

INTERIM REMEDIAL MEASURES WORK PLAN

CURTISS MALT HOUSE PROJECT BCP SITE NO. C915382

1100 NIAGARA STREET
BUFFALO, ERIE COUNTY, NEW YORK

Prepared for:

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1.0 INTRODUCTION

Jenesis Development LLC has obtained an executed Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) as a volunteer for the Curtiss Malt House Project located in the City of Buffalo, Erie County, New York (i.e., the Site). The Site is associated with Brownfield Cleanup Program (BCP) Index No. C915382-9-22 and BCP Site No. C915382. Jenesis Development LLC has contracted Brydges Engineering in Environment and Energy (BE3) to complete an Interim Remedial Measures Work Plan (IRMWP). See **Figures 1 and 2** for Site location information.

This IRMWP was completed in accordance with NYSDEC Department of Environmental Remediation (DER)-10, Technical Guidance for Site Investigation and Remediation and generally includes the following: (1) installation of a modified sub-slab depressurization system (SSDS), (2) excavation/removal of impacted fill/soils and off-site disposal and (3) registration/removal of a known underground storage tank (UST). See **Figure 10** for general IRM work locations.

Several environmental studies/investigations have been completed at the Site which were considered when formulating this IRM. The following relevant information was noted:

- A potential soil vapor intrusion (SVI) concern was identified in the northern Site building (Oliver Gear) which spans the 1112 and 1114 Niagara Street parcels.
- Impacted fill/soils were generally observed across the Site.
- A UST was noted on the 1106 Niagara Street parcel.

1.1 SITE DESCRIPTION

The 2.686-acre Site is composed of the following five parcels located in the City of Buffalo, Erie County, New York:

Parcel Address	Section	Block	Lot	Acreage
1100 Niagara Street	99.41	1	14.111	1.04
1106 Niagara Street	99.41	1	14.2	0.457
1110 Niagara Street	99.41	1	14.12	0.102
1112 Niagara Street	99.41	1	14.112	0.389
1114 Niagara Street	99.41	1	13	0.738

The Site is located at the northwest corner of the intersection of Niagara Street and Albany Street and is bounded to the east by Niagara Street, the west by a railroad easement and Interstate 190, the north by a parking lot and the south by greenspace and asphalt parking.

Generally, the majority of the Site currently contains several vacant abutting buildings with sections ranging from one to three stories in height. The most southern and eastern portion of the Site is composed of some greenspace and asphalt areas. A driveway traverses the northern border of the Site and a parking lot occupies the northwest corner.

1100 Niagara Street contains the former Curtiss Malt House which is a large two-story brick industrial building with a three-story brick addition in the rear. West of the building is greenspace and east and south a combination of unimproved grassy/weed covered areas along with some blacktop surface areas.

1106 Niagara Street primarily contains a vacant building (Modern Heat Building) formerly owned by Modern Heat Treating and Forging, Inc. East of the building is blacktop with some limited greenspace.

1110 Niagara Street contains the western portion of the former Modern Heat building.

1112 Niagara Street predominantly contains a one-story former industrial building that is part of the Modern Heat Building. A concrete block wall exists on the eastern end of the building which is likely a partition wall separating this portion of the building from the larger building. Some limited greenspace exists west of the building.

1114 Niagara Street is occupied by a one-story former industrial building which is currently vacant. The building is connected to the 1112 Niagara Street portion of the Modern Heat Building by a narrow corridor. A driveway traverses the northern border and a parking lot occupies the northwest corner with some limited greenspace furthest west. A small alleyway exists immediately south of the building.

1.2 SITE HISTORY

1100 Niagara Street was vacant until at least 1889. In 1899, the property was developed as the C.G. Curtiss Malting Drum House. By 1925 the property had been developed as the Co-Operative Grange League Federation Exchange, Inc. which consisted of a 190-foot high steel, brick, cement and wood building that was destroyed by fire in 1927. It was subsequently rebuilt using the existing foundations, concrete floors and masonry walls and was reconstructed entirely of fireproof steel at a greatly reduced height (present height). The property remained the Co-Operative Grange League Federation Exchange until at least 1981. By 1986, the property was vacant. An art gallery was located in the rear of the facility during the late 1980's, however, it is unknown when the building was permanently vacated.

1106, 1110 and 1112 Niagara Street were historically vacant until sometime between 1938 and 1951 when a warehouse owned by the Co-Operative GLF Mills Inc. was constructed. Sometime between 1981 and 1986 ownership was transferred to Modern Heat Treating and Forging, Inc.

1114 Niagara Street was occupied by a dwelling and stable circa 1889 which were subsequently demolished sometime between 1899 and 1925. By 1935, a machine shop under the ownership of Oliver Gear and Machine Co., Inc. was constructed on the eastern portion of the parcel. In 1983, the building was expanded west into the current configuration.

1.3 CONTEMPLATED USE OF THE SITE

The proposed project involves the redevelopment of the five parcels. ROAR Logistics, a subsidiary of Jenesis Development LLC, will occupy the existing buildings at 1112 and 1114 Niagara Street for office space, with parking located at 1106 and 1110 Niagara Street and along the perimeter of 1100 Niagara Street. The 1100 Niagara Street property will be redeveloped as a mixed-use facility incorporating event space and residential use.

2.0 PREVIOUS ENVIRONMENTAL ASSESSMENTS

Various previous environmental assessments/investigations have occurred on the Site which have been utilized to formulate this IRM.

Phase I ESA – 1100 Niagara Street – October 2012

A Phase I Environmental Site Assessment (ESA) was conducted for 1100 Niagara Street in October 2012. The following Recognized Environmental Conditions (RECs) were identified in the building interior:

- There is a spill that occurred in the storage building from a leaking 55-gallon drum of oil. While the oil was cleaned up, the staining on the floor and wall remains.
- There are approximately a dozen fluorescent light ballasts in an electric/tool room located in an upstairs room to the left of the main building entry way.

The following RECs were found outside of the building on the property:

- Soil as well as construction and demolition debris have been dumped along the building between the south wall of the storage area and Albany Street. Used medical syringes were also observed scattered around the debris piles. The origin of this material is from off-site and it is unknown if this material may have contamination associated with it.
- There are two propane tanks on site near the front entry way to the building; a 20-pound cylinder just to the right of the entry way, and a 40-pound cylinder alongside of the office building near the entry way to the main building.

The following are Suspect Environmental Conditions (SECs) that were observed or discovered within the interior of the building during the completion of this Phase I ESA:

- The interior brick building walls are stained a dark brownish color. This could have been from the use of a coating to seal the brick through time, or could be related to past industrial practices that occurred within the building.
- Industrial cleaning fluids were reportedly within the building immediately to the right of the main building entry way.
- There are a number of sumps on the main floor of the building that have been filled in with either soil or concrete.
- There is a drain on the main floor of the building that may have historically received cleaning fluids from onsite industrial processes. It is unknown where this drain discharges.
- There is a sump under the mezzanine approximately two feet deep that is filled with sediment and water. The chemical nature of the sediment and water in this sump are unknown
- There is a shaft under the grain elevators/bins with standing water, sediment and refuse in it. The chemical nature of sediment and water are unknown.
- There is a drain in the basement boiler room that likely received condensate from the boiler. It is unknown where this drain discharges.

The following SEC was found outside of the building on the property:

- There are pole mounted transformers along the electric right of way along the south property boundary with Albany Street.

The following SECs pertaining to adjacent/nearby properties were noted:

- To the east of Niagara Street, Keystone Chromium Corporation operated a chrome plating facility from before 1951 to after 1986. There may have been releases of heavy metals and/or solvents to soil that migrated down to the groundwater table. Since this facility was located upgradient of 1100 Niagara Street, any groundwater contamination that may have occurred as result of their manufacturing processes may have migrated through time downgradient onto the 1100 Niagara Street property.
- In addition, the industrial manufacturing processes used at Keystone Chromium Corporation may have caused releases of heavy metals to the environment via the air or soil routes in and around the location of the plant.

- Immediately south of the 1100 Niagara Street, an oil distribution facility was in place from before 1925 until after 1951. This facility reportedly had petroleum storage tanks on location, which may have leaked creating soil and groundwater contamination. Since this location is side gradient to general flow direction, it is unknown whether or not there are any impacts to soil and groundwater from industrial activities at this site, or whether or not potential impacts have effected soil and groundwater at 1100 Niagara Street.
- Immediately adjacent to the north, Modern Heat Treating and Fabricating has had a facility since before 1986 but after 1981. Modern treats metal products. There is a 1,500-gallon tank for methanol located on site. There is a potential for the release of heavy metals and/or solvents from this facility. It is unknown whether or not there have been any releases, or whether they would affect soil and groundwater quality at 1100 Niagara Street.
- Immediately west of 1100 Niagara Street is a railroad right of way. Historically, various chemical, petroleum and metal products and various other products are transported by rail. It is unknown if there have been any spills by rail transportation in the immediate vicinity of 1100 Niagara Street that may have impacted site soils or groundwater.

Phase II ESA – 1100 Niagara Street – November 2012

A preliminary Phase II ESA was subsequently completed at 1100 Niagara Street in November 2012. On October 11, 2012, the following samples were collected:

- Four soil samples from debris piles along the southern property boundary
- One water and sediment sample from the sump under the mezzanine
- One residue sample from the interior walls of the main room of the building

Analytical results for soil samples SC-1 through SC-4 show the presence of metals, a pesticide and semi-volatile organic compounds (SVOCs) above the restricted residential SCOs in the surface soils.

Sediment sample MSS-5 collected from the mezzanine sump significantly exceeded the restricted residential SCOs for several metals, a pesticide, and 14 SVOCs. This composite sample from the sump likely contains a mixture of materials that were used within the building including lead paint residue from the walls and burned wood debris that was present in the sump.

The wall residue sample is most likely not residue from manufacturing processes. The dark grey-brown coating on the interior walls of the main building is likely to be lead based paint (LBP) since there were significant concentrations of cadmium, lead, and zinc that are present in the sample. The origin of mercury in the sample is unknown.

The presence of dieldrin and acetone above Technical Operational Guidance Series (TOGS) 1.1.1 indicate the likely presence of pesticide use onsite as well as compounds containing volatile organic compounds (VOCs), possibly for cleaning purposes. See **Figure 3** for sampling locations and **Tables 1.1 and 1.2** for a summary of analytical results.

Phase I ESA – 1106 and 1110 Niagara Street – November 2014

A Phase I ESA was conducted for 1106 and 1110 Niagara Street in November 2014. The following RECs are associated with the property:

The property has a history associated with heat treating for over 30 years. This includes the use of chemicals and materials associated with that industry including solvents, petroleum and plating chemicals.

- A 1,400-gallon methanol underground storage tank (UST) was and still may be located on the property. A 1,000-gallon oil tank may be located on the property or adjacent property.
- Numerous drums, containers, machines, furnaces and plating baths are located throughout the property and most contain products/oils/waste materials.
- The general area consists of commercial/manufacturing within the immediate area of the property and a number of adjacent facilities were small/large quantity generators of hazardous waste. Some adjacent or nearby petroleum and chemical use and storage exist/existed. Adjacent properties have a history of industrial operations associated with metal work, plating and machining which involves the use of solvents and petroleum compounds. The property to the south contained a historic gasoline service station.
- Surrounding properties are currently in the BCP.
- The property may have urban fill typical in urban areas.
- Potential vapor encroachment exists for the property due to its past use and adjacent uses including from solvent and petroleum use and storage.

Phase II ESA – 1100 Niagara Street – June 2019

An additional Phase II ESA was completed at 1100 Niagara Street in June 2019. On May 16, 2019, the following samples were collected:

- Seven subsurface soil samples
- One groundwater sample

Field observations and laboratory results indicate that there are urban fill conditions in the near-surface soil resulting in compounds above residential SCOs. Metal and SVOC exceedances were observed in 6 of the 7 samples collected and these represent areas across the property. The fill depth varied from 1 foot to 15 feet across the property and bedrock depth varied from 9 to almost 16 feet below ground surface (bgs). The one groundwater result indicates that groundwater upgradient of the property is impacted with chlorinated solvents above groundwater guidance. Immediately adjacent and nearby properties east and north of the property have the historical use potential for chlorinated solvents that could impact groundwater. The overburden does not appear to be a source of a significant water bearing zone. See **Figure 4** for sampling locations and **Tables 2.1 and 2.2** for a summary of analytical results.

