personnel (e.g., the SSHO, project superintendent) are required to have 8 hours of additional specialized training for managing hazardous waste operations. Training required by OSHA contaminant specific regulations (e.g., lead, arsenic) must be provided as applicable.

Each worker entering the Exclusion Zone and/or Contamination Reduction Zone must provide documentation of having attended a minimum 24-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) course. Each worker must provide documentation of attending an 8-hour refresher course within the last 12 months of the completion of the project.

- The Site Supervisor/Manager and Site Safety Officer must provide documentation of having attended a minimum 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) course. Each worker must provide documentation of attending an 8-hour refresher course within the last 12 months of completion of the project.

- Health and Safety Plan Compliance Certification - An officer of each contracted company providing Site Workers which by conductance of the work activity will enter into the Exclusion Zone or Contamination Reduction Zone shall read and complete the Health and Safety Plan Compliance Certification in the Appendix. This form must be submitted with the company specific plans and programs applicable for the project.

- Certificate of Workers Acknowledgement - Each Site Worker must also submit a completed Certificate of Worker's Acknowledgement prior to entry into the Exclusion Zone or Contamination Reduction Zone.

Note: The Site Supervisor is required to convene a daily toolbox safety for each day of work based on the anticipated tasks to be conducted that day. An attendance roster is to be maintained and submitted to the Site Manager.

9. PERSONAL PROTECTIVE EQUIPMENT & ENGINEERING CONTROLS

Minimum Personal Protective Equipment and engineering controls to be used shall be in accordance with the "Controls" column in the Hazard Analysis Table and as listed herein.

All personnel at the site whom will enter into the Exclusion Zone or Contamination Reduction Zone shall have the minimum general Personal Protective Equipment listed below. Use of gloves, work boots, and eye protection is required at all times. Safety glasses shall be donned in all areas of the Site, except for authorized areas used as offices, restrooms, lunchrooms, locker rooms, showers, and changing rooms. Hard hats shall be required when overhead hazards exist. Hard hats and eye protection devices and any other Personal Protective Equipment deemed contaminated shall be left in a designated area or decontaminated prior to leaving the Exclusion Zone.

General Site requirement Personal Protective Equipment:

- Safety glasses with fixed side shields
- Work boots with steel shank and toe (min. 6" height with distinct heal)
- Long pants and sleeved shirt
- Gauntlet cuff gloves
- Hardhat
- Hearing protection – available
- Safety vests when working around moving equipment

Exclusion Zone Personal Protective Equipment during excavation and dewatering activities:

- General Site requirement items
- Disposable foot coverings
- Disposable petroleum resistant coveralls
- Petroleum-resistant gloves (Viton, nitrile, NBR or PVA)

Contamination Reduction Zone during decontamination activities:

- All items General Site requirement items
- Non-slip rubber footwear
- Disposable coveralls (Tychem)
- Rain suit suitable for protection from water spray
- Heavy rubber gloves
- Face shied
- Body Coverings

Body Coverings

Disposable outer garments shall consist of full body coveralls, foot coverings, head covers and gloves. Protective clothing that is ripped or torn shall be repaired or replaced immediately. Disposable protective clothing shall be discarded and disposed of properly every time the wearer exits from the exclusion zone.

Heat Stress – Wearing personal protective equipment greatly reduces the body's ability to dissipate heat. Chemical protective suits, gloves and boot covers do not "breath" and do not allow the body to cool by evaporating perspiration. Worker will be trained on the signed and symptoms of heat stress:

- Heat Rash may result from continuous exposure to hot and humid air.
- Heat cramps are caused by heavy sweating and inadequate electrolyte replacement. Signs and symptoms include muscle spasms and pain in the hands, feet and abdomen. Heat cramps are an early warning sign of serious injury.
- Heat Exhaustion occurs from increased stress on the body organs, including inadequate blood circulation due to dehydration. Signs and symptoms include:
    - Pale, cool or moist skin;
    - Heavy sweating;
    - Dizziness, fainting and nausea.
- Heat Stroke is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical, life-threatening levels. Immediate action must be taken to cool

the body before serious injury or death occurs. Competent medical help must be obtained. Signs and symptoms include:

- Red, hot and unusually dry skin;
- Lack of, or reduced, perspiration;
- Dizziness and confusion;
- Strong, rapid pulse.

Workers should drink 16 ounces of liquid (preferably water or dilute drinks) before beginning work. Workers should drink a cup or two of water every 15 to 20 minutes and at each break for a total of 1 to 1.6 gallons of water per day.

Workers wearing level D/C protection with Tyvek coveralls will be provided a work-rest cycle that allow for monitoring employees for the signs and symptoms of heat stress. The schedule will be modified as the temperatures fluctuate. The following offers a starting guideline for employees who are acclimated to wearing protective suits in hot weather:

Temperature	**15 minute break**
72 to 77	Every 135 minutes
78 to 82	Every 105 minutes
83 to 87	Every 75 minutes
88 to 90	Every 45 minutes
90 or above	Every 30 minutes

Temporary shelters will be erected if natural shade is not available for employee to rest. Cool water and dilute sport drinks will be provided at all times.

Engineering Controls

Specific engineering controls shall be incorporated in the work activities at the Site to minimize the potential for contact with groundwater. These controls include:

- Site access restrictions as provide under Site Control
- Establishing dedicated access routes at the Site
- Wetting of soils to minimize dust dispersion
- Use of a Contamination Reduction Zone for vehicles and equipment
- Collection of wash debris and liquids from the Contamination Reduction Zone
- Use of a decontamination area for workers exiting the Exclusion Zone and Contamination Reduction Zone

Respiratory Protection

Based on the open-air environment and implementation of engineering controls to minimize dusting, mandatory use of respiratory protection is not anticipated. Where confirmed contaminated soils, gases or vapors are identified and of which concentrations are unknown and likely to present an elevated occupational exposure, respiratory protection shall be donned.

Where occupational and stationary monitoring demonstrates concentrations below the applicable occupational exposure limits on a consistent basis (aka negative exposure assessment) and the area is not considered a regulated area in accordance with OSHA regulations, use of respirators will not be mandatory. Where exposure concentrations have exceeded applicable occupational exposure limits, thereafter, at no time shall a respirator of lesser protection be allowed unless a full eight-hour time-weighted average (TWA) exposure assessment has been conducted, representative of "worst case" situations and reviewed by the Site Manager.

Personnel who wear or may wear respiratory protection must be provided respirators in accordance with 29 CFR 1910.134. The regulation requires that an individual's ability to wear respiratory protection be medically certified before he/she conducts designated duties and that the user be trained and fit tested with the model and size of respirator to be worn.

No excessive facial hair that interferes with the effectiveness of a respirator will be permitted on personnel required to wear respiratory protection equipment. The respirator must seal against the face so that the wearer receives air only through the air purifying cartridges or air supply system attached to the respirator. It is the responsibility of each employer to ensure that fit testing is conducted prior to respirator use to ensure the wearer obtains a proper seal. Respirator filters/cartridges must be changed as required or needed based on OSHA standards or existing exposure conditions.

10. MEDICAL SURVEILLANCE

Medical clearance will be required for personnel required to wear respirators. Certification of medical clearance will be a requirement of the Certificate of Worker's Acknowledgment.

Based on specific environmental contaminates which may be identified at the Site, medical and biological surveillance is not anticipated for this project.

11. COMMUNITY AIR MONITORING PLAN

This dust, organic vapor and nuisance odor control plan was developed in accordance with the NYSDOH Generic CAMP and Occupational Safety and Health Administration (OSHA) standards for construction (29 Code of Federal Regulations [CFR] 1926).

In accordance with the Construction Health and Safety Plan (See Section 2.5), the community Air Monitoring Plan (CAMP) will be implemented during all ground intrusive activities, which during this scope of the PSWP, will consist of installation of groundwater monitoring wells, and trenching between the wells and the electrical connection at the front of the tenant space. The CAMP will consist of an upwind, downwind, and work zone air monitoring system, consisting of real-time monitoring of volatile organic compounds (VOCs) and particulates.

NYSDEC and NYSDOH will be notified of all odor and vapor events and of all other complaints about the project. Implementation of odor and vapor controls, including halting work, will be the responsibility

of the Field Manager. Implementation of odor and vapor controls will be the responsibility of the Contractor.

NYSDEC and NYSDOH will be notified within 24-hours in the event of any exceedances of the CAMP action levels that require corrective action. These corrective actions taken will be reported to the NYSDEC and NYSDOH within 24-hours and also included in the field daily reports.

AIR MONITORING SETUP AND ACTION LEVELS

A direct reading photoionization detector (PID), equipped with an 11.7 eV lamp, will be utilized to screen at the point of soil penetration as well as excavated soil samples. PID readings will be logged (date, location and measurement) in conjunction with sampling activities for subsequent soil analysis.

Total VOCs will be monitored with a hand-held PID. If the action level is exceeded and adequate ventilation cannot be provided, work will cease and the potential affected portion of the work area will be evacuated until adequate mechanical ventilation can be implemented to control the hazard. The following actions will be taken based on total VOC levels measured:

- If total VOC levels exceed 5 ppm above background for the 15-minute average at the work zone, work will be temporarily halted and monitoring continued. If levels readily decrease (per instantaneous readings) below 5 ppm above background, work will resume with continued monitoring.
- If total VOC levels at work zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work will resume provided that the total VOC level is below 5 ppm above background for the 15-minute average within the work zone.

If the total VOC level is above 25 ppm in the work zone, excavation will be stopped and a re-evaluation of activities will be initiated. The source of vapors will be identified, corrective actions will be taken to abate emissions, and monitoring will continue. After these steps, work will resume provided that the total VOC level is below 5 ppm above background for the 15-minute average within the work zone.

Dust emissions will be monitored and controlled as identified through the collection of dust data collected through the air monitoring stations employed as per the CAMP. The following actions will be taken based on visual observations and measured dust levels using a quantitative Dust Monitor:

- If the work zone particulate level is 100 µg/m³ greater than background for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression must be employed. Work may continue with dust suppression techniques provided that work zone particulate levels do not exceed 150 µg/m³ above the background level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, work zone particulate levels or the particulate levels measured at the downgradient air monitoring station occurring are greater than 150 µg/m³ above the background level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the work zone particulate concentration to within 150 µg/m³ of the background level and in preventing visible dust migration.

Monitoring as described herein does not relieve any contractor from the requirements of OSHA

regulations including employee exposure monitoring. However, copies of monitoring results will be made available on the site for contractors use.

Personal Exposure Monitoring *(to be conducted as warranted)*

12. SITE CONTROL

Site control methods shall be utilized to reduce the potential exposure to CVOC and metal impacted soil and groundwater from the Exclusion Zone. These methods are also designed to identify and isolate the immediate area of work and to minimize unauthorized entry into the Exclusion Zone or Contamination Reduction Zone. EBI understands that a diesel restriction has been implemented for the Project Site.

Security at the Site shall be maintained by the Site Safety and Health Officer during both working and non-working hours. The Site Safety and Health Officer shall maintain an entry log to the site through the use of on-site security personnel. The Site Manager shall maintain an entry/work log of all personnel who enter the areas of work known as the Exclusion Zone and Contamination Reduction Zone.

Attendance at all scheduled and impromptu job meetings as required in maintaining a safe work place and communication pertaining to the HASP is a requirement.

Post all documents and signage required by federal, state, local regulations and ordinances (i.e. Department of Labor forms, building permits, etc.) for the work.

Post the key Project and emergency medical response telephone numbers at the site office/staging area. This list shall include the location of the nearest telephone and the nearest public telephone outside the general area and directions to the nearest hospital.

Post all documents and signage required for the Exclusion Zone including but not limited to:

- Warning Signs as required by OSHA Regulations.

The areas of work at the Site are divided into three major zones as described below. These zones are based on the potential for exposure to contaminated soil during the work and may be adjusted as necessary to protect personnel and maintain clean areas.

Exclusion Zone - This zone shall be designated as the disturbed soil area at the Site and includes open stockpiled soils and where bulk debris has accumulated. The Exclusion Zone shall be maintained until all spoils are packaged, excavations are backfilled and capping has been conducted. The size of the exclusion zone may be adjusted as the work progresses across the Site. The Exclusion Zone should have a minimum buffer of 20 feet from any work activity.

Equipment exiting the Exclusion Zone shall proceed directly to the Contaminate Reduction Zone. Prior to leaving the Exclusion Zone, any bulk debris shall be knocked off so as not to trail from the Exclusion Zone. Any fallen debris during transit shall be promptly collected and packaged. The equipment shall be deemed contaminated until completion of cleaning in the Contaminate Reduction Zone.

While working in the Exclusion Zone, Site Workers shall work in pairs such that visual contact can be maintained, workers can observed one another for signs of stress and summon assistance in the event of an emergency.