Phase II ESA – 1106 and 1110 Niagara Street – March 2023

A Phase II ESA was completed at 1106 and 1110 Niagara Street in March 2023. A geophysical survey was conducted based on the previously identified RECs. The survey entailed the use of a high-sensitive metal detector (i.e., Geonics EM61) instrument to survey the near surface for the presence of metallic or metal-containing objects. The investigation was conducted across the asphalt surface area east of the building. Anomalies that may be related to buried USTs, metal pipes, or metal fill material were recorded and annotated on a site map. The results of the survey suggested that a tank may be located in the northwest corner of the property adjacent to the building. On March 1, 2023, the following samples were collected:

- Six soil samples in the front parking area
- Three soil samples inside the building below the cement slab
- One groundwater sample

The laboratory results indicate that there are urban fill conditions existing at the property to at least 2 feet bgs resulting in target compounds (metals and SVOCs) above NYSDEC restricted residential SCOs. See **Figure 5** for sampling locations and **Tables 3.1 and 3.2** for a summary of analytical results.

Phase I ESA – 1112 and 1114 Niagara Street – December 2024

A Phase I ESA was conducted for 1112 and 1114 Niagara Street in November 2024. The following RECs were identified:

- **Likely Releases Related to Long-Term Industrial Site Operations:** The Site was utilized for industrial operations from the 1930s through the early 2000s, including gear manufacturing and heat treating and forging. These operations utilize significant quantities of petroleum products and hazardous substances and were primarily conducted prior to the promulgation of environmental regulations. The Site was listed as a former generator of hazardous waste including tetrachloroethene and trichloroethene. Moderate to heavy staining was observed on portions of the concrete floor throughout the Site building, although no significant cracks were observed in the concrete. A moderate petroleum odor was observed throughout the 1114 Niagara Street building. A small number of floor drains were observed and their discharge point is unknown. Based on the nature and amounts of petroleum products and hazardous substances used in machining and heat treating operations, typical chemical disposal and handling practices during the years of operation, the observed staining within the building, and the potential routes to the environment via floor drains and through concrete, a release of hazardous substances or petroleum products is likely. Likely releases associated with the historical Site use constitutes a REC.
- **Likely Impacts from Northern Adjoining Property:** The property located at 1144 Niagara Street, which adjoins the Site to the north, is identified as an “active” BROWNFIELDS site in the database. Impacts include petroleum compounds and chlorinated volatile organic compounds (VOCs) in groundwater. According to the database listing, “environmental sampling indicates soil vapor intrusion is a concern for off-site buildings.” This property is also identified with a second “active” BROWNFIELDS listing for “investigation and possible remediation of contamination that may have migrated from that site.” Furthermore, this property is listed on the SPILLS database for identification of petroleum impacts, which reportedly could not be fully delineated due to the presence of the “Oliver Gear” driveway and foundation wall. Although this property appears to be cross-gradient of the Site to the north, based on reported potential vapor intrusion concerns at nearby properties and the identification of petroleum impacts at the Site boundary, adverse impact to the Site from this adjoining property is likely and constitutes a REC.
- **Likely Impacts from Southern Adjoining Property:** The property located at 1100 Niagara Street, which adjoins the Site to the south, and the portion of the 1106-1112 Niagara Street building located on the 1106 and 1110 Niagara Street parcels, which adjoins the Site to the south and east, is identified as an “active” BROWNFIELDS site in the database. According to the listing, “nominal” contamination of metals and semi-volatile organic compounds was identified in shallow fill and “nominal” VOC impacts were identified in groundwater. The listing states that the remedial investigation has not been completed and no remedial measures have been completed. Based on the historical shared operations of this property with the Site, the identification of soil and groundwater contamination at this property, and the location of a portion of this property upgradient of the Site, adverse impact to the Site from this adjoining property is likely and constitutes a REC.
- **Threat of Impact from Abandoned Drums:** Three 55-gallon drums were observed in the western portion of the 1114 Niagara Street building. One drum was labeled “waste paint” and the other drums were not labeled. Mr. Jack Kane was unaware of the contents and origins of these drums.

Although no evidence of a release from these drums was observed, the drums appeared moderately rusted and the underlying concrete was cracked. No floor drains were observed proximate to these drums. Based on their observed condition, storage location, and contents likely consisting of hazardous substances, these drums pose a material threat of a future release to the environment and therefore constitute a REC.

Phase II ESA – 1112 and 1114 Niagara Street – February 2025

A Phase II ESA was subsequently completed at 1112 and 1114 Niagara Street in February 2025. On December 10 and 11, 2024, the following samples were collected:

- Seven near surface soil samples
- Six subsurface soil samples
- Three groundwater samples

The Phase II was conducted prior to the December 31, 2025, NYSDEC Part 375 revision and results compared to the commercial SCOs. As such, the data was reevaluated and compared to the updated restricted residential SCOs. Conclusions are as follows:

- With the exception of BH-2, fill materials were observed in all of the borings consisting primarily of silt sand, clay, gravel, brick, slag, organic material and cinders.
- Groundwater was encountered in soil borings BH-3, BH-5, and BH-11 at depths of approximately 7.5 feet bgs (BH-5) and 14 feet bgs (BH-3 and BH-11).
- Some metal (arsenic, mercury and potentially chromium) and SVOC exceedances were noted in Site soils. It is important to note that soil samples were analyzed for total chromium, however, there is no corresponding guidance value. Results were compared to hexavalent chromium as this is the more conservative/stringent guidance values. Thus, although exceedances were noted, it cannot be confirmed which portion of the total chromium is hexavalent vs. trivalent, therefore exceedances cannot be confirmed.
- Some groundwater exceedances above Class GA standard/guidance values and the NYS Maximum Contaminant Level were noted.

See **Figures 6 and 7** for sampling locations and **Tables 4.1-4.5** for a summary of analytical results.

SVI Investigation – 1112 and 1114 Niagara Street – February 2025

A Soil Vapor Intrusion (SVI) Investigation was also completed at 1112 and 1114 Niagara Street in February 2025. On December 19, 2024, the following samples were collected:

- Six sub-slab/indoor air paired samples
- One outdoor air sample to assess background conditions.

Results were then compared to the decision matrices provided in NYSDOH SVI Guidance. Based on this comparison, no further action was required at Locations 1-5 (all on the main floor) and mitigation was required for Location 6 (eastern basement). The recommended action of mitigation is based on the following observed concentrations:

- 1,1-dichloroethene (Matrix A)
 - Sub-slab: 110,000 ug/m³ (mitigation recommended above 60 ug/m³)
 - Indoor air: 1.4 ug/m³
 - Conclusion: Box 9 – Mitigate
- cis-1,2-dichloroethene (Matrix A)
 - Sub-slab: 4,200 ug/m³ (mitigation recommended above 60 ug/m³)
 - Indoor air: non-detect (ND)
 - Conclusion: Box 7 – Mitigate
- Trichloroethene ([TCE] Matrix A)
 - Sub-slab: 10,000 ug/m³ (mitigation recommended above 60 ug/m³)
 - Indoor air: ND
 - Conclusion: Box 7 – Mitigate
- 1,1,1-trichloroethane (Matrix B)
 - Sub-slab: 320,000 ug/m³ (mitigation recommended above 1,000 ug/m³)
 - Indoor air: 5.2 ug/m³
 - Conclusion: Box 8 – Mitigate
- Vinyl chloride (Matrix C)
 - Sub-slab: 12,000 ug/m³ (mitigation recommended above 60 ug/m³)
 - Indoor air: ND
 - Conclusion: Box 7 – Mitigate

It is important to note that the recommendation of mitigate is based primarily on sub-slab air concentrations. There did not appear to be a significant soil vapor intrusion concern at the time of sampling. Only one contaminant, 1,1-dichloroethene, slightly exceeded the maximum indoor air concentration of 1 ug/m³.

See **Figure 8** for sampling locations and **Table 5** for a summary of analytical results.

Supplemental Groundwater Sampling – 1112 and 1114 Niagara Street – March 2026

On March 13, 2026, one groundwater sample was collected from RI-BRW-1A and analyzed for metals, SVOCs, VOCs, PFAS and pesticides. The well was installed proximate to the elevated sub-slab air sample previously collected in the eastern basement. Conclusions are as follows:

- Three metals, iron, magnesium and sodium, were noted above guidance values.
- Seven VOCs, 1,1-dichloroethane, 1,1,1-trichloroethane, vinyl chloride, 1,1-dichloroethene, trans-1,2-dichloroethene, TCE and cis-1,2-dichloroethene, were noted above guidance values.
- No SVOC, PFAS or pesticide exceedances were observed.

See **Figure 9** for the sampling location and exceedances and **Table 6** for a summary of analytical results.

3.0 REMEDIAL INVESTIGATION

To date, a remedial investigation (RI) has been conducted on the 1100, 1106 and 1110 Niagara Street parcels in general accordance with the approved Remedial Investigation Work Plan (April 29, 2025 [RIWP]), Proposed RIWP Deviations (October 9, 2025) and Supplemental RIWP – Bedrock Well Installation Plan (October 29, 2025 [SRIWP/BWIP]). The soil investigation was conducted from October 13 - 16, 2025, and included the collection of surface/near surface and subsurface soil samples at select locations across the Site. As no appreciable groundwater was encountered in the overburden, four bedrock wells were

installed and sampled at select locations across the Site from November 11 - 26, 2025. The soil vapor investigation conducted exclusively in the southern Site building occurred on October 21, 2025, and included the collection of six sub-slab, one indoor and one outdoor air sample at select locations across the Site.

No RI has been completed on the 1112 and 1114 Niagara Street parcels and no RI or Alternative Analysis Report has been submitted for any portion of the Site to NYSDEC. Three bedrock wells have been installed across the 1112 and 1114 Niagara Street in general accordance with the approved Supplemental RIWP – Bedrock Well Installation Plan which will be sampled as a part of the RI field work on this portion of the Site.

Based on the review of the existing data, the anticipated Remedial Action (RA) for the Site is a Track 4 (Restricted Residential) cleanup. A Track 4 cleanup generally involves removing all Site soils exceeding restricted residential criteria to specified depth and the creation of a cover system to meet Part 375 3.8 and 6.8(b) restricted residential use SCOs. Removal includes all soils above final grade requirements and an additional 2 feet of removal in non-hardscaped areas. The hardscaped areas (i.e., building footprint, parking lot and sidewalks) would be composed of approximately one foot of material which would function as a component of the cover system. All non-hardscaped/greenspace areas would be covered with 2 feet of clean imported fill meeting the provisions of NYSDEC DER-10 Subdivision 5.4, as outlined in **Appendix E**. Details of this alternative include the following:

1. All soils across the Site above final grade requirements and an additional 2 feet of material in non-hardscape/greenspace areas will be removed and disposed of at an approved landfill.
2. Approved clean fill will be imported to the Site to provide a 2-foot cover system in greenspace areas.
3. Upon completion of remediation, provisions for managing the Site will be provided through an Environmental Easement (EE) which outlines Institutional Controls (ICs) and Engineering Controls (ECs).
4. A demarcation layer will be placed between the remaining impacted Site soils and cover material.
5. Imposition of an IC in the form of an EE for the controlled party includes the following:
 - a. The remedial part or site owner must complete and submit a periodic certification of IC/EC in accordance with NYSDEC Part 375-1.8(h)(3).
 - b. Allows the use and development of the controlled property for restricted residential, commercial, and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws.
 - c. Restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH.
 - d. Requires compliance with the approved SMP.
6. An SMP is required that includes the following:
 - a. An IC/EC plan that identifies all use restrictions and ECs for the Site and details the steps and media specific requirements necessary to ensure the IC and/or ECs remain in place and effective. The ICs are as discussed above, and the only EC is a soil cover system.
 - b. An Excavation Work Plan (EWP) which details provisions for management of future excavations in areas of remaining contamination.
 - c. Descriptions of the provisions of the EE including any land use or groundwater use restrictions.
 - d. Provisions for the management and inspection of the identified ECs.
 - e. Maintaining site access controls and NYSDEC notifications.
 - f. The steps necessary for the periodic reviews and certifications of the IC/ECs.

4.0 INTERIM REMEDIAL MEASURES

4.1 SUB-SLAB DEPRESSURIZATION SYSTEM

Based on previous investigation, a potential SVI concern was identified in the northern Site building (Oliver Gear) which spans the 1112 and 1114 Niagara Street parcels. The concern was specifically observed in the eastern partial basement located proximate to Niagara Street (1114 Niagara Street parcel). As this building is proposed to be occupied as commercial office space, a sub-slab depressurization system (SSDS) will be installed to protect human health. The system will be installed as active in the primary area of concern (eastern partial basement located proximate to Niagara Street) and passive throughout the remainder of the building. See **Figures 11 and 12** for further information.