Contamination Reduction Zone - This zone is established for the decontamination of equipment and collection of associated wash water and waste. The zone shall be equipped with water jetting equipment along with water collection devices. This zone shall be maintained free of visible accumulations of debris and free liquid at all times.
Support Zone - This zone is designated as non-contaminated and located beyond the outer boundary of

the Contamination Reduction Zone and Exclusion Zone. Administrative, clerical and other support functions are based in the Support Zone.

13. DECONTAMINATION

Site Workers leaving the Exclusion Zone and/or Contamination Reduction Zone shall be thoroughly decontaminated. All respirator filters, protective clothing and decontamination waste shall be disposed of properly. Site workers will be informed as to the importance of adhering to proper hygiene procedures prior to leaving Exclusion/Contamination Reduction Zone to eat, drink, or smoke.

- A decontamination station shall be positioned at the perimeter of the Exclusion Zone and the contamination Reduction Zone. The decontamination station shall be equipped with potable water soap, disposal towels and bags for waste. All Site Workers leaving the Exclusion Zone and/or Contamination Reduction Zone shall pass through the decontamination station.

- Site Workers exiting the Exclusion Zone or Contamination Reduction Zone shall proceed to the designated wash area/decontamination station. Before leaving the Exclusion Zone and/or Contamination Reduction Zone, remove all gross contamination and debris.

- Prior to entering the decontamination station, disposable coveralls and boots are to be removed and placed in designated waste bags for disposal.

- Within the decontamination station Site Workers shall cleanse all exposed skin surfaces with soap and water. Hands and face must be thoroughly washed after exiting the Exclusion Zone and/or Contamination Reduction Zone and before eating, drinking, or any other activity.

- Eating, drinking, smoking, gum or tobacco chewing is not permitted in the Exclusion Zone or Contamination Reduction Zone to do any of the above; the decontamination sequence must be completed.

Equipment, storage containers and similar used to excavate, move or otherwise contact contaminated soil shall also be decontaminated prior to removal from the Exclusion Zone. All tailings and debris generated during decontamination shall be collected for disposal. Upon completion of each shifts work the decontamination station and Contamination Reduction Zone will be cleaned.

Soil sampling may be conducted in order to characterize materials for proper disposal. The following additional decontamination procedures are applicable handling of soil samples and sampling equipment:

- During any soil sample collection activity, each soil sample will be handled using a new pair of disposable latex gloves to minimize the potential for cross contamination and protect the investigator from possible exposure to contaminants.

- All equipment coming into contact with the samples will be decontaminated prior to initiation of sampling activities and between each sample collection. The decontamination procedure will consist of washing the sampling equipment in a detergent wash followed by a potable water rinse and a distilled water rinse.

All excavated soils and waste materials shall be placed in designated areas as approved by the Site Manager. The Site Manager shall ensure used Personal Protective Equipment, etc. are not scattered about and that trash and scrap materials are immediately and properly packaged.

14. WASTE TRANSPORTATION AND DISPOSAL

Where a significant quantity of soil waste is generated, waste materials will be containerized until determination of representative contents based on the sampling to be conducted. Whereas testing demonstrates the excavated soil to be considered an EPA hazardous waste, proper packaging, transport and disposal is required. Waste materials shall be delivered directly to the accepting landfill or licensed transfer facility. The contractor conducting work activities will be responsible for packaging and proper disposal requirements.

15. EMERGENCY RESPONSE

Emergency response may be required during the work. Specific procedures shall adhere to the Site Manager's established plan and include the following:

- Contingency Plan for:
    - o Vehicular Accident
    - o Equipment malfunction (severe)
    - o Pipe or other below grade utility impact
- Maintaining adequate exit routes from the Exclusion Zone in the event of emergency and a safe rally point to ensure all personnel area accounted for.

Emergency medical response telephone numbers are as follows:

Emergency Medical Response Telephone Nos.	
Agency	**Telephone Number**
Fire Department	911
Police Department	911
Ambulance	911
Local Hospital: UPMC Chautauqua Emergency Department, 207 Foote Ave Jamestown, NY, 14701	(716) 664-8120
Poison Control Center	(800) 382-9097
EPA Spill Hotline	(800) 424-8802
Utility Locator: New York 811	(800) 272-4480

Should someone be transported to a hospital or doctor, a copy of this document must accompany them.

NECESSARY EMERGENCY PROCEDURES SHALL TAKE PRIORITY OVER ALL OTHER REQUIREMENTS OF THIS DOCUMENT.

Emergency decontamination procedures for injured personnel shall depend on the severity of the injury or illness and the nature of the contamination. Minimum decontamination will consist of washing and rinsing and the removal of contaminated outer clothing and equipment. If the emergency is such that there is insufficient time to complete 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 transportation to medical care. If heat stress is a factor in the victim's illness/injury, the outer protective garment must be removed from the victim and cooling initiated immediately.

IN THE EVENT OF AN EMERGENCY, THE SITE MANAGER MUST NOTIFY THE APPROPRIATE HEALTH AND SAFETY RESPONSE PERSONNEL WITHOUT DELAY.

In the event of a safety or health accident, injury or emergency at the Site, emergency measures will immediately be taken to assist those who have been injured or exposed and to protect others from hazards. Personnel trained in first aid procedures, shall be dispatched immediately to attend to the injury to provide primary treatment of injuries or illnesses until emergency response personnel respond.

In case of a site emergency requiring evacuation of the site or a location thereof, personnel shall evacuate to a designated safe refuge location, both for their own personal safety and to prevent hampering response/rescue efforts. The Site Manager will account for all personnel.

Whereas the emergency is believed to has resulted in excess occupational exposure to the contaminates defined herein or contamination of areas and/or surfaces outside of an Exclusion Zone the Site Manager and Site Safety and Health Officer shall investigate the incident in a effort 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 and notify proper personnel.

Follow up activities must be completed before work is resumed following an emergency. All used emergency equipment must be recharged, refilled or replaced. Government agencies must be notified as appropriate.

Minimum Site Manager on-site equipment for safety and emergency response shall be maintained, as follows:

- The appropriate number, size, and types of Fire Extinguisher (A,B,C Rating) at the areas of work. At a minimum, two fire extinguishers shall be maintained both within and outside the Exclusion Zone in addition to one each within each piece of driving equipment.
- Adequately stocked First Aid Kit
- Eye Wash Station (wash bottles at a minimum) at each area of work
- Extra copy of this Health and Safety Plan.

- Extra copy of Material Safety Data Sheets for all chemical products used.

An investigation report shall be prepared by the Site Manager and Site Safety and Health Officer of all injuries, accidents, or the implementation of a contingency plan for emergencies including fire, accident, power failure, or any other event involving safety and/or health or that may require modification or abridgment of the Exclusion Zone isolation procedures within 24 hours of occurrence or implementation.

This report shall be written to comply with industry standards and include representation of the incidents, chain of events, persons participating, response actions and similar pertinent information as well as what precautions can be implemented to reduce or potentially eliminate the incident from recurring. The investigation report must be accurate, objective, complete and authenticated (signed and dated).

16. CONFINED SPACE ENTRY PROCEDURES

Entry into confined spaces is not anticipated with this project.

17. SPILL CONTAINMENT

In the event of a spill of contaminated soils/groundwater within the Exclusion Zone, spoils shall be collected and placed in to containers or back in to the excavation, the affected area can then be covered or marked out to limit disturbance.

Where a spill of contaminated soil occurs outside of the Exclusion Zone, of significant consequence, the spill area shall be established as an Exclusion Zone and clean-up operations conducted to collect all soils and decontaminate the impacted surfaces to background conditions.

18. EFFECTIVENESS OF SITE HEALTH & SAFETY PLAN

The Site Supervisor, Site Safety and Health Officer and Site Manager shall continuously be aware of the work and the activities being conducted. Further, at a minimum, a formal safety review meeting shall be convened at the beginning of the excavation activities, and weekly thereafter, to review the progress and work methodologies employed to determine the effectiveness of the HASP. This safety meeting shall be attended by all site personnel and visitors. Any deficiencies shall be promptly corrected.

The Site Manager shall notify the Site Safety and Health Officer if any of the following agencies need to be contacted: the EPA, New York State Department of Environmental Conservation (NYSDEC) and local authorities having jurisdiction over the contaminated soil disturbance activities within required time frames. The Site Supervisor prior to the commencement of work shall secure all permits required for the work including disposal of contaminated soil in the approved landfill.

704-744 Foote Avenue
Jamestown, New York, 14701

HEALTH AND SAFETY PLAN COMPLIANCE CERTIFICATION

An officer of the company shall execute this certification. The executed document shall then be submitted to the Site Safety & Health Officer along with a copy of the company's applicable Safety Plan and Program prior to commencing work at the Site.

I have received and reviewed the Health and Safety Plan prepared for the project reference in the title above located at 704-744 Foote Avenue, Jamestown, New York, 14701. I understand the scope of the hazards present and the need for compliance and shall immediately correct any safety violations or omissions of our company during the course of our work on this Project. I realize that is our obligation, as an employer, to provide a safe and healthful work place.

A specific work plan document has been prepared describing our work activities and is attached along with our applicable Safety plan and programs. A copy of this work plan along with the Site-Specific Health & Safety Plan shall be made available for and discussed with all our employees assigned to the Project.

Name of Company	Telephone Number
	Facsimile Number
Address	
Printed Name	Email Address
Title	Cellular Telephone Number
Signature	Date

704-744 Foote Avenue
Jamestown, New York, 14701

CERTIFICATE OF WORKERS ACKNOWLEDGMENT

The project as listed in the title above and located at 704-744 Foote Avenue, Jamestown, New York 14701 involves the contact with potential petroleum-impacted soil and groundwater. Your employers contract with the above referenced project requires that you;

a) Have received 24/40-hour HAZWOPER training and 8-hr refresher training within the 12 months.
b) Be trained and knowledgeable of the Health and Safety Plan document (HASP),
c) Be trained in safe work practices and in proper use of the equipment to be used on the job, and
d) Where applicable, receive a medical examination.

By signing this certification you are acknowledging that your employer has met the obligations described above and you recognize the hazards present on the site and the policies and procedures required to minimize occupational exposure or adverse affects of these hazards. Further, you acknowledge that you have read the HASP, have been orally briefed, and fully understand all of the following aspects of the project:

1. Hazards associated with the project
2. Personal protective equipment
3. Emergency procedures/contacts
4. Project team-member responsibilities
5. Work zones and decontamination procedures

I certify that my statements and answers are true and that I am familiar with all applicable health and safety regulations and provisions established for entry into the Exclusion Zone and/or Contamination Reduction Zone.

Name	Company	Date

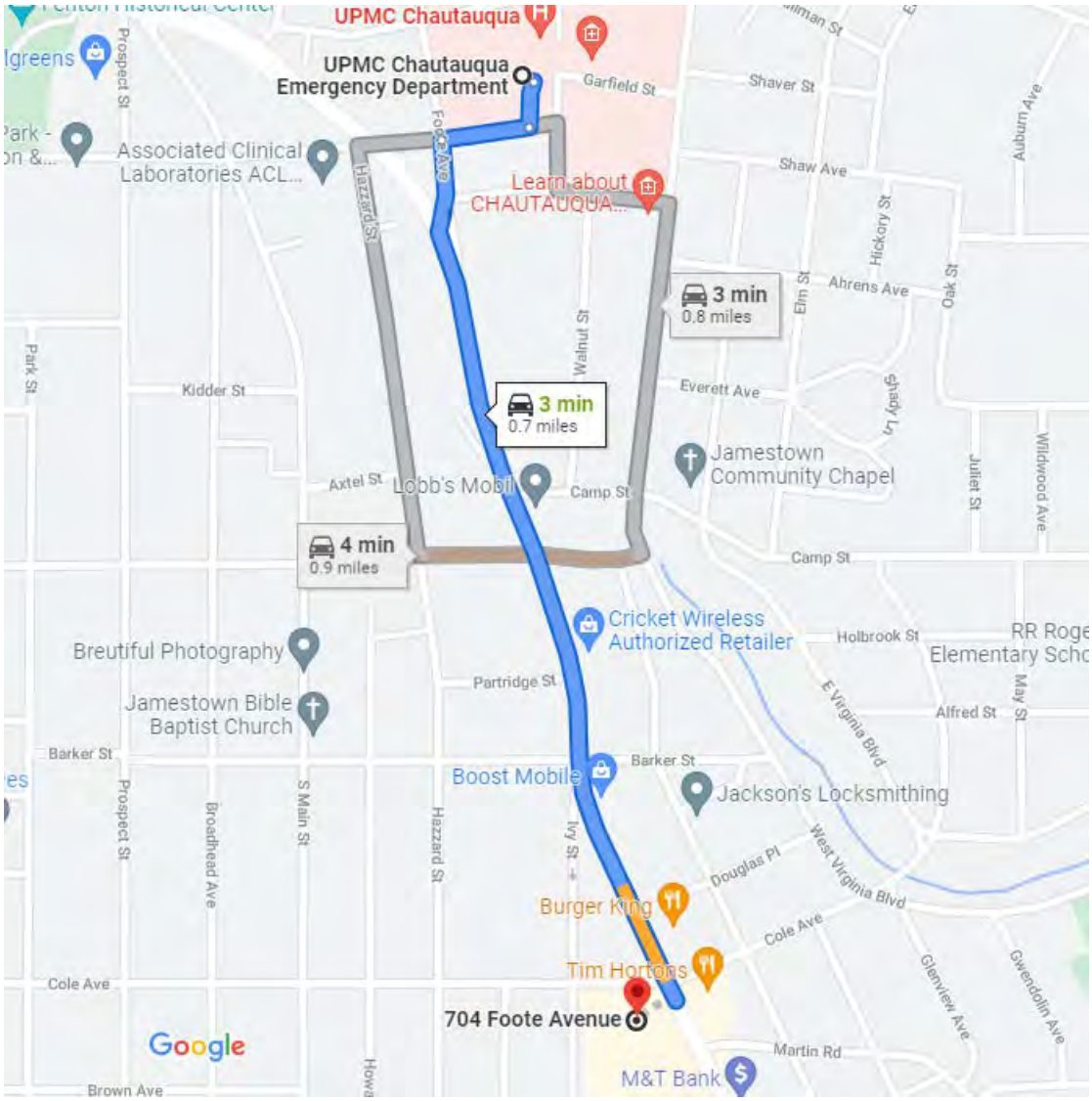
I certify that my statements and answers are true and that I am familiar with all applicable health and safety regulations and provisions established for entry into the Exclusion Zone and/or Contamination Reduction Zone.

Name	Company	Date

HOSPITAL DRIVING DIRECTIONS

UPMC Chautauqua Emergency Department
704 Foote Ave
Jamestown, NY, 14701
(716) 664-8120

Head south toward Prather Avenue
Turn right onto Pranther Avenue
Turn left onto Foote Avenue



UPMC Chautauqua Emergency Department
207 Foote Ave, Jamestown, NY 14701

1. Head south toward Prather Ave

171 ft

2. Turn right onto Prather Ave

328 ft

3. Turn left onto Foote Ave

Destination will be on the right

0.6 mi

704 Foote Ave
Jamestown, NY 14701

APPENDIX C
FIELD SAMPLING SHEETS

LOW FLOW GROUND WATER SAMPLING LOG

704-744 Foote Avenue, Jamestown, NY 14701

Project Number: 1221000044

Monitoring Well: _____ Date: _____ Page: ___ of ____

Field Personnel: _____ Weather: _____

Reported Well Depth (ft btoc): _____ Screened/Open Interval (ft btoc): _____

Well Diameter (in): _____ Depth to Water (ft btoc): _____

Well Condition: _____

PID Readings (ppm): Background: _____ Depth of Pump (ft btoc): _____

Beneath outer cap: _____ Purging Method: _____

Beneath inner cap:

WELL PURGING & SAMPLING (Low Flow):

Time 5 minute intervals	Purging	Sampling	Temperature (°C)		pH (units)		ORP (mV)		Conductivity (mS/cm)		Turbidity (NTU)		DO (mg/L)		Depth to Water (ft)		Pumping Rate (ml/min)	PID (ppm)	Note
			Reading	Change	Reading	Change	Reading	Change	Reading	Change	Reading	Change	Reading	Change	Reading	Change			
			±3%		±0.1 unit		±10 mV		±3%		±10% for values greater than 1 NTU		±10%		< 0.3 ft		200-500	<10	

Total Volume Purged:_____ Final Water Level (ft):_____ Final Well Depth (ft): _____

SAMPLING DATA:

Sample ID's: _____ Sample Visual Appearance: _____

Sampling Method: _____ Other Parameters: _____

Analysis:

Comments:

APPENDIX D
SCHEDULE

Appendix D - PSWP Schedule

704-744 Foote Avenue

Jamestown NY 14701

EBI Project Number: 1221000044

	Duration	Month 1																																				
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11
Mobilization																																						
PSWP Submission	1 day																																					
PSWP Approval (TBD)	14 days																																					
Pilot Testing Installation Field Work																																						
Mobilization and Planning	12 days																																					
Pre-construction Meeting	1 day																																					
Call NY 811	1 day																																					
GPR Survey for Utilities	1 day																																					
CAMP Monitoring	5 days																																					
Drilling MWs/Trenching	3 days																																					
Groundwater Well Development	1 day																																					
Well Survey	1 day																																					
Baseline DTW readings and Sampling	4 days																																					
Pilot Testing Installation	1 day																																					
Pilot Testing Operation	90 days																																					
First Month of Operation	30 days																																					
Sampling	2 days																																					
Report Prep and Submission	3 days																																					
Second Month of Operation	30 days																																					
Sampling	2 days																																					
Report Prep and Submission	3 days																																					
Third Month of Operation	30 days																																					
Sampling	2 days																																					
Report Prep and Submission	3 days																																					

Notes:

Shaded Grey Boxes Indicate Weekends

Appendix D - PSWP Schedule

704-744 Foote Avenue

Jamestown NY 14701

EBI Project Number: 1221000044

	Duration	Month 2																			Month 3																										
		Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day
		12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
Mobilization																																															
PSWP Submission	1 day																																														
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Well Survey	1 day																																														
Baseline DTW readings and Sampling	4 days																																														
Pilot Testing Installation	1 day																																														
Pilot Testing Operation	90 days																																														
First Month of Operation	30 days																																														
Sampling	2 days																																														
Report Prep and Submission	3 days																																														
Second Month of Operation	30 days																																														
Sampling	2 days																																														
Report Prep and Submission	3 days																																														
Third Month of Operation	30 days																																														
Sampling	2 days																																														
Report Prep and Submission	3 days																																														

Notes:

Shaded Grey Boxes Indicate Weekends

Appendix D - PSWP Schedule

704-744 Foote Avenue

Jamestown NY 14701

EBI Project Number: 1221000044

Month 4

Day 23, Day 24, Day 25, Day 26, Day 27, Day 28, Day 29, Day 30 | Day 1, Day 2, Day 3, Day 4, Day 5, Day 6, Day 7, Day 8, Day 9, Day 10, Day 11, Day 12, Day 13, Day 14, Day 15, Day 16, Day 17, Day 18, Day 19, Day 20, Day 21, Day 22, Day 23, Day 24, Day 25, Day 26, Day 27, Day 28, Day 29, Day 30 | Day 1, Day 2, Day 3

	Duration
Mobilization	
PSWP Submission	1 day
PSWP Approval (TBD)	14 days
Pilot Testing Installation Field Work	
Mobilization and Planning	12 days
Pre-construction Meeting	1 day
Call NY 811	1 day
GPR Survey for Utilities	1 day
CAMP Monitoring	5 days
Drilling MWs/Trenching	3 days
Groundwater Well Development	1 day
Well Survey	1 day
Baseline DTW readings and Sampling	4 days
Pilot Testing Installation	1 day
Pilot Testing Operation	90 days
First Month of Operation	30 days
Sampling	2 days
Report Prep and Submission	3 days
Second Month of Operation	30 days
Sampling	2 days
Report Prep and Submission	3 days
Third Month of Operation	30 days
Sampling	2 days
Report Prep and Submission	3 days

Notes:

Shaded Grey Boxes Indicate Weekends

Appendix D - PSWP Schedule

704-744 Foote Avenue

Jamestown NY 14701

EBI Project Number: 1221000044

	Duration	Month 5																											Month 6													
		Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mobilization																																									
PSWP Submission	1 day																																								
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Report Prep and Submission	3 days																																								
Third Month of Operation	30 days																																								
Sampling	2 days																																								
Report Prep and Submission	3 days																																								

Notes:

Shaded Grey Boxes Indicate Weekends

Pilot Study Work Plan

Southside Plaza Site BCP Site No. C907043

704-744 Foote Avenue
Jamestown, New York, 14701

EBI Project No. 1221000044

Dated: May 27, 2022

Prepared for:

Southside Station LLC
31 Sylvan Road
Rochester, New York, 14618

Prepared by:

EBI Engineering & Architecture

EBI Engineering & Architecture

HARBOR COMPLIANCE
1830 COLONIAL VILLAGE LANE
C/O JERRI-LYNN WIER JD
LANCASTER, PA
www.ebiconsulting.com

May 27, 2022

Mr. Joshua M. Vaccaro
Division of Environmental Remediation
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203

Subject: Pilot Study Work Plan
Southside Plaza Site BCP Site No. C907043
704-744 Foote Avenue
Jamestown, New York, 14701
EBI Project No. 1221000044

Dear Mr. Vaccaro:

EBI Engineering PC (dba: EBI Engineering & Architecture, hereinafter "EBI"), on behalf of Southside Station LLC, is providing this *Pilot Study Work Plan (PSWP)* for the above referenced site (herein identified as the Subject Property). Previous site investigation work by EBI and others identified the presence of tetrachloroethylene (PCE), a chlorinated volatile organic compound (CVOC) that is commonly used to dry clean clothes, in on-site groundwater and soil vapor from a former dry-cleaning tenant space. This document presents the scope and details of the pilot study of E-Redox®-In Reduction to evaluate the remedial technology at the Subject Property for the appropriate remedial alternative selection. The soil vapor impacts are currently being mitigated by a sub-slab depressurization system (SSDS) in the tenant space that has reportedly been operating successfully since February 2013. This report has been completed in accordance with New York State Department of Environmental Conservation (NYSDEC) DER-10, issued May 3, 2010 and the NYSDEC 6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6, dated December 14, 2006. If you have any questions or comments, please contact Mr. Brian Kilcoyne at (781) 418-2349.

Respectfully submitted,
EBI ENGINEERING PC

07 June 2022

Christine B. Madsen
Project Manager

Brian Kilcoyne
Senior Project Manager
(781) 418-2349

Dr. Anthony E. Farmand, PhD, PE
Civil Engineer

Cc: Southside Station LLC
31 Sylvan Road
Rochester, New York, 14618

Certification Statement

I, Dr. Anthony E. Farmand, PhD, PE certify that I am currently a NYS registered professional engineer and that this Pilot Study Work Plan (PSWP) 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).

07 June 2022

Exp 28 Feb 2023

Table of Contents

APPENDICES

1.0 INTRODUCTION

1.1 SITE DESCRIPTION

The Subject Property (Figure 1) consists of one 5-acre tax parcel identified by Chautauqua County SBL 404.07-8-3. The Subject Property is developed with two structures including a retail strip mall on the western side of the Subject Property and a separate restaurant tenant space north of the strip mall. The buildings are surrounded by an asphalt paved driveway to the west of the building for access, and a small portion of unpaved grassy area at the southwestern corner of the Subject Property. The eastern side of the Subject Property is an asphalt paved parking lot.

The Subject Property is bordered by Cole Avenue to the north, Foote Avenue to the east, a separate strip retail mall and parking lot to the south, and residential homes and backyards to the west.

The separate restaurant building to the north is currently occupied by a McDonald's restaurant (704 Foote Avenue). The strip mall consists of six separate tenant spaces occupied from north to south by: the UPS Store – a shipping supplies store (708 Foote Avenue), Spa Nails – a nail salon (710 Foote Avenue), Dollar Tree – a retail store (716 Foote Avenue), Cellular One – a cellular service and retail store(720 Foote Avenue), KeyBank – a bank (730 Foote Avenue), and TOPS Friendly Markets (TOPS) – a grocery store (738 Foote Avenue). See Figure 2 for details.

1.2 SITE HISTORY

The Subject Property had been occupied by residential buildings from at least the 1890s to 1955. Between 1955 and 1958 to 1960, a strip mall and a former separate structure north of the strip mall were built at the Subject Property. Two historical dry cleaners, Triangle Cleaners and Anderson Cleaners, occupied a tenant space historically addressed as 736 Foote Avenue from approximately 1956 to at least 1975 in the strip mall building. Two additional dry cleaners, Anderson Cleaner and Whirley-Wash Dry Cleaners, occupied the historical tenant space addressed as 750 Foote Avenue from approximately 1980 to at least 1994.

The former northern building (704 Foote Avenue) had been historically occupied by two former gas stations between approximately the 1950s to the late 1970s. . This building was demolished between 1975 and 1980, and the current building was constructed in 1980 for use as a McDonald's. Two 500-gallon oil USTs and four 3,000-gallon gasoline USTs were known to be at the Subject Property, however no information was identified from the Jamestown Fire Department or the petroleum bulk storage (PBS) registration, nor were tank closure reports identified.

1.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS AND REGULATORY CORRESPONDENCE

Environmental Reports and Investigations have been completed at the Subject Property since 2007. The following is a list of reports that had been completed and were reviewed.