4.2 SOIL REMOVAL AND REPLACEMENT

Impacted fill/soils were generally observed across the Site which will require removal and replacement to achieve Track 4 requirements. See **Figure 13** for soil removal areas under the IRM and as described below.

Area A

This area will first involve removing a portion of the existing central building slab (former Modern Heat) located on the 1110 and 1112 Niagara Street parcels. After slab removal, impacted soil from this area will be excavated approximately 4 feet below the design depth of new concrete footers and foundation walls for the proposed building addition. Once footers and foundations are installed, the excavation will be backfilled with approved clean imported materials to meet final design grades.

Area B

This area will involve the removal of two trees, including stumps. The excavation area is not anticipated to be of sufficient size which would require backfilling.

Area C

This area will include excavating impacted soils approximately 3.5 feet below the existing grade for new primary and secondary utility services to the Oliver Gear building. After installation, these utilities will be encased in duct bank concrete and the excavation backfilled with approved clean imported materials to meet final design grades.

Area D

The existing retaining wall in this area will be demolished, and impacted soil in the area excavated approximately 6 feet below the existing grade. A new wall will be constructed, and the excavation backfilled with approved clean imported materials.

Area E

Impacted soil from this area will be excavated to approximately 1.5 feet below existing grade to accommodate new concrete pads for switch gears and transformers. The concrete pad will be poured over 4 inches of clean imported stone and electrical gears and bollards will be subsequently installed.

4.3 UNDERGROUND STORAGE TANK REMOVAL/CLOSURE

Based on the potential presence of USTs, a geophysical survey was conducted on the 1106 Niagara Street parcel as a part of the 2023 Phase II ESA. A buried metal anomaly was noted in the northeastern portion of the survey area which may represent a UST or remnants of a UST and associated appurtenances.

On October 27, 2025, two test pits, RI-TP-1 and RI-TP-2, were conducted using a midi excavator in the general vicinity of the identified anomaly. No indications of USTs were noted in RI-TP-1, however a UST was uncovered in RI-TP-2. The excavation was completed to the bottom of the tank on all exposable sides (the western side of the tank could not be exposed due to the presence of concrete surface pads). The top and bottom of the tank were encountered approximately 5 and 9 feet bgs respectively. The tank was oriented in the east-west direction with a central access port. Based on the exposed portion of the tank and central access port, the tank is estimated to be 16 feet in length with a measured diameter of 4 feet, resulting in an approximately 1,500-gallon capacity. The tank appeared to be in good condition with no obvious leaks, holes or punctures. No indication of a spill was noted in the surrounding soil.

The tank was filled with both sediment and water which were sampled for characterization and disposal. Three samples, one from each exposed sidewall (i.e., north, east and south) were collected near the bottom of the tank and analyzed for Commissioner Policy (CP)-51 SVOCs and VOCs. No exceedances above CP-51 soil cleanup levels (SCLs) were noted. See **Table 7** for sampling results. Samples were placed in appropriate containers, packaged in coolers with ice, and transferred to Eurofins Environment Testing – Buffalo, a NYSDOH ELAP certified laboratory, using standard chain-of-custody procedures.

The excavated material was temporarily stockpiled on the ground surface adjacent to the trenches and field screened for VOCs using a PID as it was removed from each trench. No PID readings above background were noted. Following screening and sampling, all test trenches were backfilled with the same material that was removed from the trench. The material was placed in the same order and at the approximate depth from which it was excavated. The soil was compacted with the excavator bucket during backfilling.

The UST closure will be completed in accordance with NYSDEC Division of Environmental (DER)-10 guidelines provided in Section 613-2.6 (i.e., out of service UST systems and closure) of 6 NY Codes, Rules, and Regulations (CRR) Part 613 PBS and Commissioner Policy (CP)-51 Soil Cleanup Guidance. The following procedures represent the anticipated course of action during removal of the UST:

- Complete and submit a NYSDEC Pre-Work Notification for Bulk Storage (Petroleum Bulk Storage [PBS] or Chemical Bulk Storage [CBS]) Tank Installation or Closure form
- Obtain utility clearance.
- Obtain City permits (if necessary).
- Remove process lines and other non-liquids.
- Segregate removed materials on poly awaiting waste disposal.
- Pump and dispose of product/water in tank.
- Remove tank from subsurface.
- Collect confirmation sample from previously unexposed side (west) and bottom of excavation to be analyzed for CP-51 VOCs and SVOCs.
- Backfill the excavation with clean imported material.
- Clean and cut tank as required for offsite removal.
- Complete a tank closure report to document closure activities and provide to NYSDEC.
- Transport and dispose of all impacted and characterized material.
- Maintain all manifests relating to off-site disposal of materials.

Since visual, olfactory, PID and laboratory analytical results do not indicate any petroleum impacts from the tank in the surrounding soils, no soils are anticipated to be removed as a part of the tank closure.

See **Figure 14** for further information.

5.0 REMEDIAL APPROACH

5.1 SOIL REMOVAL AND REPLACEMENT

5.1.1 *Soil Sampling for Disposal Purposes*

The contractor will, at the request and direction of the approved landfill for soil disposal, collect soil samples from excavation areas. These samples will be submitted for analysis as requested by the landfill to determine acceptability for disposal at their facility to meet their permit requirements. At a minimum, a landfill typically requests analysis of Part 375 and Toxicity Characteristic Leaching Protocol (TCLP) analysis for certain constituents to determine if any of the compound concentrations fall into the hazardous waste category. The number of soil samples is indeterminate at this time and will be based on the total quantity of soils to be landfilled. Results of the soil sampling must be provided to the Site representative prior to excavation and removal.

5.1.2 *Soil Excavation*

Prior to excavation activities at the Site, an underground utility location service will be contacted by the remediation contractor to obtain utility clearances.

The contractor's erosion and sediment controls shall be in place before any excavation begins to prevent contaminated materials from leaving the Site and rainwater from entering excavations.

All surface material will be disposed of off-site at an approved landfill. The RI and previous investigations indicate the Site is underlain by fill materials primarily impacted by metals and SVOCs which were likely sourced off-site. Contaminated soils/fill above final grade requirements in the IRM designated areas will be removed and disposed of at an approved landfill.

All IRM designated areas to be completed in hardscape/future hardscape areas (building footprint and parking lot) will be composed of approximately one foot of material that will function as a component of the final cover system.

Prior to placement of any clean imported fill, a demarcation layer will be placed at the bottom of the excavations (utilities, footings, etc.) or on top of the existing fill material in areas where cover material is placed above the existing grade to meet new development requirements.

Impacted soil will be directly loaded to trucks for off-site disposal at a NYSDEC approved landfill. If impacted soil needs to be stockpiled for any reason before off-site transport, the soils will be placed on a minimum of 6-mil plastic sheeting and covered with 6-mil plastic upon completion of stockpiling. All trucks utilized for transport will be New York State Department of Transportation (NYSDOT) 9-A approved permitted trucks which allows for hauling of non-hazardous waste.

A physical inspection (visual/olfactory) along with photoionization detector (PID) screening will be conducted during excavation operations at the excavation bottom and sidewalls to assess if there are hot spots below the proposed grade excavation limits that will require removal. Although no significant hot spot

areas have been identified based on existing contaminant data, should hotspot areas be identified during trenching activities, additional soil removal may be required in these areas. If hot spot areas are identified during excavation activities, confirmatory sampling may be required to assess that the excavation limits meet Restricted Residential SCOs.

Where the sidewalls of excavation are at the property boundary and the physical inspection and/or PID screening note possible impacts, confirmatory soil samples will be collected and analyzed for VOCs, PAHs and metals to assess if soils exceeding restricted residential SCOs extend off-site. Based on the anticipated Track 4 cleanup, no other confirmation samples are required.

Confirmatory soil sampling that may be required will be in accordance with DER-10 Section 5.4 (b) 2.0 requirements and in accordance with **Appendix C** - QA/QC Plan and **Appendix D** Field Sampling Plan.

The excavations will be surveyed by the contractor to determine excavation and fill quantities which will be needed for inclusion in the Construction Completion Report (CCR) and Final Engineering Report (FER).

Clean fill identified through visual, olfactory and PID screening process will be stockpiled on site on 6-mil plastic sheeting for potential reuse on the Site as clean fill to meet any future redevelopment design/construction requirements (i.e., bring the Site up to design grade). This material will be covered to prevent wind and rain erosion. The material will be sampled and analyzed for Part 375 constituents to assess reusability and will be placed below the cap.

Dust, VOC and odor control measures with air monitoring will be implemented during all intrusive activities to minimize inhalation exposures and create a public record. The requirements of NYSDOH Community Air Monitoring Plan (CAMP) and the NYSDEC Fugitive Dust Suppression and Particulate Monitoring Program will be implemented for VOCs, odors and particulates during all work activities that involve the excavation and handling of Site soils. The Health and Safety Plan (HASP) is provided as **Appendix A** and the CAMP as **Appendix B**.

If rainwater is encountered in any excavation areas the contractor will pump and containerize the water into drums or a frac tank, depending on quantity. The contractor will have any collected water sampled/characterized either for disposal at an approved off-site facility or possible onsite treatment (carbon filtered, etc.) and discharge to the local municipal sewer system. In order for containerized water to be discharged to the municipal sewer system, the contractor will perform all required testing by the municipality and secure appropriate permits for discharge.

5.1.3 Fill Material

All imported fill materials used to backfill excavations, establish site grades or compose the cover system shall be obtained from virgin sources and be tested to ensure they meet imported soil requirements outlined in DER-10 Appendix 5 – Allowable Constituent Levels for Imported Fill, as provided in **Appendix E**. The owner's environmental consultant and NYSDEC will approve all backfill material and sources before being brought to the Site. Stone/gravel from a permitted/approved NYSDOT/NYSDEC quarry may be used for backfill without analytical testing, provided the material contains less than 10 percent by weight of material which would pass through a size 80 sieve.

Fill material will be placed in maximum one-foot lifts and compacted with suitable approved vibratory compaction equipment, or as directed by the owner's engineer.

5.1.4 SSDS Installation

Based on the anticipated future floor construction in the northern Site building (Oliver Gear), a false floor SSDS was designed for the building. This design approach generally includes constructing a false floor over the existing concrete slab and depressurizing the area between the false floor and the existing slab. A suction point will then be cored and a 4-inch diameter polyvinyl chloride (PVC) vertical riser pipe installed which will connect all vapor channels and vent above the roofline.

A Radon Guard® 250 (or similar) under-slab ventilation panel system will be utilized to create vapor channels by acting as a capillary break which provides soil gas movement between the ground and the soil-gas-retarder. The main benefits of this material are providing a code compliant one-to-one replacement for gravel while maintaining superior moisture resistance. Radon Guard® also meets applicable requirements including the acceptance criteria for an alternate gas permeable layer of a SSDS.

In the active portion of the system, an inline fan will be installed on the exterior of the building below the roof top and discharge at least 12 inches above the roof or 30 feet above ground level on buildings with nonoperational windows. The discharge point will be at least 2 feet above operations windows, openings, etc., that are within 10 feet of the discharge pipe. The fan will be wired with switches into the nearest electric panels on a dedicated circuit. An alarm will be installed on the vacuum side of the fan and be wired into a separate dedicated circuit.

It is required that a private Environmental Consultant provide an onsite representative to perform background readings for VOCs. Dust control and work plan safety meetings will be held by the contractor prior to the start of work each day. An onsite supervisor will be designated as the safety officer. All workers will be directed to perform work in a safe manner and notify site safety officer of any potential hazards.

The installation of the SSDS will conform to the most recent standards of the Radon Mitigation Standards ASTM E2121, the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006, and the ASTM D3034 Standard Specification for Type PSM Poly (Vinyl Chloride) PVC Pipe and Fittings.

See **Figures 11 and 12** for further information.

5.1.5 UST Removal

See section 4.3 for a detailed layout of the remedial approach.