- Phase I Environmental Site Assessment (ESA), prepared by EMG Corporation, dated April 2007;
- Limited Site Investigation Report, prepared by Apex Companies, LLC (Apex), dated November 2008;
- Additional Site Investigation, prepared by Apex, dated March-May 2010;
- Site Investigation, prepared by Apex, May-June 2010;
- Site Investigation, prepared by Apex, dated May 2011;
- Off-Site Site Investigation, prepared by Apex, dated December 2011 – January 2012;

- Sub-Slab Vapor Assessment, prepared by Apex, dated March-April 2012;
- Off-Site Sub-Slab Vapor Assessment at Southside Foote Avenue Plaza, prepared by Apex, dated July 2012;
- Phase I ESA, prepared by EBI Consulting, dated December 2012;
- Sub-Slab Depressurization System Installation Report, prepared by Apex, dated May 2013;
- Addendum to Phase I ESA and NYSDEC Regulatory File Review, prepared by EBI Consulting, dated August 2013;
- Environmental Review and Comments, prepared by Bell Oldow, dated August 2013;
- Phase I ESA, prepared by AEI Consultants (AEI), dated October 2014;
- Potential Source Area Investigation, prepared by Apex, dated May 2015;
- Groundwater Sampling Results and Evaluation of SSDS, prepared by ATC Engineering, LLP (ATC), dated January 30, 2019;
- Remedial Investigation Work Plan, prepared by Benchmark, dated November 2019; and,
- Draft Remedial Investigation / Alternatives Analysis Report, prepared by Benchmark, dated June 2020.

Previous environmental investigations and reports have been completed at the Subject Property between 2007 and 2019 to assess potential environmental issues based on the historic use of two tenant spaces for dry cleaning operations. The investigations identified the presence of soils impacted by chlorinated volatile organic compounds (CVOCs) at concentrations above the 9 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs) and groundwater impacted by CVOCs above the 1.1.1. TOGS Groundwater Quality Standards/ Guidance Values (GWQS). The highest concentrations of CVOCs in soil and groundwater were observed adjacent to the former Whirley-Wash location (750 Foote Avenue). Elevated concentrations of CVOCs were identified in sub-slab vapor samples collected from this area. A sub-slab depressurization system (SSDS) was installed in February 2013 at the location of the former Whirley-Wash, within the existing TOPS. Indoor air results collected in 2013 from TOPS and the neighboring property to the south were below the NYSDOH action levels, confirming that the SSDS is effectively mitigating CVOC concentrations in the sub-slab vapor of these buildings.

1.4 SUMMARY OF THE DRAFT REMEDIAL INVESTIGATIONS FINDINGS

The Draft Remedial Investigation was completed by Benchmark between April 16 to May 7, 2020 (Benchmark's 2020 RI) to supplement previous environmental data and delineate or identify areas requiring remediation. On-site field activities included a sewer evaluation; SSDS evaluation; soil boring advancement; surface, near surface, and subsurface soil and fill sampling; soil vapor testing; monitoring well installation; and groundwater quality sampling. The sampling was completed in accordance with NYSDEC-approved RI Work Plan, prepared by benchmark, dated November 2019.

1.4.1 Surface and Near Surface Soil Analytical Investigation and Results

Two surface soil samples and two near-surface soil samples were collected from the non-hardscaped area in the southwestern corner of the Site, from depths of 0 to 2 inches below the vegetative cover (if present) and near-surface soil samples were collected from 2 to 12 inches below ground surface, via hand augur. The two soil samples were analyzed for Target Analyte List (TAL) metals, polychlorinated biphenyls (PCBs), pesticides, herbicides, 1,4-dioxane and PFAs. No samples were analyzed for TCL VOCs since no elevated PID readings were detected.

The analytical results were compared to the UUSCOs and the CUSCOs. Nickel was the only contaminant detected above its CUSCO. The detection was in a surface soil sample in the southwestern corner of the Subject Property. Chromium, zinc, and 4,4'-DDT were the only contaminants detected above UUSCOs.

1.4.2 Subsurface Soil and Fill Analytical Results

Seventeen soil borings were advanced across the Subject Property; two borings were located inside the TOPS tenant space, one boring was completed in the Salon-1 tenant space, and one boring was completed in the offsite building adjoining to the TOPs to the south. The borings were completed to depths ranging between 7 and 20.5 feet below ground surface (bgs). One location, MW-1D was planned to be a deep overburden groundwater monitoring well to be paired with existing well MW-1; however, the depth to refusal was the same as the depth of well MW-1 so it was not completed as a well. An additional five soil borings were converted to monitoring wells. The soil samples were analyzed for target compound list (TCL) plus CP-51 List VOCs plus tentatively identified compounds (TICs), TCL SVOCs plus TICs, TAL metals, PCBs, pesticides, herbicides, 1,4-dioxane, and PFAs. A limited number of subsurface soil samples were also submitted for analysis of total organic carbon (TOC), heterotrophic plate count (HPC), and soil oxidant demand (SOD) to assist in selecting potential remedial alternatives.

Benzo(a)pyrene, dibenz(a,h)anthracene, arsenic, and barium were the only contaminants detected above CUSCOs in subsurface soil and fill. Benzo(a)pyrene was detected in one soil sample collected from two to four feet bgs and is associated to urban fill and was currently covered by asphalt pavement. The arsenic and two barium exceedances were at depths between eight and fourteen feet bgs, tend to be ubiquitous in urban fill and are covered by asphalt pavement. PCE was detected above its Protection of Groundwater Soil Cleanup Objective (PGSCO) in saturated soil and fill at depths between 8 and 16 feet bgs in the presumed source area, and along the groundwater plume, with the highest concentration (14 mg/kg) detected in the saturated 6 to 10 feet interval prior to the installation of well MW-13 in 2015. None of the concentrations suggest a soil or fill source of contamination.

1.4.3 Soil Vapor Investigation

Ten soil vapor sample locations were planned for the RI; seven to be completed along the west, north, and east property boundary (SV-01 to SV-07) and three off-site along the east side of Foote Avenue (SV-08 to SV-10). The soil vapor probes were installed to a depth of 5-feet bgs. The soil vapor samples were purged and sampled in general accordance to NYSDOH guidance and analyzed for VOCs via USEPA Method TO-15. Two of the soil vapor locations, SV-06 and SV-07, located along the western boundary of the Subject Property did not collect a sample, due to water in the borehole. Benchmark-Turnkey attempted to remove the water from the borehole and to collect an additional sample on two additional field dates, however this effort was unsuccessful, so these two samples were not collected or analyzed. One outdoor ground level air sample was collected to the southeast of SV-06 location near MW-4, which was upwind of the soil vapor location the day of sampling.

None of the onsite or off-site soil vapor samples exceeded the NYSDOH air guideline values. The outdoor air sample did not contain PCE; however, PCE was detected in all soil vapor samples at low concentrations, generally less than 1.7 micrograms per cubic meter (µg/m^3), except for one location at a concentration of 12 µg/m^3. The highest concentration of PCES in soil vapor sample SV-04 did not correspond to the highest concentration of PCE in the groundwater or subsurface soil and fill. Since the offsite soil vapor concentrations are generally lower than onsite soil vapor samples, and offsite groundwater is not impacted by CVOCs, an offsite soil vapor intrusion study was not warranted as part of the Benchmark's 2020 RI and was not recommended.

1.4.4 Groundwater Investigation

Five out of the planned eight planned onsite groundwater monitoring wells were installed during the RI. Five shallow overburden wells (MW-15 though MW-19) were installed. Three planned deep overburden wells (MW-1D, MW-6D, and MW-18D) were abandoned since the confining layer was identified at a depth of 10 to 22 feet bgs, which is the depth of the existing groundwater monitoring wells. This modification was approved by the NYSDEC in an email dated April 2, 2020. Five of the previously existing ten wells were buried under asphalt. On April 20, 2020, wells MW-3, MW-5, MW-6, MW-8, and MW-11 were uncovered, and the road boxes were repaired. Two shallow overburden wells were installed offsite in the Salon-1 tenant space of the building. Four temporary wells were installed along Cole Avenue and Foote Avenue on April 21, 2020. Groundwater samples were analyzed for TCL plus CP-51 List VOCs, TCL SVOCs plus TICs, TAL metals, PCBs, pesticides, herbicides, 1,4-dioxane and PFAs in nine locations. Groundwater from MW-13 was also analyzed for chlorinated VOCs degraders, dissolved metals, dissolved gasses, and general chemistry to assist in selecting potential remedial alternatives.

The following contaminants of concern were detected in groundwater at concentrations above the GWQS/GVs:

- Cis-1,2-dichloroethene
- PCE
- TCE
- Barium
- Magnesium
- Sodium
- PFOA
- PFOS

The metals detected in limited wells were attributed to naturally occurring conditions. Total PFOAs and PFOS only slightly exceeded the action level in one well. The only groundwater contaminants of significance are the CVOCs which were detected on the eastern portion on the Subject Property in a plume migrating from the southwest to the northeast. The CVOCs in groundwater are the remedial drivers for the Subject Property.

1.4.5 Geology and Hydrogeology

According to the RI and previous environmental investigations, the Subject Property is located within the glaciated Allegheny Plateau. The overburden material at the Subject Property is generally described as gray to brown sandy silt and clayey silt with some gravel. The overburden extends from the ground surface to approximately 7 to 11 feet bgs in the southwestern (upgradient) portion of the Subject Property, and ranges from approximately 14 to 20 feet bgs in the northeastern portion of the Subject Property. The overburden overlies gray weathered shale. Bedrock was observed in all boring location at depths of 7 feet bgs near the southwestern portion of the Subject Property and 20.5 feet bgs near the northeastern corner of the Subject Property. The weathered shale was encountered between 6 and 16 feet bgs.

The Subject Property is located within the Allegheny River major drainage basin, in which the major areas of groundwater are within coarser overburden deposits and sandstone and shale bedrock. Groundwater was encountered at the Subject Property from depths of approximately 3.43 feet bgs (MW-12) at the

southwestern portion of the Subject Property, to 9.28 feet bgs (MW-5) at the northern side of the Subject Property.

Groundwater flows in a northeast direction through the upgradient (southwestern) portion of the Subject Property, then turns and flows in a northerly direction based on the groundwater elevations measure on May 4, 2020. The groundwater flow direction determined during the April 2019 sampling event completed by ATC was towards the northeast.

1.4.6 Remaining Contaminants of Concern (COCs)

Based on the results of the previous investigations, and the Draft Remedial Investigation completed in April 2020, the constituents of concern of the Subject Property which need to be addressed via a remedial strategy include:

- Nickel identified in one surface soil sample at the southwestern corner of the Subject Property
- PCE identified in the subsurface soil
- PCE and TCE identified in the groundwater at the Subject Property

2 SUMMARY OF PILOT STUDY

The goals of the Pilot Study Work Plan (PSWP) and scope of work are detailed in this section.

2.1 OBJECTIVES AND RATIONALE

The following are the objectives of the PSWP:

- Complete a baseline round of groundwater sampling to update the conceptual site model for the Subject Property and to provide a basis of support for or against the effectiveness of the proposed pilot study;
- Reduce PCE contamination through degradation in the groundwater just downgradient of the source area, therefore providing a line of evidence that E-Redox®-In Reduction is a feasible remediation solution;
- Evaluate the results of the pilot testing data to supplement the design for full-scale remediation;
- Collect soil vapor vacuum readings prior to and during pilot testing to ensure that the remedial technology will not adversely affect the existing operation of the SSDS.

The objectives of this PSWP will not address the remediation of any residual soil contamination consisting of metals in the subsurface or the residual chlorinated solvents in the soil vapor phase. As per the NYSDEC comment letter dated October 21, 2021, subsurface soil vapor/ vacuum monitoring points will be installed in order to determine if the pilot testing will affect the operation of the SSDS at the TOPs tenant space.

2.2 SCOPE OF WORK

The scope of work to be completed as part of this PSWP is detailed as follows:

- A geophysical survey of the work area in order to document subsurface utilities in the locations of proposed conduit trenching and monitoring well installation.
- Site mobilization for the groundwater and electrode monitoring well installation, shallow vapor well installation and baseline testing, and trenching/ installation the electrical connections for use in the pilot testing.
- Completion of one round of baseline groundwater sampling via the low-flow purging method of the newly installed groundwater monitoring wells and select existing onsite and offsite groundwater monitoring wells to update the conceptual site model (CSM) and to provide a basis of support for or against the effectiveness of the proposed pilot study.
- Following the baseline sampling event, three of the newly installed wells will be used for electrode installation for E-Redox®-In Reduction. One central monitoring well, located between the three electrode test wells, will be used as the primary monitoring well for evaluation of E-Redox®-In effectiveness . All groundwater wells will be 2-inch diameter and completed with flush mount road boxes with sufficient room for installation of the electrode and wiring. Following installation and baseline sampling, the pilot testing will commence. A detailed description of the remedial technology is included in Section 2.7.
- The pilot testing will continue for 3 months. Three rounds of groundwater monitoring from selected groundwater wells around the pilot testing area will be completed, with sampling conducted after one, two, and three months of operations. The schedule of groundwater monitoring well sampling is included in Section 2.6.

- After the completion of the pilot testing for a duration of 3 months, EBI, Advanced Environmental Technologies, LLC (AET) and the remedial engineer will assess the data to determine the effectiveness of the technology and report the findings in a revised Alternate Analysis Report (AAR).

2.3 FIELD PREPARATION

Prior to the mobilization for field work, EBI will contract with a New York state certified driller.

Prior to the mobilization for drilling and electrical installation work onsite, EBI and/or the selected drilling contractor will contact Dig Safely New York to notify the affected member utilities of the proposed work. This notification will be made a minimum of 72-hours in advance of site mobilization. EBI will contract with a ground penetrating radar contractor in order to clear the proposed drilling and trenching locations, and to locate all subsurface utilities in the parking lot of the Subject Property in advance of future remedial installations. This survey will aid in the development in of the Remedial Action Work Plan (RAWP).

2.4 PILOT TESTING INSTALLATION AND BASELINE SAMPLING

EBI will contract with a New York state certified driller to install one groundwater monitoring well just upgradient and exterior to the TOPs tenant space at the Subject Property, and three groundwater electrode wells triangulated around this monitoring well to the northwest, northeast, and east of the new groundwater monitoring well (Figure 3).

Prior to equipment setup, the work area will be secured by placing reflective road cones with telescoping lateral connections around the work area to prevent the public from entering the work area.

A site-specific Community Air Monitoring Plan (CAMP) has been prepared for the Site and has been placed in Section 2.8.1. This document will be employed during all intrusive Site activities, including monitoring well and vapor/vacuum monitoring point installation and trenching. Implementation of the CAMP is not necessary during baseline and monthly groundwater gauging/ sampling or electrode installation.

2.4.1 Soil Screening and Well Installation Details

Each proposed well location will be continuously soil sampled prior to advancement of the hollow stem augers. Soils will be field screened at discrete 6-inch intervals using a PID. If elevated PID readings and/or field indicators/ odors indicating contamination are identified, soil samples will be collected and shipped under chain of custody to a New York-certified laboratory for the analysis of CVOCs. If no elevated PID readings and/or field indicators/ odors indicating contamination are encountered, soil samples will not be collected for laboratory analysis. Soil boring logs, documenting the PID field screening data, will be prepared for each well location.

The permanent groundwater wells will be installed by a New York licensed well driller using a Geoprobe drill rig equipped with 4.25-inch ID hollow stem augers. The soils samples collected prior to well installation will aid with placement of the well screen interval. wells will be constructed with 2-inch diameter10-slot screened PVC and 2-inch PVC casing. The annular space between the well and the borehole will be filled with a filter sand pack to 2-feet above the screened interval, and sealed with bentonite chips. The permanent wells will be finished with road-grade well boxes set in a concrete pad to protect the wells from vehicular traffic. Following installation, the wells will be developed with a submersible or inertial pump until the water is visibly free of sand and silt. Well completion logs will be prepared for each installed well.

After installation, the monitoring wells will be allowed to equilibrate for 3 days. During this two-week period, the four groundwater monitoring wells will be surveyed. This information will also aid in the groundwater elevation determination.

2.4.2 Vacuum Monitoring Point Installation and Testing

Two shallow vapor wells (i.e. vacuum monitoring points) will also be installed exterior to the TOPs tenant space in order to facilitate the collection of vacuum readings during pilot testing as per the NYSDEC October 21, 2021 Comments Letter. The vapor/ vacuum monitoring wells, designated ESV-1 and ESV-2 (Figure 3) will be installed to a depth of approximately 5- feet bgs using a direct push drill rig. The construction materials will consist of a plastic vapor point/screen attached to Teflon or Nylaflow tubing. The soil vapor points will be set near the bottom of the boring and surrounded by silica sand to approximately 4.5 feet in depth. Neat cement will be installed between 0.5 and 4.5 feet bgs. The points will be finished with protective flush mount road boxes set in concrete. Vacuum readings will be collected at the same frequency as the groundwater sampling events (baseline, and monthly after implementation pilot study) to ensure that the remedial technology will not adversely affect the active SSDS.

2.4.3 Trenching and Electrical Installation Details

Following well installation, trenching through the concrete walkway and asphalt parking lot will be completed. The trenches will extend to depths of approximately 6-12 inches below grade surface (bgs), and will horizontally connect the wellheads of the electrode wells to the electrical equipment/ DC power source that will supply a low voltage to the electrodes. An existing standard 120VAC outlet, located proximal to the pilot study area, will be utilized as the power source for the testing. A locking protective cover will be installed over the outlet to minimize potential tampering with or disconnection of the power source during the test. The DC power source will be placed inside a weather resistant locking Junction box mounted to the exterior building façade and will plug directly into the existing outlet.

A ¾ to 1 inch diameter PVC electrical rated conduit will be installed in the trench from the power supply and routed to each electrode well. Low voltage 10-gauge, stranded weather rated wiring will be pulled through the conduit to each of the three electrode well heads. Sufficient excess wiring will be nested in each road box for electrode connection/ placement into the well. Several inches of excavated soil will be returned to the trench and compacted over the conduit. Electrical underground warning tape made of metal-detectable polyester material will be placed several inches above the conduit. The remaining space will be backfilled, compacted, and topped with asphalt. No open trenches will be left during non-working hours and the work area will remain secured until the final asphalt restoration is complete.

Excess concrete will be discarded as municipal waste. Excess asphalt will be hauled offsite by the paving contractor for recycling. Minimal excess soil is anticipated to be generated during the well installation/ trenching work. Excess soil will be placed on and covered with minimum 6-mil poly sheeting during the installation activities. Any excess soil remaining following completion of backfilling will be containerized in 55-gallon DOT approved drums and staged onsite for future characterization and disposal. Soils exhibiting excessive VOC headspace readings or with visual indications of impacts will not be reused as backfill.

2.4.4 Baseline Groundwater Gauging and Sampling

Following three days of equilibration time, EBI will re-mobilize to the Subject Property to collect a round of groundwater elevation levels and groundwater samples. The groundwater samples will be collected from the following wells:

- The newly installed groundwater monitoring well (MW-22);
- The three newly installed electrode wells (EMW-1, EMW-2 and EMW-3);
- All existing accessible onsite groundwater wells; and
- Offsite exterior wells MW-8, MW-10A, MW-11, and offsite interior wells MW-20, and MW-21 (if interior access can be granted by the adjacent property owner)

The groundwater sample will be collected via low-flow sampling methods and sent to the laboratory for analysis of CVOCs via EPA Method 8260 and chloride. MW-22 and MW-13 will also be analyzed for ethane, ethene, and acetylene. This round of sampling will constitute the baseline sampling event. Field parameters, including pH, dissolved oxygen, oxidation-reduction potential, turbidity and conductivity will be measured with a water quality meter and recorded onto field sheets prior to sample collection.

2.5 PILOT TESTING

EBI will contract with AET to install the electrodes in the three proposed electrode wells. AET will connect the electrodes to the DC power supply located at the front of the TOPs tenant space within a secured weather resistant, secured junction box (See Section 2.4.3). Once the connections are made, AET will operate the system and monitor the system for the start date, and the second day of operation. Once the pilot testing is operational, it will run for a minimum of 3 months. During this time EBI personnel will monitor the system twice during the first month of operation, then once a month until the end of the pilot testing period. EBI will also complete a total of four rounds of groundwater sampling and gauging, with a baseline sampling event prior to pilot testing startup, and continue once a month until the end of the 3- month pilot testing period. A detailed description of the remedial technology is discussed in Section 2.7.

Vacuum readings will be collected at the same frequency as the groundwater sampling events to ensure that the remedial technology will not adversely affect the active SSDS.

2.6 GROUNDWATER SAMPLING DATA COLLECTION SCHEDULE

The following table details the proposed groundwater monitoring well sampling schedule during the implementation of the PSWP. The baseline groundwater samples will be collected from the following wells:

- The newly installed groundwater monitoring well (MW-22);
- The three newly installed electrode wells (EMW-1, EMW-2 and EMW-3);
- All existing accessible onsite groundwater wells; and
- Offsite exterior wells MW-8, MW-10A, MW-11, and offsite interior wells MW-20, and MW-21 (if interior access can be granted by the adjacent property owner).

The monthly monitoring after baseline testing and commencement of pilot testing will include select onsite and offsite wells, as detailed below:

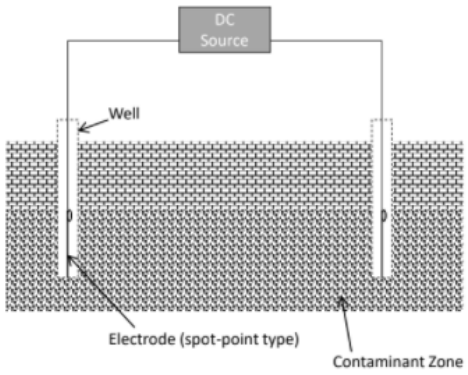
Groundwater Monitoring Well	Rationale	First Month Monitoring	Second Month Monitoring	Third Month Monitoring
MW-13	Source Area/Upgradient of Pilot Testing	CVOCs, Chloride, ethane, ethene, and acetylene	CVOCs, Chloride, ethane, ethene, and acetylene	CVOCs, Chloride, ethane, ethene, and acetylene
MW-6	East/Crossgradient of the Pilot Testing	CVOCs, Chloride	CVOCs, Chloride	CVOCs, Chloride
MW-2	Northwest/Downgradient of the Pilot Testing	CVOCs, Chloride	CVOCs, Chloride	CVOCs, Chloride
MW-8	Cross/Upgradient of Pilot Testing	CVOCs, Chloride	CVOCs, Chloride	CVOCs, Chloride
MW-22 (proposed monitoring well to be installed as part of this PSWP)	Monitoring well Directly in the Pilot Testing Area	CVOCs, Chloride, ethane, ethene, and acetylene	CVOCs, Chloride, ethane, ethene, and acetylene	CVOCs, Chloride, ethane, ethene, and acetylene
EMW-1, EMW-2 and EMW-3 (Proposed electrode wells installed as part of this PSWP)	Treatment well testing to determine effectiveness directly in the treatment well.			CVOCs, Chloride

All groundwater monitoring well on the Subject Property will be gauged in order to updated contour maps during the PSWP period. The groundwater sample will be collected via low-flow sampling methods and sent to the laboratory for analysis of CVOCs via EPA Method 8260 and chloride. Field parameters, including pH, dissolved oxygen, oxidation-reduction potential, turbidity and conductivity will be measured with a water quality meter and recorded onto field sheets prior to sample collection.

2.7 TECHNICAL DESCRIPTION OF E-REDOX REDUCTION

E-Redox® technology is a relatively new remedial technology that utilizes bio-electro-chemical processes in order to achieve rapid degradation of contaminants by manipulating and accelerating transfer of electrons within the impacted media including groundwater, soils, and sediments. E-Redox® would be applied in-situ at the Subject Property and installed within existing monitoring wells and newly installed boreholes as needed. E-Redox® is a patented technology developed AET. For chlorinated solvents, E-Redox®-In is generally used for reductive de-chlorination, specifically TCE and PCE destruction. The technology relies on connection to a DC power source in order generate an electric field. See diagram[1] below.

[1] Low-intensity Electrochemical Redox Reactions for Contaminant Remediation in Clay & Silt Matrices, Song Jin, Ph.D., CHMM, Advanced Environmental Technologies, LLC, Fort Collins, Colorado



E-Redox®-In generates a low-voltage gradient electric field in between the electrodes uniformly inducing reduction and oxidation (redox) reactions. The soil particles become micro-electrodes triggering numerous red-ox reactions. Additionally, microbial activities within the electric field can also be stimulated by the red-ox reactions, which further enhances contaminant degradation or transformation. E-Redox®-In is applicable to highly oxidized contaminants such as chlorinated solvents. It has also been shown to be highly effective at complete degradation, without leaving intermediate breakdown products such as cis-1,2-dichloroethylene (cis-1,2-DCE) and vinyl chloride.

According to a Case Study published by AET, a field pilot test was conducted at a chlorinated solvent-contaminated site in Utah, where the primary COCs were TCE, DCE, and vinyl chloride. The E-Redox®-In system was applied to groundwater and sediments, and results indicated enhanced back diffusion, which would result in high reduction rates indicated by high production of ethene. After 47 days, the ethene production was 15 times higher than the baseline concentration, which results in equivalent TCE reduction rates of 1,187 and 876 micrograms per liter per day (µg/L/day), respectively. Another case study demonstrated the effectiveness on PCE contaminated groundwater degradation using laboratory testing with impacted groundwater. Direct current (DC) and alternating currents (AC) sources provided the electrical requirements for the E-Redox®-In electric field. After 40 hours, the test yielded 53% reduction of PCE. Based on the case studies, and a consultation with AET, EBI and the remedial engineer believe that E-Redox®-In has the potential to be an effective remedial strategy at the Subject Property.