5.2 GREEN REMEDIATION

Green and Sustainable Remediation (GSR) techniques have been evaluated as described in NYSDEC DER-31 Green Remediation. It is anticipated that, at a minimum, the following techniques will be used at the Site:

- Reduce vehicle idling – all vehicles, both on and off road (including construction equipment) will be shut off when not in use for more than 5 minutes, consistent with 6 NYCRR Part 217 Motor Vehicle Emissions, Subpart 217-3 Idling Prohibition For Heavy Duty Vehicles
- Design cover systems, to the extent possible, to be usable for alternate uses such as habitat or passive recreation, require minimal maintenance (e.g. less mowing), allow for infiltration of storm water and/or be integrated with the next use of the Site

- Minimize hardscape cover systems as much as practical to reduce the carbon footprint and replace with natural vegetated green space
- Beneficially recycle/reuse materials that would otherwise be considered a waste including recycled crushed clean concrete as base or fill, scrap metal to metal recycler or recycling of used petroleum products

6.0 REMEDIAL CONSTRUCTION REQUIREMENTS/SUBMITTALS

Before initiating remedial activities, the selected contractor will complete the following tasks:

- Submit a site-specific HASP to cover workers and the public
- Submit a site-specific plan of operations/work
- Submit an Erosion and Sediment Control (E&SC) Plan
- Contact the Underground Facilities Protection Organization and have all subsurface facilities marked
- Establish contractor work limits within the staked Site boundary
- Install safety fencing around all work areas to restrict and control public access to the Site
- Procure all work permits and off-site road permits required by law for the off-site removal/disposal of Site soils and materials

BE3 will be responsible for reviewing all submittals for conformance with the IRM. The contractor's work plan shall be submitted to BE3 and include, but not limited to, the following:

- Detailed construction schedule that meets the overall project schedule and also to be provided in the bid documents
- A HASP, as noted above
- Sequence and methods to be used to accomplish the work
- Off-site transport and end disposal destinations for contaminated soil (if known)
- Procedure to handle site drainage during construction to prevent contaminated water and/or sediment from leaving the Site and rainwater from entering excavations
- Locations of off-site fill sources and clean verification per DER-10 requirements (if known)

All disposal facilities must be NYSDEC approved, and permits must be supplied to the owner/engineer. Upon acceptance of the contractor's work plan by BE3, the owner and NYSDEC, the contractor will commence implementation of the plan and complete all work within the approved project schedule.

6.1 CONTRACTOR HEALTH AND SAFETY REQUIREMENTS

The contractor's HASP, at a minimum, must comply with all Federal and State regulations and the HASP provided in **Appendix A** including, but not limited to, the following:

- Occupational Safety Health Administration (OSHA) Regulations 29 CFR 1910.120
- OSHA Regulations 29 CFR 1926
- All applicable laws and regulations regarding the handling and treatment of petroleum containing USTs and excavation/handling of impacted soils
- The CAMP provided in **Appendix B**

The contractor's HASP shall, at a minimum, address the following subject areas, as deemed necessary by the contractor's health and safety personnel and in accordance with OSHA Part 29 CFR 1910.120 and applicable NYS regulations:

- On-site health and safety organization
- Hazard analysis of each Site task and operation to be performed
- Provisions for employee training to ensure compliance with 29 CFR 1910.120(e)
- Personal protective equipment (PPE) to be used by employees for each of the Site tasks and operations being conducted to eliminate potential exposures, as required by the PPE programs in 1910.120(g)(5)
- Personnel and equipment decontamination procedures in accordance with 1910.120(k), as applicable
- Standard Operating Safety Procedures, ECs and work practices
- First aid requirements
- Confined space entry requirements, if applicable, meeting requirements of 29 CFR 1910.146
- Dust control measures that comply with actions levels of the CAMP
- A spill containment program meeting the requirements of 1910.120(j)
- Heat/cold stress monitoring
- Record keeping procedures

7.0 OVERSIGHT AND REPORTING

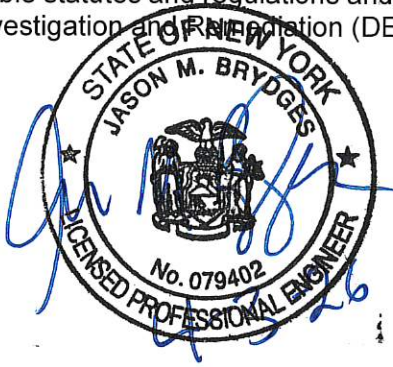
As required by BCP regulations, the owner's engineer/consultant will provide construction oversight services during all construction activities detailed in the work plan. Upon completion of IRM activities listed below a Construction Completion Report (CCR) will be prepared and submitted to NYSDEC. The UST removal will also require a Tank Closure Report to be submitted per DER-10 requirements and will be referenced in the CCR. Upon completion of the overall BCP remediation of the Site a Final Engineering Report (FER) will be prepared which will reference the CCR or include it as an attachment.

- SSDS installation
- Impacted soil removal and replacement
- UST removal

All reports will be provided electronically in a format deemed acceptable to NYSDEC and NYSDOH.

8.0 WORK PLAN CERTIFICATION

I, Jason M. Brydges, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Interim Remedial Measures Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).



Jason M. Brydges, P.E.

Tables

**Table 1.1: Analysis of Soil, Sediment and residue Samples
1100 Niagara Street
Buffalo, New York**

Sample Name	**6 NYCRR Part 375 Soil Cleanup Objectives Restricted Residential	SC - 1	SC - 2	SC - 3	SC - 4	MSS-5	RS - 7
Sample Type		Soil	Soil	Soil	Soil	Sediment	Residue
Sample Depth		0-6"	0-6"	0-6"	0-6"	0-1"	Surf
Date		10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012
PID Reading (ppmv)		0.0	0.0	0.0	0.0	0.0	0.0
Metals (mg/kg)							
ALUMINUM	NS	9500	8700	7200	5500	5600	1500
ARSENIC	16	11	ND	8.5	4.5	9.7	66
BARIUM	400	210	150	160	130	260	640
BERYLLIUM	72	ND	1.3	ND	ND	ND	ND
CADMIUM	4.3	ND	1	ND	ND	3.6	230
CALCIUM	NS	30000	41000	72000	76000	74000	42000
CHROMIUM, TOTAL	290	19	16	12	12	43	11
COBALT	NS	7.7	6.6	4.2	3.3	ND	ND
COPPER	270	59	26	28	170	460	31
IRON	NS	18000	17000	13000	11000	34000	9400
LEAD	400	690	220	590	120	2200	58000
MAGNESIUM	NS	9600	12000	17000	20000	7300	8200
MANGANESE	2,000	380	400	510	430	360	1100
NICKEL	310	17	16	12	11	61	6.1
POTASSIUM	NS	1400	1300	1400	1400	950	590
SELENIUM	180	ND	ND	ND	ND	ND	35
SODIUM	NS	180	90	390	130	1200	10000
VANADIUM	NS	22	21	23	13	ND	34
ZINC	10,000	390	190	310	220	1400	40000
MERCURY	0.81	0.225	0.108	0.111	1.57	12.6	6.91
Pesticides/Polychlorinated Biphenyls (mg/kg)							
PCBs	1	ND	ND	ND	ND	ND	ND
4,4'-DDD	13	ND	ND	0.042	ND	0.240	NA
4,4'-DDE	8.9	ND	ND	ND	ND	1.500	NA
4,4'-DDT	7.9	ND	ND	0.140	0.057	3.600	NA
alpha-Chlordane	4.2	ND	ND	0.034	ND	ND	NA
gamma-Chlordane	NS	ND	ND	0.039	ND	ND	NA
Methoxychlor	NS	ND	ND	0.310	0.200	0.990	NA
Dieldrin	0.2	ND	ND	ND	1.000	12.000	NA
Volatile Organic Compounds (mg/kg)							
METHYLENE CHLORIDE	100	ND	ND	ND	ND	0.015	NA
						0.015	
Semi-Volatile Organic Compounds (mg/kg)							
2,4-DIMETHYLPHENOL	NS	ND	ND	ND	ND	9.70	ND
2-METHYLNAPHTHALENE	NS	ND	ND	ND	ND	83.00	ND
ACENAPHTHENE	100	ND	ND	1.80	0.81	120.00	ND
ACENAPHTHYLENE	100	ND	ND	0.25	ND	ND	ND
ANTHRACENE	100	ND	ND	4.20	1.90	200.00	ND
BENZO(A)ANTHRACENE	1.0	0.31	0.91	12.00	6.40	250.00	ND
BENZO(A)PYRENE	1.0	0.25	0.72	8.00	4.60	170.00	ND
BENZO(B)FLUORANTHENE	1.0	ND	1.20	15.00	8.60	240.00	ND
BENZO(G,H,I)PERYLENE	100	ND	ND	2.80	1.70	ND	ND
BENZO(K)FLUORANTHENE	3.9	ND	0.53	4.10	2.70	110.00	ND
BIPHENYL (DIPHENYL)	NS	ND	ND	ND	ND	19.00	ND
CARBAZOLE	NS	ND	0.72	2.50	0.98	80.00	ND
CHRYSENE	3.9	0.26	ND	8.20	4.70	170.00	ND
DIBENZ(A,H)ANTHRACENE	0.33	ND	ND	ND	0.56	20.00	ND
FLUORANTHENE	100	0.45	1.60	19.00	1.10	460.00	ND
FLUORENE	100	ND	ND	1.90	0.94	150.00	ND
INDENO(1,2,3-C,D)PYRENE	0.5	ND	ND	3.60	2.20	76.00	ND
NAPHTHALENE	100	ND	ND	0.60	0.25	200.00	ND
PHENANTHRENE	100	ND	1.00	16.00	8.20	800.00	ND
PYRENE	100	0.36	1.30	27.00	16.00	610.00	ND
		1.63	7.98	126.95	61.64	3767.7	0

All soil cleanup objectives are in mg/kg
All analytical results are in mg/kg

NS = Not Specified
ND = Not Detected
NA = Not Analyzed for

**Table 1.2: Analysis of Mezzanine Sump Water Sample
1100 Niagara Street
Buffalo, New York**

Sample Name		NYSDEC TOGS 1.1.1 Groundwater Standards	MSW-6
Sample Type			Surface Water
Sample Date			10/11/2012
Depth to Water (ft below TOC)			Surface Water
Metals (ug/L)			
	BARIUM	2,000	1
	CALCIUM	NS	310
	LEAD	50	0.014
	MAGNESIUM	35,000	95
	MANGANESE	NS	0.15
	POTASSIUM	NS	7.4
	SODIUM	NS	240
Pesticides/Polychlorinated Biphenyls (ug/L)			
	PCBs	0.09	ND
	DIELDRIN	0.004	0.51
Volatile Organic Compounds (ug/L)			
	ACETONE	50	93
Semi-Volatile Organic Compounds (ug/L)			ND

Notes:

U = below laboratory detection limits

ug/L = micrograms per liter

* TOGS 1.1.1 - 1 ug/L standard applies to total chlorinated Phenols

NR=Not Regulated by TOGS 1.1.1

**TABLE 2.1
1100 NIAGARA STREET - SOIL BORING SAMPLE ANALYTICAL RESULTS SUMMARY**

Revised 6/17/19

Contaminants	Sample Identification				Date Sampled: 5/16/19				Residential	Restricted Residential
	SB-01 (0-1')	SB-02 (0-1')	SB-03 (0-1')	SB-04 (0-1')	SB-05 (0-1')	SB-06 (0-1')	SB-07 (0-1')			
METALS										
Arsenic	10.90	41.60	8.25	6.07	9.31	6.36	3.40	16	16	
Barium	141	200.0	101.0	34.1	309.0	93.9	122.0	350	400	
Beryllium	0.668	0.720	0.760	ND	0.430	0.650	0.620	14	72	
Cadmium	2.900	6.830	2.290	1.930	2.37	2.130	1.840	2.5	4.3	
Chromium	17.8	24.6	13.6	5.7	17.4	20.2	20.9	36	180	
Copper	79.6	219.0	58.5	10.0	47.7	21.3	24.4	270	270	
Lead	217.0	997.0	189.0	166.0	765.0	104.0	22.3	400	400	
Manganese	472	453	499	941	500	390	281	2,000	2,000	
Total Mercury	0.967	2.95	4.25	0.13	0.97	0.098	0.091	0.81	0.81	
Nickel	20.0	52.7	11.5	5.3	13	18.6	18.5	140	310	
Selenium	1.54	2.86	1.43	ND	ND	ND	ND	36	180	
Silver	2.040	3.97	0.77	ND	1.5	1.58	1.32	36	180	
Tot Cyanide	ND	ND	ND	ND	ND	ND	ND	27	27	
Zinc	292	1490	240	4.23	413	125	88.6	2200	10,000	
PCBs										
PCB-1254	ND	ND	ND	ND	ND	ND	ND	1	1	
PCB-1260	ND	0.1	ND	ND	ND	ND	ND	1	1	
PESTICIDES										
4,4-DDT	0.006	ND	ND	0.013	0.012	0.004	0.004	1.7	7.9	
4,4-DDE	ND	ND	ND	ND	0.032	0.003	ND	1.8	8.9	
4,4-DDD	ND	ND	ND	0.005	0.005	ND	ND	2.6	13	
beta-BHC	ND	ND	ND	ND	ND	0.006	ND	0.072	0.36	
Delta-BHC	0.009	ND	0.12	0.013	ND	ND	ND	100	100	
Endosulfan Sulfate	ND	ND	ND	0.008	ND	ND	0.004	4.8	24	
Endrin	ND	ND	ND	0.006	ND	ND	ND	2.2	11	
Endrin Ketone	ND	ND	ND	0.006	ND	ND	0.005	NA	NA	
Dieldrin	0.019	0.96	0.44	0.007	0.009	0.004	ND	0.039	0.2	
Aldin	ND	ND	ND	ND	ND	ND	ND	0.019	0.097	
Heptachlor	ND	ND	ND	ND	ND	ND	ND	0.42	2.1	
SEMIVOLATILE ORGANIC COMPOUNDS										
Acenaphthene	ND	ND	0.46	ND	ND	ND	ND	100	100	
Acenaphthylene	ND	0.44	0.82	ND	ND	ND	0.45	100	100	
Anthracene	ND	0.77	2.12	3.06	0.36	ND	0.73	100	100	
Benz(a)anthracene	0.330	1.99	4.22	6.82	1.13	0.42	1.39	1	1	
Benzo(a)pyrene	0.350	1.79	3.45	6.77	1.16	0.48	1.11	1	1	
Benzo(b)fluoranthene	0.390	2.49	3.73	6.57	1.15	0.54	1.08	1	1	
Benzo(g,h,i)perylene	0.330	1.14	2.07	4.17	0.78	0.39	0.62	100	100	
Benzo(k)fluoranthene	ND	1.61	2.56	5.9	1	0.4	1.01	1	3.9	
Chrysene	0.360	2.34	3.75	6.42	1.17	0.5	1.23	1	3.9	
Dibenz(a,h)anthracene	ND	0.43	0.8	1.43	ND	ND	ND	0.33	0.33	
Fluoranthene	0.64	3.99	8.61	13.8	2.37	0.89	3.04	100	100	
Fluorene	ND	ND	0.64	ND	ND	ND	0.41	100	100	
Naphthalene	ND	1.09	0.34	ND	ND	ND	ND	100	100	
Indeno(1,2,3-cd)pyrene	ND	1.21	2.24	4.46	0.91	0.38	0.73	0.5	0.5	
Phenanthrene	0.400	2.96	6.57	8.8	1.22	0.5	2.83	100	100	
Pyrene	0.560	3.43	7.12	11.3	1.95	0.72	2.37	100	100	
Volatile Organic Compounds										
Acetone	ND	ND	ND	ND	ND	ND	ND	100	100	
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	59	100	
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	100	100	
TCE	ND	ND	ND	ND	ND	ND	0.009	10	21	

ND - Non-Detect NA - Not Applicable All Data is Validated J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in ppm
 >= to Residential/Restricted-Residential SCO and Unrestricted Use SCO
 >Unrestricted Use & Residential SCO but <Restricted-Residential SCO

TABLE 2.2
1100 NIAGARA STREET - GW SAMPLE ANALYTICAL RESULTS SUMMARY

Contaminants	Sample Identification		NYSDEC
	SB-07 GW	5-16-19	TOGS 1.1.1. GA (1)
Volatile Organic Compounds			
Acetone	17.2		50
1,1,1-Trichloroethane	80.2		5
1,1-Dichloroethane	9.58		5
1,1-Dichloroethene	25.6		5
cis-1,2-Dichloroethene	13.4		5
1,2,4-Trimethylbenzene	ND		5
1,3,5-Trimethylbenzene	ND		5
Trichloroethene	98.8		5

All values in ppb

N/A - Not Applicable ND - Non-detect

(1) - TOGs 1.1.1 GA - Technical and Operational Guidance Series (1.1.1) Source of Drinking Water (Groundwater

Exceeds TOGs Guidance Value

**TABLE 3.1
SUMMARY OF SOIL ANALYTICAL RESULTS**

Parameter Tested	BE3 Phase II Report March 2023 - Sample Identification, Sample Depth in feet below ground surface (bgs), and Sample Date									NYSDEC Soil Cleanup Objectives (SCOs)				
	BH-1	BH-2	BH-3	BH-4	BH-5	BH-6	BHI-1	BHI-2	BHI-3	Unrestricted	Residential	Restricted Residential	Commercial	Industrial
	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	0-1					
3/1/2023														
METALS/INORGANICS - mg/kg/ppm														
Arsenic	4.6	5.9	4.9	15.7	10.5	7.6	6.1	10.3	8.7	13	16	16	16	16
Barium	76.9	50.0	74.1	223.0	158.0	353.0	154	157	134	410	410	410	410	10,000
Beryllium	1.2	0.42	0.70	4.80	2.00	3.70	1.20	0.87	0.81	4.4	8.8	43	670	750
Cadmium	0.15 J	0.87	0.085 J	0.21 J	1.4	0.13 J	0.11 J	1.10	1.10	2.5	2.5	2.5	3.7	4.4
Chromium	11.9	10.1	13.5	22.8	15.4	11.5	32.0	24.2	22.7	30	30	110	1,700	2,000
Copper	18.6	19.0	17.9	115.0	56.4	17.2 B	23.1	70.5 B	68.0	50	280	280	280	10,000
Lead	34	157	69.1	57.3	639.0	82.8	102	199	144	63	400	400	1,000	3,900
Manganese	1080 B	350 B	501 B	1830 B	741 B	1770 B	910 B	639 B	326 B	1,600	2,000	2,000	10,000	10,000
Mercury	0.013 J	0.19	0.290	0.011 J	0.48	0.62	0.29	0.35	0.28	0.18	0.26	0.26	1.1	1.1
Nickel	13.0 B	7.0 B	12.5 B	21.4	17.2 B	11.5	25.2	53.6	23.3 B	30	44	210	320	3,400
Selenium	ND	ND	0.58 J	ND	ND	1.0 J	1.20	1.4 J	ND	4	22	110	1,700	2,000
Silver	ND	ND	ND	ND	ND	ND	ND	0.46 J	ND	2	22	110	1,700	2,000
Zinc	98	164	70.4	118.0	787.0	65.8	118	205	461	109	1,300	6,600	10,000	10,000
SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs) ppm														
Acenaphthene	ND	ND	ND	4.3 J	ND	ND	ND	0.94 J	1.6 J	20	100	100	500	1,000
Acenaphthylene	0.72 J	ND	ND	7.7 J	ND	ND	ND	0.16 J	2 J	100	100	100	500	1,000
Anthracene	ND	ND	ND	19	ND	ND	ND	2.5	4.0	100	100	100	500	1,000
Benzo(a)anthracene	2.8 J	ND	0.12 J	35	ND	0.17 J	0.028	4.2	6.5	1	1	1.4	37	37
Benzo(a)pyrene	3.1 J	ND	0.14 J	37	ND	0.17 J	ND	4.0	6.3	1	1	1	3.7	3.7
Benzo(b)fluoranthene	3.5 J	ND	0.16 J	38	ND	0.19 J	ND	3.9	6.6	1	1	1.4	37	37
Benzo(g,h,i)perylene	1.7 J	ND	ND	20	ND	ND	ND	1.80	3.3	0.64	1.2	4.9	47	78
Benzo(k)fluoranthene	1.5 J	ND	ND	20	ND	ND	ND	2.20	3.5	0.8	1.2	4.9	47	78
Chrysene	2.8 J	ND	ND	37	ND	ND	ND	4.1	6.7	1	1.2	4.9	47	78
Dibenz(a,h)anthracene	ND	ND	ND	5.2 J	ND	ND	ND	0.59 J	0.99	0.33	0.33	0.33	3.7	3.7
Dibenzofuran	ND	ND	ND	4.2 J	ND	ND	ND	0.55 J	2.0 J	2.1	4.2	18	180	290
Fluoranthene	6.5	ND	0.2 J	89	0.82 J	0.34 J	0.063	11.0	21	85	100	100	500	1,000
Fluorene	ND	ND	ND	4 J	ND	ND	ND	0.96	2.7	30	100	100	500	1,000
Indeno(1,2,3-cd)pyrene	1.7 J	ND	ND	17 J	ND	ND	ND	1.8	3.3	0.5	0.5	1.4	37	37
Naphthalene	ND	ND	ND	ND	ND	ND	ND	0.3 J	2.3	12	84	100	500	1,000
Phenanthrene	2.3 J	ND	ND	35	ND	0.23 J	0.06	10.0	21	1.1	1.2	4.9	47	78
Pyrene	4.5	ND	0.15	71	0.64 J	0.25 J	0.065	8.1	13	64	100	100	500	1,000
VOLATILE ORGANIC COMPOUNDS (VOCs)														
Acetone	-	-	-	-	-	-	0.047 J	ND	ND	0.03	100	100	500	1,000
Chloroform	-	-	-	-	-	-	0.00049	0.00045 J B	0.00043 J B	0.37	4.8	24	180	180
Methylene Chloride	-	-	-	-	-	-	ND	ND	ND	0.05	17	81	500	1,000
2- Butanone (MEK)	-	-	-	-	-	-	0.0073 J	ND	ND	0.12	100	100	500	1,000
Trichloroethene	-	-	-	-	-	-	ND	ND	ND	0.47	1.7	6.4	54	54

ND Analyte not detected
 - Not Applicable or sample not tested for this analyte
 J Estimated Concentration
 B Analyte detected in method blank
 K Result is reported as Benzo(b)fluoranthene
 E Results exceeded calibration range
 T Result is Tentatively Identifies Compound and an estimated value

Analyte detected
 Reported concentration greater than or equal to the NYSDEC Unrestricted SCO
 Reported concentration greater than or equal to the NYSDEC Residential SCO
 Reported concentration greater than or equal to the NYSDEC Restricted Residential SCO
 Reported concentration greater than or equal to the NYSDEC Commercial SCO
 Reported concentration greater than or equal to the NYSDEC Industrial SCO

**TABLE 3.2
SUMMARY OF GROUNDWATER RESULTS**

Parameter Tested	Sample Identification, Approximate Groundwater Depth Below Top of Casing, and Sample Date	NYSDEC TOGS 1.1.1 GA
	TWM-1	
	- 3/1/2023	
Volatile Organic Compounds (VOCs)		
Tetrachlorethylene	0.79 J	5

Notes: All units in micrograms per liter (µg/L)
 NYSDEC New York State Department of Environmental Conservation
 TOGS Technical and Operational Guidance Series