Since E-Redox®-In operates well by transferring electricity through soil media, low permeable soils are preferable in order to increase the radius of influence of effectiveness. At the time of this PSWP, AET anticipates starting with an assumed 15-foot radius of influence. The soil media at the Subject Property is comprised of very tight, low permeability silts and clays within the water bearing strata, hence the slow groundwater advection velocity.

For the Pilot Testing planned as detailed in this PSWP, three sets of opposite poled electrodes, called an anode and cathode, will be inserted into the three newly installed groundwater electrode wells. The electrodes will be connected to to electrical wires through the top of the well casing. The wiring connects back to the DC power source through the conduit installed in the trenches. Low voltage will be applied to the electrodes, which will cause an electric field (voltage gradient), which will induce ionic movement. This ionic movement consists of cations moving to the cathode, and anions moving to the anode. The voltage to each well can be controlled from the DC power source and will be set based on AETs experience with similar applications.

2.8 DUST, ODOR, VAPOR, AND NUISANCE CONTROL PLAN

The following sections will identify all the air monitoring protocols that will be completed during the PSWP. The air monitoring is only anticipated to be completed during invasive subsurface activities including

the groundwater monitoring well and soil vapor/ vacuum monitoring point installation and trenching for electrical wire connections. Once the wells are installed and the electrodes are placed, no other invasive subsurface work that has the potential to generate dust, odor, vapor, or other nuisance is anticipated.

2.8.1 CAMP Details

In accordance with the Health and Safety Plan (See Section 2.9), the CAMP will be implemented during all ground intrusive activities, which during this scope of the PSWP, which will consist of installation of groundwater monitoring wells and soil vapor/ vacuum monitoring points and trenching between the wells and the electrical connection at the front of the tenant space. The CAMP will consist of an upwind, downwind, and work zone air monitoring system, consisting of real-time monitoring of VOCs and particulates.

2.8.2 Odor and Vapor Control Plan

In addition to the CAMP, EBI will monitor for the presence of odors during subsurface work, including the drilling and the trenching work. The groundwater monitoring well installation is anticipated to be completed in two days and will minimally disturb the subsurface soils. The trenching will be completed following the well installation and will take up to three days. Based on the depth of the trenching (approximately 6-12-inches bgs), minimal dust, odor, vapor, or other nuisance is anticipated. However, CAMP air monitoring will be completed during this work, until the trenches are repaired. The total duration of intrusive ground work is anticipated to take approximately 1-week to complete.

Total VOCs will be monitored with a hand-held PID. If the action level is exceeded and adequate ventilation cannot be provided, work will cease and the potential affected portion of the work area will be evacuated until adequate mechanical ventilation can be implemented to control the hazard. The following actions will be taken based on total VOC levels measured:

- If total VOC levels exceed 5 ppm above background for the 15-minute average at the work zone, work will be temporarily halted and monitoring continued. If levels readily decrease (per instantaneous readings) below 5 ppm above background, work will resume with continued monitoring.
- If total VOC levels at work zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work will resume provided that the total VOC level is below 5 ppm above background for the 15-minute average within the work zone.
- If the total VOC level is above 25 ppm in the work zone or at the perimeter of the work area, excavation will be stopped and a re-evaluation of activities will be initiated. The source of vapors will be identified, corrective actions will be taken to abate emissions, and monitoring will continue. After these steps, work will resume provided that the total VOC level is below 5 ppm above background for the 15-minute average within the work zone.

All 15-minute readings will be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

2.8.3 Dust Control Plan

Dust management during drilling and trenching will include:

- Exercising extra care during dry and high-wind periods.

- Dust suppression consisting of the use of water for wetting trenching areas on an as-needed basis during subsurface work. All asphalt and concrete cutting will be conducted using wet cutting methods.

Dust emissions will be monitored and controlled as identified through the collection of dust data collected through the air monitoring stations employed as per the CAMP. 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 will be utilized. The following actions will be taken based on visual observations and measured dust levels using a quantitative meter:

- If the work zone particulate level is 100 µg/m³ greater than background for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression must be employed. Work may continue with dust suppression techniques provided that work zone particulate levels do not exceed 150 µg/m³ above the background level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, work zone particulate levels or the particulate levels measured at the downgradient air monitoring station occurring are greater than 150 µg/m³ above the background level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the work zone particulate concentration to within 150 µg/m³ of the background level and in preventing visible dust migration.

If nuisance odors or vapors are identified outside of the building structure or off-site, work will be halted and the source of odors will be identified and corrected. Work will not resume until nuisance odors or vapors have been abated.

NYSDEC and NYSDOH will be notified of all odor and vapor events and of all other complaints about the project. Implementation of odor and vapor controls, including halting work, will be the responsibility of the Field Manager. Implementation of odor and vapor controls will be the responsibility of the Contractor.

NYSDEC and NYSDOH will be notified within 24-hours in the event of any exceedances of the CAMP action levels that require corrective action. These corrective actions taken will be reported to the NYSDEC and NYSDOH within 24-hours and also included in the field daily reports.

2.8.4 Other Nuisances

Noise control will be exercised during the drilling and trenching work, including setting up an exclusions zone to keep customers of the tenant space away from the active work areas.

2.9 HEALTH AND SAFETY PLAN (HASP)

The HASP provides a mechanism for establishing on-site safe working conditions, safety organization, procedures, and personal protective equipment requirements. The HASP meets the requirements of 29 CFR 1910.120. The HASP includes, but is not limited to, the following components listed below:

- Organization and identification of key personnel
- Training requirements
- Medical surveillance requirements
- List of site hazards
- Excavation safety

- Work zone descriptions and monitoring procedures
- Personal safety equipment and protective clothing requirements
- Contingency plan
- Safety data sheets

The CIH certified HASP can be found in Appendix B.

2.10 QUALITY ASSURANCE PROJECT PLAN (QAPP)

The following section details the QAPP in accordance with the NYSDEC DER-10 Technical Guidance as applies to the activities to be completed as part of this PSWP. This QAPP will summarize:

- The project scope and project goals for this PSWP and its importance in the overall remedial goals of the Subject Property
- Project organization including the designation of a project manager and the quality assurance officer (QAO)
- Sampling procedures, data quality usability objectives, and equipment decontamination procedures
    - Including a site map showing sample locations
    - Analytical Methods/Quality Assurance Summary Table

2.10.1 Project Scope and Goals

The scope of work to be completed as part of this PSWP is detailed as follows:

- A geophysical survey of the Subject Property in order to document subsurface utilities throughout the Subject Property and clear the locations to be used for the electrode, groundwater monitoring wells and soil vapor/ vacuum monitoring points.
- Site mobilization for the groundwater and electrode monitoring well installation, shallow vapor well installation, and trenching for the electrical connections for use in the pilot testing.
- Completion of one baseline round of groundwater sampling via the low-flow purging method of the newly installed groundwater monitoring well and selected existing groundwater monitoring wells to update the CSM and to provide a basis of support for or against the effectiveness of the proposed pilot study.
- Following the baseline sampling event. EBI and AET will mobilize to install the electrodes into the three newly electrode wells and connect to electricity at the Subject Property. Following this installation, the pilot testing will commence. A detailed description of the remedial technology is in Section 2.7.
- The pilot testing will continue for a minimum of 3 months. Sampling of selected groundwater wells around the pilot testing area will be completed after one, two, and three months of operation.
- After the completion of the pilot testing for 3 months, EBI, AET and the remedial engineer will assess the data to determine the feasibility of the technology, and report the findings in a revised AAR.

2.10.2 Project Organization

The following table outlines an organizational chart for relevant contacts and personnel involved in the PSWP:

Title	Name	Entity	Contact Information
Professional Engineer	Dr. Anthony E. Farmand, PhD, PE	EBI	afarmand@ebiconsulting.com
Project Manager	Brian Kilcoyne	EBI	bkilcoyne@ebiconsulting.com
Field Manager	Christine B Madsen	EBI	cmadsen@ebiconsulting.com
AET Project Manager	Song Jin	AET	songjin@aetecs.com
NYSDEC Project Manager	Joshua Vaccaro	NYSDEC	Joshua.Vaccaro@dec.ny.gov
Site Representative	Rabbi Shlomo Noble	Southside Plaza LLC	rabbinoble@gmail.com
Emergency	Ambulance	Jamestown Fire Department	911

2.10.3 Sampling Procedures

During the scope of the PSWP, soil and groundwater will be sampled and sent for laboratory analysis. The groundwater samples will be collected from the following wells:

- The newly installed groundwater monitoring well (MW-22);
- The three newly installed electrode wells (EMW-1, EMW-2 and EMW-3);
- All existing accessible onsite groundwater wells; and
- Offsite wells MW-8, MW-10A, MW-11, MW-20 and MW-21.

The groundwater sample will be collected via low-flow sampling methods and sent to the laboratory for volatile organic compounds (VOCs) + Tentatively Identified Compounds (TICs) via EPA Method 8260. This round of sampling will constitute the baseline sampling event.

The groundwater sampling will be completed using low flow sampling methodology, which includes the collection of groundwater quality parameters while purging the water a rate no greater than 200 milliliters per minute (mL/min). Bladder or peristaltic pumps will be used to reduce the volatilization of the volatile organic compounds, which are the contaminants of concern to be sampled. During purging, water quality parameters will be collected via a calibrated inline meter (YSI or Horiba multiparameter meter, or equivalent) for temperature, dissolved oxygen, ORP pH, conductivity, and turbidity. Once the parameters have stabilized (see Appendix C field sampling sheet for specific stabilization criteria), the groundwater sample will be collected directly from the tubing, before the water quality meter. Groundwater samples will not be collected fewer than 30 minutes after the start of purging, and if the parameters do not stabilize, the groundwater samples will be collected after a total of 3 volumes of water have been purged.

The following groundwater monitoring wells will be sampled, along with other quality assurance (QA)/ quality control (QC) samples in accordance with NYSDEC DER-10 Technical Guidance.

Groundwater Monitoring Well	Matrix	Frequency	Analytical Method and Analysis	Sampling Container and Preservative	Sample Holding Time
MW-1, MW-3, MW-4, MW-5, MW-7, MW-12, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19	Groundwater	Once During Baseline	CVOC List* via EPA Method 8260D	2 x 40 millimeter (mL) capped Teflon septum glass vials with hydrochloric acid (HCl) filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice

Groundwater Monitoring Well	Matrix	Frequency	Analytical Method and Analysis	Sampling Container and Preservative	Sample Holding Time
			Chloride via EPA Method 300/SW846 9056	Plastic 250ml unpreserved	28 days – Keep sample in ice chest at 4°Celsius using ice
MW-13, MW-6, MW-2, MW-8, MW-22	Groundwater	Baseline, 1st, 2nd, 3rd Month	CVOC List* via EPA Method 8260D	2 x 40 mL capped Teflon septum glass vials with HCl filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice
			Chloride via EPA Method 300/SW846 9056	Plastic 250ml unpreserved	28 days – Keep sample in ice chest at 4°Celsius using ice
MW-13 and MW-22	Groundwater	Baseline, 1st, 2nd, 3rd Month	Ethane, ethene, and acetylene via EPA Method EPA RSKSOP-175, Revision 2, May 2004	2 x 40 mL capped Teflon septum glass vials with HCl filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice
EMW-1, EMW-2, EMW-3	Groundwater	Baseline and 3rd Month	CVOC List* via EPA Method 8260D	2 x 40 mL capped Teflon septum glass vials with HCl filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice
			Chloride via EPA Method 300/SW846 9056	Plastic 250ml unpreserved	28 days – Keep sample in ice chest at 4°Celsius using ice
Duplicate Sample	QA/QC - Groundwater	1 per 20 samples collected	CVOC List* via EPA Method 8260D	2 x 40 mL capped Teflon septum glass vials with HCl filled completely without air or bubbles (fill 3 vials for backup)	14 days – Keep sample in ice chest at 4°Celsius using ice
Matrix Spike/ Matrix Spike Duplicate (2 samples)	QA/QC - Groundwater	1 per 20 samples collected			
Field Blank	QA/QC	1 per sampling day			
Trip Blank	QA/QC	1 per cooler			

* CVOC List consists of PCE, TCE, DCE, Vinyl Chloride, cis/trans- DCE

Is elevated PID readings and/or field indicators/ odors are encountered in soil samples collected from the new well locations, soil samples will be collected and submitted for laboratory analysis of CVOCs.