500 Analyte exceeds NYSDEC TOGS guidance value

Table 4.1
Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:	<div style="display: flex; justify-content: space-around; font-size: small;"> BH-10 BH-10 BH-10 BH-11 BH-11 BH-11 BH-1 BH-2 BH-3 BH-3 </div>													
	<div style="display: flex; justify-content: space-around; font-size: x-small;"> SO-12656942-KP SO-12656942-KP SO-12656942-KP SO-12656942-KP SO-12656942-KP SO-12656942-KP SO-12656942-KP SO-12656942-KP SO-12656942-KP SO-12656942-KP SO-12656942-KP </div>													
Sample ID:	<div style="display: flex; justify-content: space-around; font-size: x-small;"> 121024-023 121024-010 121024-025 121024-026 121024-027 121024-009 121024-004 121024-003 121024-002 121024-013 </div>													
Sample Date:	<div style="display: flex; justify-content: space-around; font-size: x-small;"> 12/11/2024 12/11/2024 12/11/2024 12/11/2024 12/11/2024 12/11/2024 12/10/2024 12/10/2024 12/10/2024 12/10/2024 </div>													
Sample Depth:	<div style="display: flex; justify-content: space-around; font-size: x-small;"> 0-3 ft BGS 3-4 ft BGS 10-12 ft BGS 0-4 ft BGS 0-4 ft BGS 4-6 ft BGS 3-4 ft BGS 4-8 ft BGS 2-4 ft BGS 2-4 ft BGS </div>													
Parameters	Units	NYSDEC Part 375 Soil Cleanup Objectives												
		Unrestricted a	Commercial b											
General Chemistry														
Cyanide (total)	mg/kg	27	27	-	R	-	0.48 U	-	-	0.48 U	-	0.48 U	-	
Herbicides														
2,4,5-TP (Silvex)	mg/kg	3.8	500	0.006 U	-	-	-	0.006 U	-	-	-	-	0.006 U	
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/kg	*	*	0.011 U	-	-	-	0.011 U	-	-	-	-	0.011 U	
Metals														
Aluminum	mg/kg	*	*	-	15000	-	6900	-	-	17000	-	19000	-	
Antimony	mg/kg	*	*	-	0.53 UJ	-	0.53 U	-	-	0.53 U	-	0.53 U	-	
Arsenic	mg/kg	13	16	-	6.0	-	32 ^{ab}	-	-	9.8	-	5.2	-	
Barium	mg/kg	350	400	-	97	-	140	-	-	160	-	170	-	
Beryllium	mg/kg	7.2	590	-	0.73	-	0.89	-	-	0.62	-	0.77	-	
Cadmium	mg/kg	2.5	9.3	-	0.62	-	0.17 J	-	-	0.23 J	-	0.19 J	-	
Calcium	mg/kg	*	*	-	45000	-	33000	-	-	58000	-	41000	-	
Chromium	mg/kg	(1/30) ¹	(400/1500) ¹	-	18	-	0.36 U	-	-	19	-	22	-	
Cobalt	mg/kg	*	*	-	8.6	-	6.4	-	-	8.0	-	9.5	-	
Copper	mg/kg	50	270	-	34	-	59 ^a	-	-	43	-	25	-	
Iron	mg/kg	*	*	-	19000 J-	-	22000	-	-	18000	-	20000	-	
Lead	mg/kg	63	1000	-	73 J ⁺ ^a	-	55	-	-	460 ^a	-	350 ^a	-	
Magnesium	mg/kg	*	*	-	17000	-	5200	-	-	32000	-	14000	-	
Manganese	mg/kg	1600	10000	-	440 J-	-	230	-	-	550	-	470	-	
Mercury	mg/kg	0.18	2.8	-	0.082 J+	-	0.063	-	-	0.64 ^a	-	0.32 ^a	-	
Nickel	mg/kg	30	310	-	20	-	21	-	-	16	-	20	-	
Potassium	mg/kg	*	*	-	4000	-	850	-	-	4200	-	5200	-	
Selenium	mg/kg	3.9	1500	-	0.80 U	-	0.80 U	-	-	0.80 U	-	0.80 U	-	
Silver	mg/kg	2	1500	-	0.33 J	-	0.20 U	-	-	0.20 U	-	0.59 J	-	
Sodium	mg/kg	*	*	-	1600	-	370	-	-	200	-	290	-	
Thallium	mg/kg	*	*	-	0.76 U	-	0.76 U	-	-	0.76 U	-	0.76 U	-	
Vanadium	mg/kg	*	*	-	28	-	15	-	-	30	-	34	-	
Zinc	mg/kg	109	10000	-	150 J ⁺ ^a	-	48	-	-	100	-	110 ^a	-	
Pesticides														
4,4'-DDD	mg/kg	0.0033	92	0.00032 U	-	-	-	0.00032 U	-	-	-	-	0.00032 U	
4,4'-DDE	mg/kg	0.0033	62	0.0023	-	-	-	0.0065 ^a	-	-	-	-	0.00035 U	
4,4'-DDT	mg/kg	0.0033	47	0.00039 U	-	-	-	0.00039 U	-	-	-	-	0.00039 U	
Aldrin	mg/kg	0.005	0.68	0.00041 U	-	-	-	0.00041 U	-	-	-	-	0.00041 U	
alpha-BHC	mg/kg	0.02	3.4	0.0003 U	-	-	-	0.0003 U	-	-	-	-	0.0003 U	
alpha-Chlordane	mg/kg	0.094	24	0.00083 U	-	-	-	0.00083 U	-	-	-	-	0.00083 U	
beta-BHC	mg/kg	0.036	3	0.0003 U	-	-	-	0.0003 U	-	-	-	-	0.0003 U	
delta-BHC	mg/kg	0.04	500	0.00031 U	-	-	-	0.00031 U	-	-	-	-	0.00031 U	
Dieldrin	mg/kg	0.005	1.4	0.044 J ^a	-	-	-	0.0004 U	-	-	-	-	0.0004 U	
Endosulfan I	mg/kg	2.4	200	0.00032 U	-	-	-	0.00032 U	-	-	-	-	0.00032 U	
Endosulfan II	mg/kg	2.4	200	0.0003 U	-	-	-	0.002	-	-	-	-	0.0003 U	
Endosulfan sulfate	mg/kg	2.4	200	0.00031 U	-	-	-	0.00031 U	-	-	-	-	0.00031 U	
Endrin	mg/kg	0.014	89	0.0012 J	-	-	-	0.018 ^a	-	-	-	-	0.00033 U	
Endrin aldehyde	mg/kg	*	*	0.00043 U	-	-	-	0.00043 U	-	-	-	-	0.00043 U	
Endrin ketone	mg/kg	*	*	0.00041 U	-	-	-	0.00065 J	-	-	-	-	0.00041 U	
gamma-BHC (lindane)	mg/kg	0.1	9.2	0.00031 U	-	-	-	0.00031 U	-	-	-	-	0.00031 U	
gamma-Chlordane	mg/kg	*	*	0.00053 U	-	-	-	0.00053 U	-	-	-	-	0.00053 U	
Heptachlor	mg/kg	0.042	15	0.00036 U	-	-	-	0.00036 U	-	-	-	-	0.00036 U	
Heptachlor epoxide	mg/kg	*	*	0.00043 U	-	-	-	0.00043 U	-	-	-	-	0.00043 U	

Table 4.1

Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:		BH-10	BH-10	BH-10	BH-11	BH-11	BH-11	BH-1	BH-2	BH-3	BH-3
Sample ID:		SO-12656942-KP-121024-023	SO-12656942-KP-121024-010	SO-12656942-KP-121024-025	SO-12656942-KP-121024-026	SO-12656942-KP-121024-027	SO-12656942-KP-121024-009	SO-12656942-KP-121024-004	SO-12656942-KP-121024-003	SO-12656942-KP-121024-002	SO-12656942-KP-121024-013
Sample Date:		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024
Sample Depth:		0-3 ft BGS	3-4 ft BGS	10-12 ft BGS	0-4 ft BGS	0-4 ft BGS	4-6 ft BGS	3-4 ft BGS	4-8 ft BGS	2-4 ft BGS	2-4 ft BGS
	NYSDEC Part 375 Soil Cleanup Objectives										
Parameters	Units	Unrestricted	Commercial								
Methoxychlor	mg/kg	*	*	0.0034 U	-	-	0.0043 J+	-	-	-	0.0034 U
Toxaphene	mg/kg	*	*	0.0097 U	-	-	0.0097 U	-	-	-	0.0097 U
Polychlorinated Biphenyls (PCBs)											
Aroclor-1016 (PCB-1016)	mg/kg	*	*	-	-	-	0.049 U	-	-	-	0.049 U
Aroclor-1221 (PCB-1221)	mg/kg	*	*	-	-	-	0.049 U	-	-	-	0.049 U
Aroclor-1232 (PCB-1232)	mg/kg	*	*	-	-	-	0.049 U	-	-	-	0.049 U
Aroclor-1242 (PCB-1242)	mg/kg	*	*	-	-	-	0.049 U	-	-	-	0.049 U
Aroclor-1248 (PCB-1248)	mg/kg	*	*	-	-	-	0.049 U	-	-	-	0.049 U
Aroclor-1254 (PCB-1254)	mg/kg	*	*	-	-	-	0.45	-	-	-	0.12 U
Aroclor-1260 (PCB-1260)	mg/kg	*	*	-	-	-	0.12 U	-	-	-	0.12 U
Total PCBs	mg/kg	0.1	1				0.45 ^a				ND
Semi-volatile Organic Compounds (SVOCs)											
1,4-Dioxane	mg/kg	0.1	130	-	-	-	0.055 U	-	0.055 U	-	0.055 U
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) eth	mg/kg	*	*	-	-	-	0.034 U	-	0.034 U	-	0.034 U
2,4,5-Trichlorophenol	mg/kg	*	*	-	-	-	0.046 U	-	0.046 U	-	0.046 U
2,4,6-Trichlorophenol	mg/kg	*	*	-	-	-	0.034 U	-	0.034 U	-	0.034 U
2,4-Dichlorophenol	mg/kg	*	*	-	-	-	0.018 U	-	0.018 U	-	0.018 U
2,4-Dimethylphenol	mg/kg	*	*	-	-	-	0.041 U	-	0.041 U	-	0.041 U
2,4-Dinitrophenol	mg/kg	*	*	-	-	-	0.78 U	-	0.78 U	-	0.78 U
2,4-Dinitrotoluene	mg/kg	*	*	-	-	-	0.035 U	-	0.035 U	-	0.035 U
2,6-Dinitrotoluene	mg/kg	*	*	-	-	-	0.02 U	-	0.02 U	-	0.02 U
2-Chloronaphthalene	mg/kg	*	*	-	-	-	0.028 U	-	0.028 U	-	0.028 U
2-Chlorophenol	mg/kg	*	*	-	-	-	0.031 U	-	0.031 U	-	0.031 U
2-Methylnaphthalene	mg/kg	*	*	-	-	-	0.075 J	-	0.034 U	-	0.051 J
2-Methylphenol	mg/kg	0.33	500	-	-	-	0.02 U	-	0.02 U	-	0.02 U
2-Nitroaniline	mg/kg	*	*	-	-	-	0.025 U	-	0.025 U	-	0.025 U
2-Nitrophenol	mg/kg	*	*	-	-	-	0.048 U	-	0.048 U	-	0.048 U
3,3'-Dichlorobenzidine	mg/kg	*	*	-	-	-	0.2 U	-	0.2 U	-	0.2 U
3-Nitroaniline	mg/kg	*	*	-	-	-	0.047 U	-	0.047 U	-	0.047 U
4,6-Dinitro-2-methylphenol	mg/kg	*	*	-	-	-	0.17 U	-	0.17 U	-	0.17 U
4-Bromophenyl phenyl ether	mg/kg	*	*	-	-	-	0.024 U	-	0.024 U	-	0.024 U
4-Chloro-3-methylphenol	mg/kg	*	*	-	-	-	0.042 U	-	0.042 U	-	0.042 U
4-Chloroaniline	mg/kg	*	*	-	-	-	0.042 U	-	0.042 U	-	0.042 U
4-Chlorophenyl phenyl ether	mg/kg	*	*	-	-	-	0.021 U	-	0.021 U	-	0.021 U
4-Methylphenol	mg/kg	0.33	500	-	-	-	0.02 U	-	0.02 U	-	0.02 U
4-Nitroaniline	mg/kg	*	*	-	-	-	0.089 U	-	0.089 U	-	0.089 U
4-Nitrophenol	mg/kg	*	*	-	-	-	0.12 U	-	0.12 U	-	0.12 U
Acenaphthene	mg/kg	20	500	-	-	-	0.025 U	-	0.025 U	-	0.066 J
Acenaphthylene	mg/kg	100	500	-	-	-	0.022 U	-	0.022 U	-	0.31
Acetophenone	mg/kg	*	*	-	-	-	0.023 U	-	0.023 U	-	0.023 U
Anthracene	mg/kg	100	500	-	-	-	0.042 U	-	0.042 U	-	0.58
Atrazine	mg/kg	*	*	-	-	-	0.059 U	-	0.059 U	-	0.059 U
Benzaldehyde	mg/kg	*	*	-	-	-	0.14 U	-	0.14 U	-	0.14 U
Benzo(a)anthracene	mg/kg	1	5.6	-	-	-	0.24	-	0.017 U	-	2.3 ^a
Benzo(a)pyrene	mg/kg	1	1	-	-	-	0.27	-	0.025 U	-	1.8 ^{ab}
Benzo(b)fluoranthene	mg/kg	1	5.6	-	-	-	0.34	-	0.027 U	-	2.7 ^a
Benzo(g,h,i)perylene	mg/kg	100	500	-	-	-	0.2	-	0.018 U	-	1.3
Benzo(k)fluoranthene	mg/kg	0.8	56	-	-	-	0.15 J	-	0.022 U	-	1 ^a
Biphenyl (1,1-Biphenyl)	mg/kg	*	*	-	-	-	0.025 U	-	0.025 U	-	0.025 U
bis(2-Chloroethoxy)methane	mg/kg	*	*	-	-	-	0.036 U	-	0.036 U	-	0.036 U
bis(2-Chloroethyl)ether	mg/kg	*	*	-	-	-	0.022 U	-	0.022 U	-	0.022 U
bis(2-Ethylhexyl)phthalate (DEHP)	mg/kg	*	*	-	-	-	0.058 U	-	0.058 U	-	0.13 J

Table 4.1

Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:		BH-10	BH-10	BH-10	BH-11	BH-11	BH-11	BH-1	BH-2	BH-3	BH-3
Sample ID:		SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP
Sample Date:		121024-023	121024-010	121024-025	121024-026	121024-027	121024-009	121024-004	121024-003	121024-002	121024-013
Sample Depth:	NYSDEC Part 375 Soil Cleanup Objectives	0-3 ft BGS	3-4 ft BGS	10-12 ft BGS	0-4 ft BGS	0-4 ft BGS	4-6 ft BGS	3-4 ft BGS	4-8 ft BGS	2-4 ft BGS	2-4 ft BGS
Parameters	Units	Unrestricted	Commercial								
Butyl benzylphthalate (BBP)	mg/kg	*	*	-	0.028 U	-	0.028 U	-	0.052 J	-	-
Caprolactam	mg/kg	*	*	-	0.051 U	-	0.051 U	-	0.051 U	-	-
Carbazole	mg/kg	*	*	-	0.02 U	-	0.02 U	-	0.49	-	-
Chrysene	mg/kg	1	56	-	0.25	-	0.038 U	-	2.5 ^a	-	-
Dibenz(a,h)anthracene	mg/kg	0.33	0.56	-	0.064 J	-	0.03 U	-	0.46 ^a	-	-
Dibenzofuran	mg/kg	7	350	-	0.03 J	-	0.02 U	-	0.077 J	-	-
Diethyl phthalate	mg/kg	*	*	-	0.022 U	-	0.022 U	-	0.022 U	-	-
Dimethyl phthalate	mg/kg	*	*	-	0.02 U	-	0.02 U	-	0.02 U	-	-
Di-n-butylphthalate (DBP)	mg/kg	*	*	-	0.029 U	-	0.029 U	-	0.029 U	-	-
Di-n-octyl phthalate (DnOP)	mg/kg	*	*	-	0.02 U	-	0.02 U	-	0.02 U	-	-
Fluoranthene	mg/kg	100	500	-	0.4	-	0.018 U	-	4.8	-	-
Fluorene	mg/kg	30	500	-	0.02 U	-	0.02 U	-	0.14 J	-	-
Hexachlorobenzene	mg/kg	0.33	6	-	0.023 U	-	0.023 U	-	0.023 U	-	-
Hexachlorobutadiene	mg/kg	*	*	-	0.025 U	-	0.025 U	-	0.025 U	-	-
Hexachlorocyclopentadiene	mg/kg	*	*	-	0.023 U	-	0.023 U	-	0.023 U	-	-
Hexachloroethane	mg/kg	*	*	-	0.022 U	-	0.022 U	-	0.022 U	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	5.6	-	0.17 J	-	0.021 U	-	1.2 ^a	-	-
Isophorone	mg/kg	*	*	-	0.036 U	-	0.036 U	-	0.036 U	-	-
Naphthalene	mg/kg	12	500	-	0.033 J	-	0.022 U	-	0.037 J	-	-
Nitrobenzene	mg/kg	*	*	-	0.019 U	-	0.019 U	-	0.019 U	-	-
N-Nitrosodi-n-propylamine	mg/kg	*	*	-	0.029 U	-	0.029 U	-	0.029 U	-	-
N-Nitrosodiphenylamine	mg/kg	*	*	-	0.14 U	-	0.14 U	-	0.14 U	-	-
Pentachlorophenol	mg/kg	0.8	6.7	-	0.17 U	-	0.17 U	-	0.17 U	-	-
Phenanthrene	mg/kg	100	500	-	0.24	-	0.025 U	-	2.4	-	-
Phenol	mg/kg	0.33	500	-	0.026 U	-	0.026 U	-	0.026 U	-	-
Pyrene	mg/kg	100	500	-	0.36	-	0.02 U	-	3.3	-	-
Volatile Organic Compounds (VOCs)											
1,1,1-Trichloroethane	mg/kg	0.68	500	-	0.00036 U	-	0.0008 J	-	0.00036 U	-	-
1,1,2,2-Tetrachloroethane	mg/kg	*	*	-	0.00081 U	-	0.00081 U	-	0.00081 U	-	-
1,1,2-Trichloroethane	mg/kg	*	*	-	0.00065 U	-	0.00065 U	-	0.00065 U	-	-
1,1-Dichloroethane	mg/kg	0.27	240	-	0.00061 U	-	0.00061 U	-	0.00061 U	-	-
1,1-Dichloroethene	mg/kg	0.33	500	-	0.00061 U	-	0.00061 U	-	0.00061 U	-	-
1,2,4-Trichlorobenzene	mg/kg	*	*	-	0.0003 U	-	0.0003 U	-	0.0003 U	-	-
1,2,4-Trimethylbenzene	mg/kg	3.6	190	-	0.00096 U	-	0.00096 U	-	0.00096 U	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/kg	*	*	-	0.0025 U	-	0.0025 U	-	0.0025 U	-	-
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	*	*	-	0.00064 U	-	0.00064 U	-	0.00064 U	-	-
1,2-Dichlorobenzene	mg/kg	1.1	500	-	0.00039 U	-	0.00039 U	-	0.00039 U	-	-
1,2-Dichloroethane	mg/kg	0.02	30	-	0.00025 U	-	0.00025 U	-	0.00025 U	-	-
1,2-Dichloropropane	mg/kg	*	*	-	0.0025 U	-	0.0025 U	-	0.0025 U	-	-
1,3,5-Trimethylbenzene	mg/kg	8.4	190	-	0.00032 U	-	0.00032 U	-	0.00032 U	-	-
1,3-Dichlorobenzene	mg/kg	2.4	280	-	0.00026 U	-	0.00026 U	-	0.00026 U	-	-
1,4-Dichlorobenzene	mg/kg	1.8	130	-	0.0007 U	-	0.0007 U	-	0.0007 U	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	0.12	500	-	0.0018 U	-	0.0018 U	-	0.0018 U	-	-
2-Hexanone	mg/kg	*	*	-	0.0025 U	-	0.0025 U	-	0.0025 U	-	-
2-Phenylbutane (sec-Butylbenzene)	mg/kg	11	500	-	0.00044 U	-	0.00044 U	-	0.00044 U	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	*	*	-	0.0016 U	-	0.0016 U	-	0.0016 U	-	-
Acetone	mg/kg	0.05	500	-	0.0042 U	-	0.0042 U	-	0.012 J	-	-
Benzene	mg/kg	0.06	44	-	0.00025 U	-	0.00025 U	-	0.00018 J	-	-
Bromodichloromethane	mg/kg	*	*	-	0.00067 U	-	0.00067 U	-	0.00067 U	-	-
Bromoform	mg/kg	*	*	-	0.0025 U	-	0.0025 U	-	0.0025 U	-	-
Bromomethane (Methyl bromide)	mg/kg	*	*	-	0.00045 U	-	0.00045 U	-	0.00045 U	-	-
Carbon disulfide	mg/kg	*	*	-	0.0025 U	-	0.0025 U	-	0.0025 U	-	-
Carbon tetrachloride	mg/kg	0.76	22	-	0.00048 U	-	0.00048 U	-	0.00048 U	-	-

Table 4.1
Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:		BH-10	BH-10	BH-10	BH-11	BH-11	BH-11	BH-1	BH-2	BH-3	BH-3
Sample ID:		SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP	SO-12656942-KP
Sample Date:		121024-023	121024-010	121024-025	121024-026	121024-027	121024-009	121024-004	121024-003	121024-002	121024-013
Sample Depth:		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024
	NYSDEC Part 375 Soil Cleanup Objectives	0-3 ft BGS	3-4 ft BGS	10-12 ft BGS	0-4 ft BGS	0-4 ft BGS	4-6 ft BGS	3-4 ft BGS	4-8 ft BGS	2-4 ft BGS	2-4 ft BGS
Parameters	Units	Unrestricted	Commercial								
Chlorobenzene	mg/kg	1.1	500	-	0.00066 U	-	0.00066 U	-	0.00066 U	-	-
Chloroethane	mg/kg	*	*	-	0.0011 U	-	0.0011 U	-	0.0011 U	-	-
Chloroform (Trichloromethane)	mg/kg	0.37	350	-	0.00031 U	-	0.00031 U	-	0.00031 U	-	-
Chloromethane (Methyl chloride)	mg/kg	*	*	-	0.0003 U	-	0.0003 U	-	0.0003 U	-	-
cis-1,2-Dichloroethene	mg/kg	0.25	500	-	0.00064 U	-	0.00064 U	-	0.00064 U	-	-
cis-1,3-Dichloropropene	mg/kg	*	*	-	0.00072 U	-	0.00072 U	-	0.00072 U	-	-
Cyclohexane	mg/kg	*	*	-	0.0007 U	-	0.0007 U	-	0.0007 U	-	-
Cymene (p-Isopropyltoluene)	mg/kg	*	*	-	0.0004 U	-	0.0004 U	-	0.0004 U	-	-
Dibromochloromethane	mg/kg	*	*	-	0.00064 U	-	0.00064 U	-	0.00064 U	-	-
Dichlorodifluoromethane (CFC-12)	mg/kg	*	*	-	0.00041 U	-	0.00041 U	-	0.00041 U	-	-
Ethylbenzene	mg/kg	1	390	-	0.00035 U	-	0.00043 J	-	0.00035 U	-	-
Isopropyl benzene	mg/kg	*	*	-	0.00075 U	-	0.00075 U	-	0.00075 U	-	-
Methyl acetate	mg/kg	*	*	-	0.003 U	-	0.003 U	-	0.003 U	-	-
Methyl cyclohexane	mg/kg	*	*	-	0.00076 U	-	0.00076 U	-	0.00069 J	-	-
Methyl tert butyl ether (MTBE)	mg/kg	0.93	500	-	0.00049 U	-	0.00049 U	-	0.00049 U	-	-
Methylene chloride	mg/kg	0.05	500	-	0.0023 U	-	0.0023 U	-	0.0024 J	-	-
Naphthalene	mg/kg	12	500	-	0.00067 U	-	0.00067 U	-	0.00067 U	-	-
N-Butylbenzene	mg/kg	12	500	-	0.00044 U	-	0.00044 U	-	0.00044 U	-	-
N-Propylbenzene	mg/kg	3.9	500	-	0.0004 U	-	0.0004 U	-	0.0004 U	-	-
Styrene	mg/kg	*	*	-	0.00025 U	-	0.00025 U	-	0.00025 U	-	-
tert-Butylbenzene	mg/kg	5.9	500	-	0.00052 U	-	0.00052 U	-	0.00052 U	-	-
Tetrachloroethene	mg/kg	1.3	150	-	0.00067 U	-	0.00067 U	-	0.00091 J	-	-
Toluene	mg/kg	0.7	500	-	0.00038 U	-	0.00038 U	-	0.0008 J	-	-
trans-1,2-Dichloroethene	mg/kg	0.19	500	-	0.00052 U	-	0.00052 U	-	0.00052 U	-	-
trans-1,3-Dichloropropene	mg/kg	*	*	-	0.0022 U	-	0.0022 U	-	0.0022 U	-	-
Trichloroethene	mg/kg	0.47	200	-	0.0011 U	-	0.0011 U	-	0.0011 U	-	-
Trichlorofluoromethane (CFC-11)	mg/kg	*	*	-	0.00047 U	-	0.00047 U	-	0.00047 U	-	-
Trifluorotrichloroethane (CFC-113)	mg/kg	*	*	-	0.0011 U	-	0.0011 U	-	0.0011 U	-	-
Vinyl chloride	mg/kg	0.02	13	-	0.00061 U	-	0.00061 U	-	0.00061 U	-	-
Xylenes (total)	mg/kg	0.26	500	-	0.00084 U	-	0.0016 J	-	0.00084 U	-	-

Notes:

1.2 ^a	Detected concentration exceeds NYSDEC Part 375 Soil Cleanup Objective for unrestricted use
1.8 ^{ab}	Detected concentration exceeds NYSDEC Part 375 Soil Cleanup Objective for commercial use

Soil Cleanup Objectives - 6 NYCRR Part 375, Subpart 375-6, effective December 14, 2006.