Soil Boring/ Groundwater Monitoring Well	Matrix	Frequency	Analytical Method and Analysis	Sampling Container and Preservative	Sample Holding Time
EMW-1, EMW-2, EMW-3	Soil	Once During Well Installation	CVOC List* via EPA Method 8260D	2 x 40 millimeter (mL) capped Teflon septum glass vials with deionized water and 1x40 mL capped Teflon septum glass vial with methanol	14 days – Keep sample in ice chest at 4°Celsius using ice
Duplicate Sample	QA/QC - Soil	1 per 20 samples collected	CVOC List* via EPA Method 8260D	2 x 40 millimeter (mL) capped Teflon septum glass vials with deionized water and 1x40 mL capped Teflon septum glass vial with methanol	14 days – Keep sample in ice chest at 4°Celsius using ice
Matrix Spike/ Matrix Spike Duplicate (2 samples)	QA/QC - Soil	1 per 20 samples collected			
Trip Blank	QA/QC	1 per cooler			

* CVOC List consists of PCE, TCE, DCE, Vinyl Chloride, cis/trans- DCE

See Figure 2 for the locations of the existing groundwater monitoring wells. The proposed groundwater monitoring wells are shown on Figure 3.

2.10.4 Equipment Decontamination

The project activities that will require decontamination consist of the drilling equipment used for the installation of the groundwater monitoring wells and soil vapor/ vacuum monitoring points, and any equipment that is reused between groundwater well gauging and sampling.

During drilling, the drilling rods will be decontaminated between boring locations to avoided cross contamination. During groundwater gauging, the water level will be decontaminated between wells. During groundwater sampling, any equipment that is not strictly dedicated, such as tubing, bailers, or bladders, will be disposed of at the end of each use on one single well location. Re-used equipment such as the water level meter and the water quality parameter meter will be decontaminated between wells.

The field personnel will always start gauging wells, and sampling in the source area, and move from groundwater monitoring wells containing lower concentrations of contamination to areas of higher contamination. Depth to water readings will be collected prior to the collection of any independent groundwater samples. Depth to bottom readings will be completed at the end of sampling collection on a well-by-well basis.

Any sampling equipment used should preferably be laboratory cleaned, packaged, and dedicated for use at one site and sample location for each day of sampling activity.

1. Decontamination of all equipment should be completed prior to the start of any drilling
2. Establish a decontamination station on plastic sheeting consisting of three buckets for decontamination:
    2.1. Rinse with tap or distilled water over a bucket
    2.2. Rinse with Alconox mixed with tap or distilled water over a bucket to catch initial rinsate
    2.3. Rinse with tap or distilled water over a Bucket to catch rinsate
    2.4. Final rinse the equipment with water over a bucket

3. Drillers should don new gloves, then decontaminate all drilling rods to be used and the stainless steel macrocore liner prior to use.
   3.1. Knock loose all loose dirt and soil with a brush prior to liquid decon
   3.2. Don new gloves
   3.3. Decon the metal equipment using the three buckets decon procedure.
4. All equipment should be thoroughly decontaminated between borehole locations.

2.10.5 Data Reduction, Verification and Reporting

Verification of data obtained from sampling will be performed by the Project Manager who will determine the validity of the data by comparing the actual procedures used for field measurements, sampling, and custody, as documented on forms and in the field log book, with those prescribed in the work plan and/or approved by the Project Manager.

2.10.6 Data Usability Summary Report

As part of this PSWP, a Data Usability Summary Report or DUSR will be prepared to summarize the groundwater sampling and analytical results for the Site. The primary objective of the DUSR is to determine whether the analytical data meets Site specific objectives for data quality and data use.

The DUSR will be prepared following the guidelines provided in DER-10 Technical Guidance for Site Investigation and Remediation, May 2010, Guidance for the Development of Data Usability Summary Reports. The complete validated analytical results (ASP Category B Deliverables) and Form 1s will be provided in the DUSR to be incorporated in the AAR

2.10.7 Electronic Data Deliverables

The revised AAR will be provided to NYSDEC and DOH will be submitted in the Department's most current electronic data deliverable (EDD) format upon completion of the pilot study. All analytical data will be summarized in data tables compared to applicable regulatory standards, along with complete laboratory analytical reports.

3 SCHEDULE

Following NYSDEC approval of this PSWP, the installation of the various components of the E-Redox® pilot testing system, including baseline testing, is expected to take approximately 4-6 weeks to complete. The system will then run for a minimum of 3-months. Following the completion of the pilot test, the findings will be included in a revised AAR which will be submitted to the NYSDEC for approval. A detailed tentative project schedule is presented as a Gannt Chart included in Appendix D.

3.1 NOTIFICATION

The NYSDEC will be notified at least 7 days prior to commencement of field work related to the PSWP. A pre-construction meeting will be coordinated between the property owner, EBI, and the NYSDEC. This meeting must take place prior to the implementation of this PSWP.

4 REPORTING

4.1 PSWP REPORTING

EBI will complete and submit a status report to update the NYSDEC of the completion of the pilot testing field installation activities and baseline testing. This report will also include the field documents stipulated below. Following installation of the test wells and E-Redox® electrodes, pilot testing will commence. EBI will prepare monthly status reports to document the progress of the pilot testing, including any deviations to the approved PSWP.

The final report of the pilot study will specifically include the following field notes as attachments:

- Boring logs;
- Well construction logs;
- Well development logs; and
- Well sampling purge logs

4.2 REVISED ALTERNATIVES ANALYSIS REPORT

The results of the E-Redox® pilot test will be summarized in a revised AAR. Previous comments provided in the DEC comment letter dated October 21, 2021, will also be addressed in the revised AAR. At the conclusion of the pilot testing, if successful remediation is demonstrated, a remedial approach including use of full scale E-Redox® treatment technology, along with targeted soil excavation to remediate metals in soil will be the suggested preferred alternative.

If after the pilot testing the remedial success is indeterminate or not successful, the Alternative Analysis Report will be revised, and the feasibility of other remedial alternatives will be re-evaluated.

4.3 REMEDIAL ACTION WORK PLAN

A Remedial Action Work Plan will be prepared outlining the selected remedial alternative following approval of the revised AAR by the NYSDEC and NYSDOH.

APPENDIX A
FIGURES

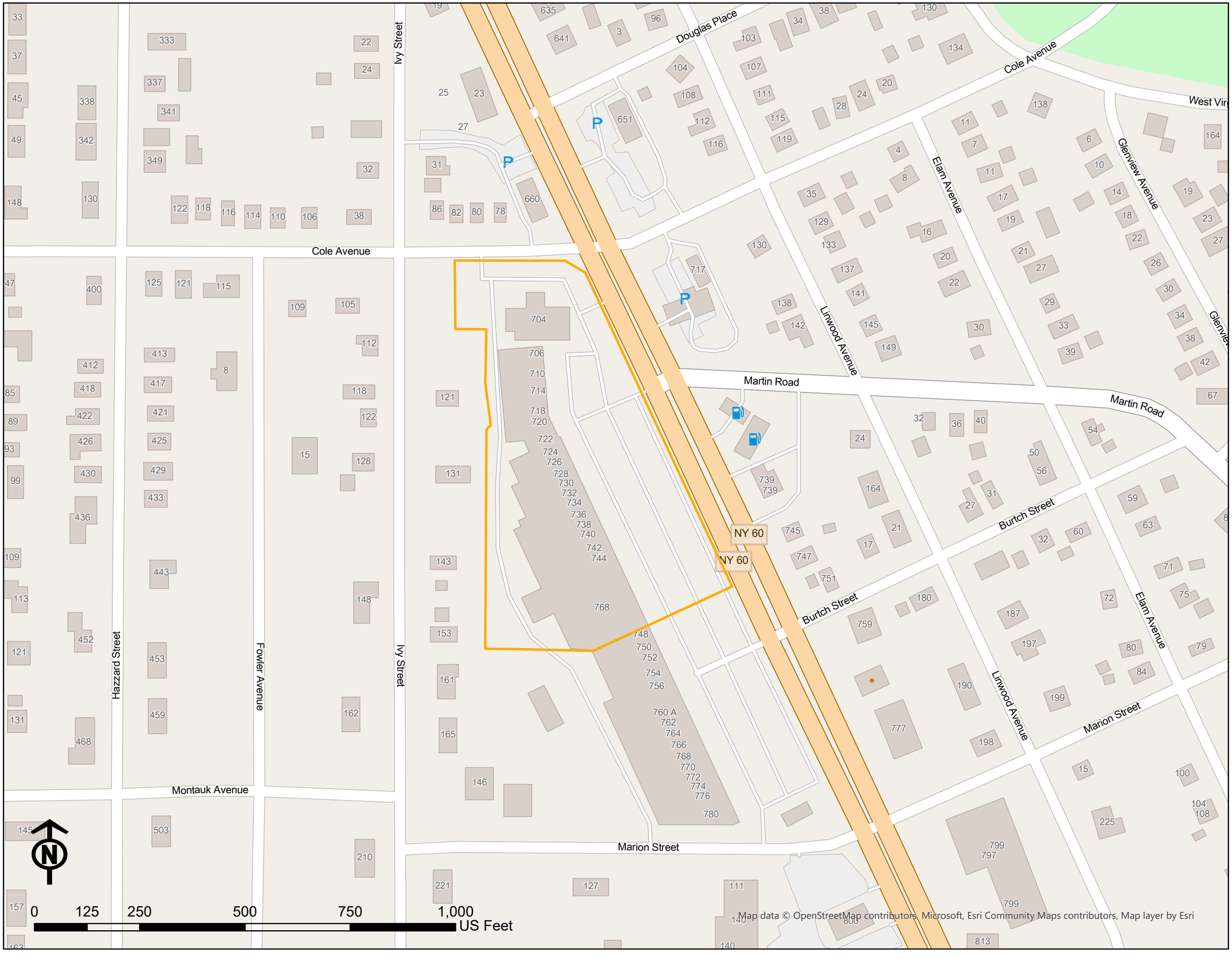


Figure 1
Site Location Map

Subject Parcel

Southside Plaza
704-744 Foote Avenue
Jamestown, NY 14701

USGS 24K Quad:
Jamestown, NY 1986

EBI GIS Date: 2/3/2022

EBI PN: 1220000038

EBI Engineering & Architecture

Name	Label
McDonald's	704 Foote Ave.
UPS Store	708 Foote Ave.
Spa Nails	710 Foote Ave.
Dollar Tree	716 Foote Ave.
Cellular One	720 Foote Ave.
Key Bank	730 Foote Ave.
Tops	738 Foote Ave.

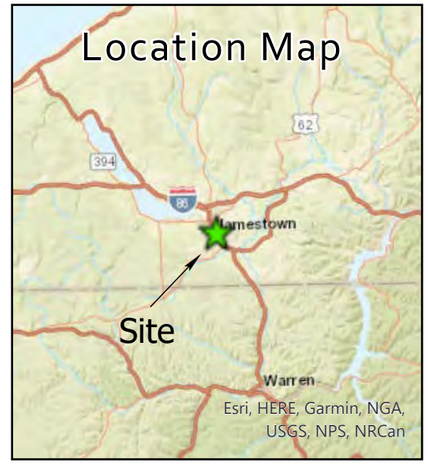


Figure 2
Site Plan

- Subject Parcel
- Tenants
- SSDS Suction Point
- SSDS Piping

Monitoring Well
(labeled on map as MW-xx)

- Existing
- Proposed

Southside Plaza
704-744 Foote Avenue
Jamestown, NY 14701

USGS 24K Quad:
Jamestown, NY 1986

EBI GIS Date: 4/25/2022

EBI PN: 1221000044

EBI Engineering & Architecture

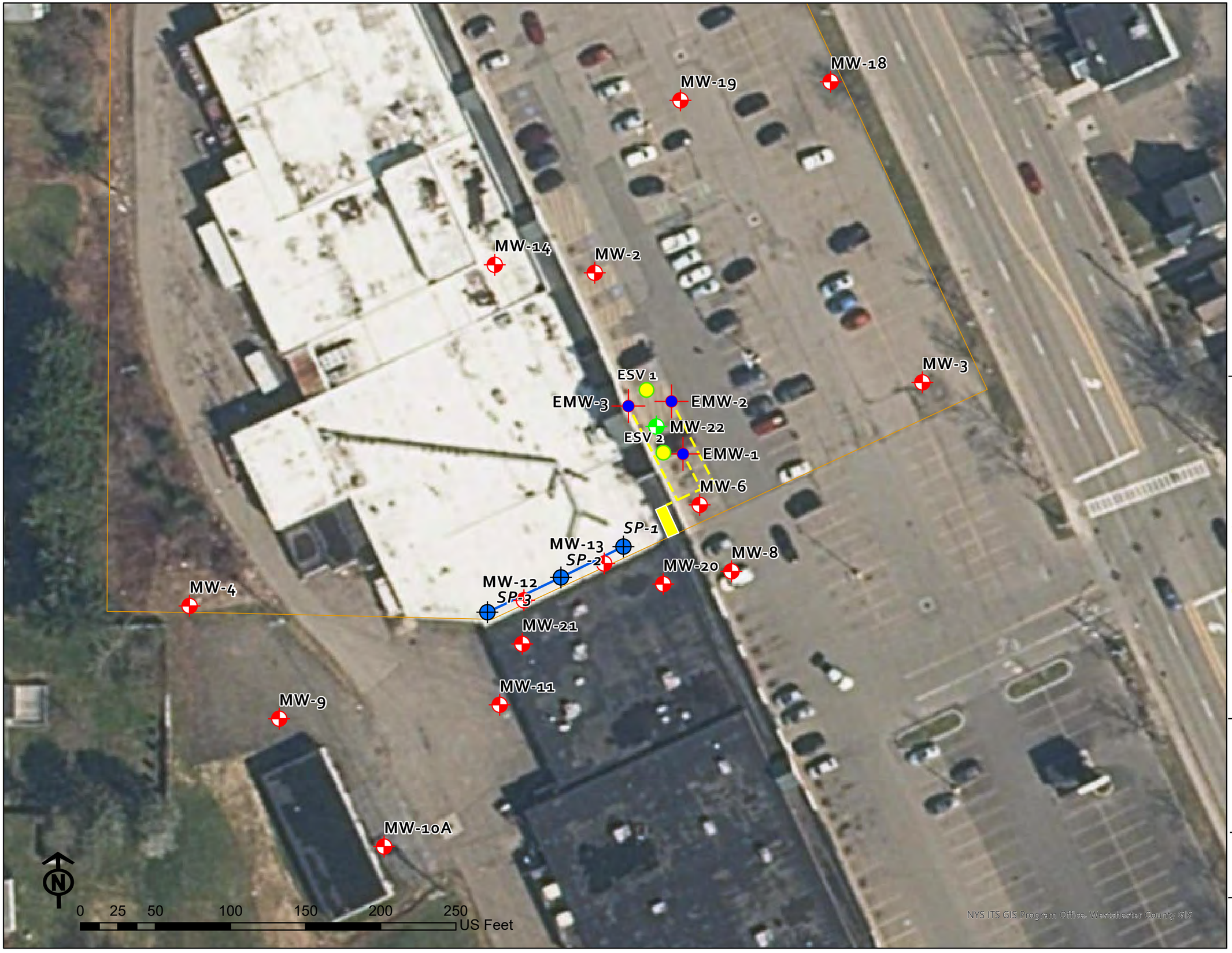


Figure 3
Proposed Pilot Testing Study Area

Subject Parcel

Monitoring Well
(labeled on map as MW-xx)

- Existing
- Proposed
- Proposed Electrode Well
- Electrical Connection Unit
- Electrical Trenching
- Proposed Soil Vapor Monitoring
- SSDS Suction Point
- SSDS Piping

Southside Plaza
704-744 Foote Avenue
Jamestown, NY 14701

USGS 24K Quad:
Jamestown, NY 1986

EBI GIS Date: 4/25/2022

EBI PN: 1221000044

EBI Engineering & Architecture

APPENDIX B
HEALTH AND SAFETY PLAN

EBI Engineering & Architecture

21 B Street
Burlington, MA 01803
Tel: (781) 273-2500
Fax: (781) 273-3311
www.ebiconsulting.com

SITE-SPECIFIC HEALTH & SAFETY PLAN

FOR ACTIVITIES FOR THE PILOT STUDY WORK PLAN

Project Name

704-744 Foote Avenue
Jamestown, New York, 14701

EBI Project No. 1221000044

May 27, 2022

Prepared for:

Southside Station LLC
31 Sylvan Road
Rochester, New York, 14701

Prepared by:

EBI Engineering PC dba: EBI Engineering & Architecture
21 B STREET
Burlington, MA 01803
(800) 786-2346

EBI Engineering & Architecture

EBI Engineering & Architecture

21 B Street
Burlington, MA 01803
Tel: (781) 273-2500
Fax: (781) 273-3311
www.ebiconsulting.com

May 27, 2022

Rabbi Shlomo Noble
Southside Station LLC
31 Sylvan Road
Rochester, New York

Subject: **Site-Specific Health and Safety Plan –**
For Construction Activities Involving Disturbance of Soil and Groundwater
Southside Plaza Site BCP Site No. C907043
704-744 Foote Avenue
Jamestown, New York, 14701
EBI Project #1221000044

Dear Rabbi Shlomo Noble:

EBI Engineering PC dba: EBI Engineering & Architecture (EBI) is submitting the enclosed Site-Specific Health and Safety Plan (HASP) on behalf of Southside Station LLC for the above referenced Project Site.

The purpose of this HASP is to define and address the potential health and safety hazards that may be involved in the operations to be conducted at the Project Site associated with potentially CVOC and metal impacted soil and groundwater. This HASP defines the requirements and designated protocols to be followed at the Project Site during construction activities that involve the disturbance and handling of soil at the Project Site. The HASP was developed in consideration of current safety standards as defined by EPA/OSHA/NIOSH, health effects and standards for contaminants, and procedures designed to account for the potential for exposure to unknown substances.

This HASP does not include the oversight of the onsite excavation and construction activities or implementation of this HASP by EBI.

If you should have any questions or concerns regarding this submittal, please feel free to contact Christine B Madsen at 862-202-2213.

Sincerely,
EBI CONSULTING

Christine B. Madsen
Project Manager

Edwin M. Jean
Certified Industrial Hygienist
(202) 438-1680

Brian Kilcoyne
Senior Project Manager
(781) 418-2349

BOARD FOR GLOBAL EHS CREDENTIALING INCORPORATED
CERTIFICATE NO. 11512 CP
EXPIRES 12-1-2023
EDWIN M. JEAN, CIH

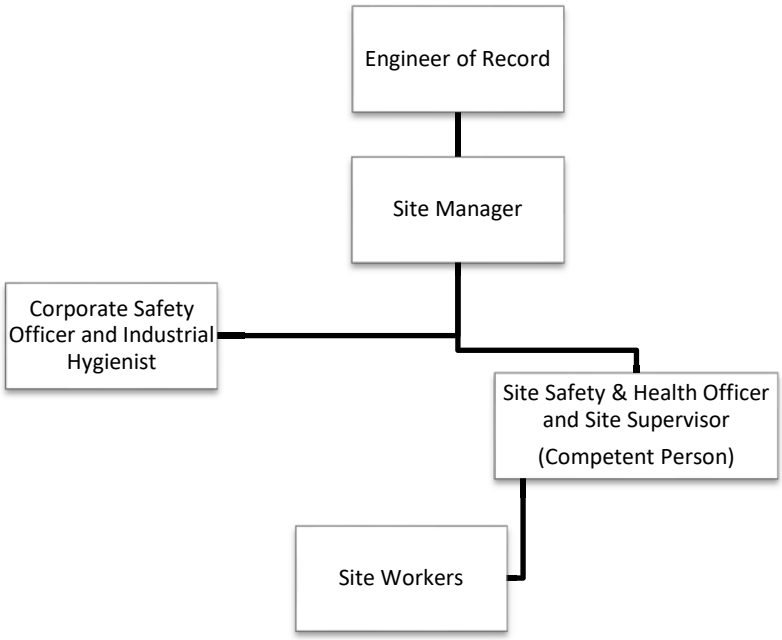
The Industrial Hygienist and Corporate Safety Officer is: Edwin M. Jean, EBI
Designated Corporate Safety Officer abd
Designated Certified Industrial Hygienist

The Corporate Safety Officer is responsible for the overall health and safety on the project and coordinates directly with the Site Safety and Health Officer. The Industrial Hygienist is responsible for preparation of the Health & Safety Plan.

Site Worker

The Site Worker is responsible to the Site Supervisor and are those Contractor employees, representatives and authorized visitors entering the Exclusion Zone and/or Contaminate Reduction Zone. Site Workers are responsible for compliance with the Health & Safety Plan, using proper Personal Protection Equipment and reporting unsafe acts and conditions. Site Worker shall comply with the work safety/health instructions of the Site Manager, Site Supervisor, Site Safety and Health Officer, and/or Industrial Hygienist.

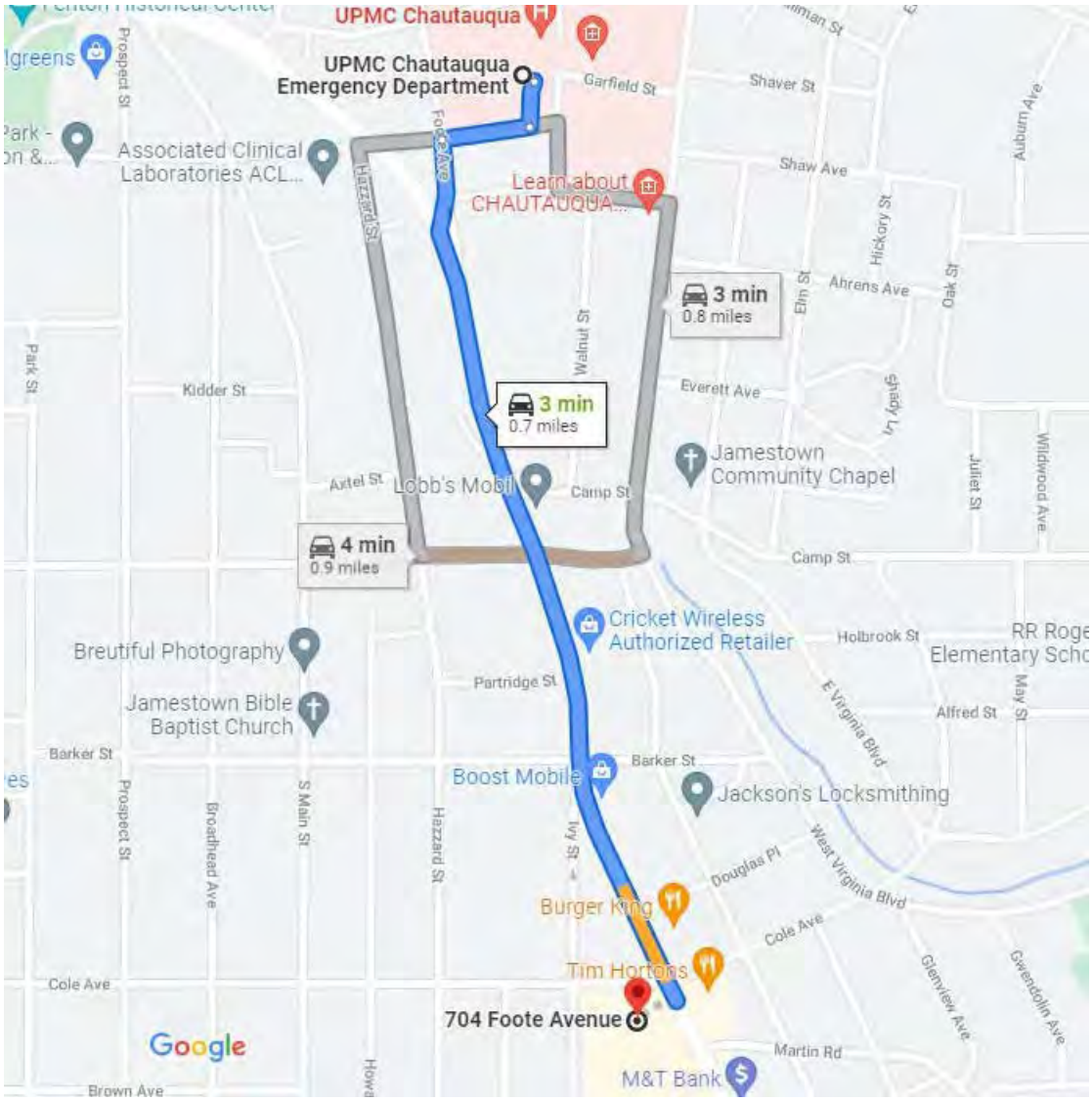
The organizational structure for the Site is reiterated in the chart below.



HOSPITAL DRIVING DIRECTIONS

UPMC Chautauqua Emergency Department
704 Foote Ave
Jamestown, NY, 14701
(716) 664-8120

Head south toward Prather Avenue
Turn right onto Pranther Avenue
Turn left onto Foote Avenue



UPMC Chautauqua Emergency Department
207 Foote Ave, Jamestown, NY 14701

1. Head south toward Prather Ave

171 ft

2. Turn right onto Prather Ave

328 ft

3. Turn left onto Foote Ave
Destination will be on the right

0.6 mi

704 Foote Ave
Jamestown, NY 14701

APPENDIX C
FIELD SAMPLING SHEETS

APPENDIX D
SCHEDULE