New York State Department of Environmental Conservation.

mg/kg - Milligrams per kilogram

ND - Not detected

J - The result is an estimated value

J+ - The result is an estimated value; biased high

U - Not detected at the associated reporting limit

UJ - Not detected; associated reporting limit is estimated

R - Rejected

ft BGS - feet below ground surface

¹ - (hexavalent/trivalent)

* - No criteria

-- Not analyzed

Table 4.1

Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:	BH-3	BH-4	BH-5	BH-5	BH-5	BH-6	BH-6	BH-6	BH-6	BH-7	BH-7	BH-8	
Sample ID:	SO-12656942-KP-121024-001	SO-12656942-KP-121024-019	SO-12656942-KP-121024-005	SO-12656942-KP-121024-029	SO-12656942-KP-121024-030	SO-12656942-KP-121024-017	SO-12656942-KP-121024-018	SO-12656942-KP-121024-006	SO-12656942-KP-121024-031	SO-12656942-KP-121024-015	SO-12656942-KP-121024-032	SO-12656942-KP-121024-022	
Sample Date:	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	
Sample Depth:	8-10 ft BGS	0-4 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	0-3 ft BGS	0-3 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	0-1.5 ft BGS	
Parameters	Units												
General Chemistry													
Cyanide (total)	mg/kg	-	-	-	-	-	-	0.48 U	0.48 U	0.48 U	-	-	0.75 J
Herbicides													
2,4,5-TP (Silvex)	mg/kg	-	0.006 U	-	-	-	-	-	-	-	0.006 U	0.006 U	-
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/kg	-	0.011 U	-	-	-	-	-	-	-	0.011 U	0.011 U	-
Metals													
Aluminum	mg/kg	-	-	-	-	-	-	7700	15000	16000	-	-	13000
Antimony	mg/kg	-	-	-	-	-	-	0.53 U	0.53 U	0.53 U	-	-	0.53 U
Arsenic	mg/kg	-	-	-	-	-	-	7.1	3.8	3.2	-	-	6.9
Barium	mg/kg	-	-	-	-	-	-	63	82	73	-	-	110
Beryllium	mg/kg	-	-	-	-	-	-	0.58	0.61	0.64	-	-	0.66
Cadmium	mg/kg	-	-	-	-	-	-	0.18 J	0.34	0.20 J	-	-	0.69
Calcium	mg/kg	-	-	-	-	-	-	42000	26000	37000	-	-	37000
Chromium	mg/kg	-	-	-	-	-	-	21	18	19	-	-	19
Cobalt	mg/kg	-	-	-	-	-	-	4.9	10	7.8	-	-	5.9
Copper	mg/kg	-	-	-	-	-	-	60 ^a	20	19	-	-	56 ^a
Iron	mg/kg	-	-	-	-	-	-	60000	19000	18000	-	-	25000
Lead	mg/kg	-	-	-	-	-	-	130 ^a	16	16	-	-	110 ^a
Magnesium	mg/kg	-	-	-	-	-	-	13000	17000	23000	-	-	6800
Manganese	mg/kg	-	-	-	-	-	-	650	760 J	440 J	-	-	770
Mercury	mg/kg	-	-	-	-	-	-	0.062	0.019 J	0.033	-	-	0.093
Nickel	mg/kg	-	-	-	-	-	-	30	22	19	-	-	17
Potassium	mg/kg	-	-	-	-	-	-	1100	3900	4300	-	-	2400
Selenium	mg/kg	-	-	-	-	-	-	0.80 U	0.80 U	0.80 U	-	-	0.80 U
Silver	mg/kg	-	-	-	-	-	-	0.20 U	0.45 J	0.41 J	-	-	0.20 U
Sodium	mg/kg	-	-	-	-	-	-	210	340	320	-	-	1300
Thallium	mg/kg	-	-	-	-	-	-	0.76 U	0.76 U	0.76 U	-	-	0.88 J
Vanadium	mg/kg	-	-	-	-	-	-	22	30	31	-	-	23
Zinc	mg/kg	-	-	-	-	-	-	62	69	71	-	-	130 ^a
Pesticides													
4,4'-DDD	mg/kg	-	0.00032 U	-	-	-	-	-	-	-	0.00032 U	0.00032 U	-
4,4'-DDE	mg/kg	-	0.00035 U	-	-	-	-	-	-	-	0.00035 U	0.00035 U	-
4,4'-DDT	mg/kg	-	0.00039 U	-	-	-	-	-	-	-	0.00039 U	0.00039 U	-
Aldrin	mg/kg	-	0.00041 U	-	-	-	-	-	-	-	0.00041 U	0.00041 U	-
alpha-BHC	mg/kg	-	0.0003 U	-	-	-	-	-	-	-	0.0003 U	0.0003 U	-
alpha-Chlordane	mg/kg	-	0.00083 U	-	-	-	-	-	-	-	0.00083 U	0.00083 U	-
beta-BHC	mg/kg	-	0.0003 U	-	-	-	-	-	-	-	0.0003 U	0.0003 U	-
delta-BHC	mg/kg	-	0.00031 U	-	-	-	-	-	-	-	0.00031 U	0.00031 U	-
Dieldrin	mg/kg	-	0.0004 U	-	-	-	-	-	-	-	0.0004 U	0.0004 U	-
Endosulfan I	mg/kg	-	0.00032 U	-	-	-	-	-	-	-	0.00032 U	0.00032 U	-
Endosulfan II	mg/kg	-	0.0003 U	-	-	-	-	-	-	-	0.0003 U	0.0003 U	-
Endosulfan sulfate	mg/kg	-	0.00031 U	-	-	-	-	-	-	-	0.00031 U	0.00031 U	-
Endrin	mg/kg	-	0.00051 J	-	-	-	-	-	-	-	0.00051 J	0.00051 J	-
Endrin aldehyde	mg/kg	-	0.00043 U	-	-	-	-	-	-	-	0.00043 U	0.00043 U	-
Endrin ketone	mg/kg	-	0.00041 U	-	-	-	-	-	-	-	0.00041 U	0.00041 U	-
gamma-BHC (lindane)	mg/kg	-	0.00031 U	-	-	-	-	-	-	-	0.00031 U	0.00031 U	-
gamma-Chlordane	mg/kg	-	0.00053 U	-	-	-	-	-	-	-	0.00053 U	0.00053 U	-
Heptachlor	mg/kg	-	0.00036 U	-	-	-	-	-	-	-	0.00036 U	0.00036 U	-
Heptachlor epoxide	mg/kg	-	0.00043 U	-	-	-	-	-	-	-	0.00043 U	0.00043 U	-

Table 4.1

Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:	BH-3	BH-4	BH-5	BH-5	BH-5	BH-6	BH-6	BH-6	BH-6	BH-7	BH-7	BH-8
Sample ID:	SO-12656942-KP-121024-001	SO-12656942-KP-121024-019	SO-12656942-KP-121024-005	SO-12656942-KP-121024-029	SO-12656942-KP-121024-030	SO-12656942-KP-121024-017	SO-12656942-KP-121024-018	SO-12656942-KP-121024-006	SO-12656942-KP-121024-031	SO-12656942-KP-121024-015	SO-12656942-KP-121024-032	SO-12656942-KP-121024-022
Sample Date:	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024
Sample Depth:	8-10 ft BGS	0-4 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	0-3 ft BGS	0-3 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	0-1.5 ft BGS
Parameters	Units	Duplicate		Duplicate		Duplicate		Duplicate		Duplicate		
Methoxychlor	mg/kg	-	0.00034 U	-	-	-	-	-	-	0.00034 U	0.00034 U	-
Toxaphene	mg/kg	-	0.0097 U	-	-	-	-	-	-	0.0097 U	0.0097 U	-
Polychlorinated Biphenyls (PCBs)												
Aroclor-1016 (PCB-1016)	mg/kg	-	0.049 U	-	-	-	-	-	-	0.049 U	0.049 U	-
Aroclor-1221 (PCB-1221)	mg/kg	-	0.049 U	-	-	-	-	-	-	0.049 U	0.049 U	-
Aroclor-1232 (PCB-1232)	mg/kg	-	0.049 U	-	-	-	-	-	-	0.049 U	0.049 U	-
Aroclor-1242 (PCB-1242)	mg/kg	-	0.049 U	-	-	-	-	-	-	0.049 U	0.049 U	-
Aroclor-1248 (PCB-1248)	mg/kg	-	0.049 U	-	-	-	-	-	-	0.049 U	0.049 U	-
Aroclor-1254 (PCB-1254)	mg/kg	-	0.12 U	-	-	-	-	-	-	0.12 U	0.12 U	-
Aroclor-1260 (PCB-1260)	mg/kg	-	0.12 U	-	-	-	-	-	-	0.12 U	0.12 U	-
Total PCBs	mg/kg		ND							ND	ND	
Semi-volatile Organic Compounds (SVOCs)												
1,4-Dioxane	mg/kg	0.055 U	-	0.055 U	-	0.055 U	-	0.055 U	-	-	-	0.055 U
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) eth	mg/kg	0.034 U	-	0.034 U	-	0.034 U	-	0.034 U	-	-	-	0.034 U
2,4,5-Trichlorophenol	mg/kg	0.046 U	-	0.046 U	-	0.046 U	-	0.046 U	-	-	-	0.046 U
2,4,6-Trichlorophenol	mg/kg	0.034 U	-	0.034 U	-	0.034 U	-	0.034 U	-	-	-	0.034 U
2,4-Dichlorophenol	mg/kg	0.018 U	-	0.018 U	-	0.018 U	-	0.018 U	-	-	-	0.018 U
2,4-Dimethylphenol	mg/kg	0.041 U	-	0.041 U	-	0.041 U	-	0.041 U	-	-	-	0.041 U
2,4-Dinitrophenol	mg/kg	0.78 U	-	0.78 U	-	0.78 U	-	0.78 U	-	-	-	0.78 U
2,4-Dinitrotoluene	mg/kg	0.035 U	-	0.035 U	-	0.035 U	-	0.035 U	-	-	-	0.035 U
2,6-Dinitrotoluene	mg/kg	0.02 U	-	0.02 U	-	0.02 U	-	0.02 U	-	-	-	0.02 U
2-Chloronaphthalene	mg/kg	0.028 U	-	0.028 U	-	0.028 U	-	0.028 U	-	-	-	0.028 U
2-Chlorophenol	mg/kg	0.031 U	-	0.031 U	-	0.031 U	-	0.031 U	-	-	-	0.031 U
2-Methylnaphthalene	mg/kg	0.034 U	-	0.034 U	-	0.034 U	-	0.034 U	-	-	-	0.034 U
2-Methylphenol	mg/kg	0.02 U	-	0.02 U	-	0.02 U	-	0.02 U	-	-	-	0.02 U
2-Nitroaniline	mg/kg	0.025 U	-	0.025 U	-	0.025 U	-	0.025 U	-	-	-	0.025 U
2-Nitrophenol	mg/kg	0.048 U	-	0.048 U	-	0.048 U	-	0.048 U	-	-	-	0.048 U
3,3'-Dichlorobenzidine	mg/kg	0.2 U	-	0.2 U	-	0.2 U	-	0.2 U	-	-	-	0.2 U
3-Nitroaniline	mg/kg	0.047 U	-	0.047 U	-	0.047 U	-	0.047 U	-	-	-	0.047 U
4,6-Dinitro-2-methylphenol	mg/kg	0.17 U	-	0.17 U	-	0.17 U	-	0.17 U	-	-	-	0.17 U
4-Bromophenyl phenyl ether	mg/kg	0.024 U	-	0.024 U	-	0.024 U	-	0.024 U	-	-	-	0.024 U
4-Chloro-3-methylphenol	mg/kg	0.042 U	-	0.042 U	-	0.042 U	-	0.042 U	-	-	-	0.042 U
4-Chloroaniline	mg/kg	0.042 U	-	0.042 U	-	0.042 U	-	0.042 U	-	-	-	0.042 U
4-Chlorophenyl phenyl ether	mg/kg	0.021 U	-	0.021 U	-	0.021 U	-	0.021 U	-	-	-	0.021 U
4-Methylphenol	mg/kg	0.02 U	-	0.02 U	-	0.02 U	-	0.02 U	-	-	-	0.02 U
4-Nitroaniline	mg/kg	0.089 U	-	0.089 U	-	0.089 U	-	0.089 U	-	-	-	0.089 U
4-Nitrophenol	mg/kg	0.12 U	-	0.12 U	-	0.12 U	-	0.12 U	-	-	-	0.12 U
Acenaphthene	mg/kg	0.025 U	-	0.025 U	-	0.025 U	-	0.025 U	-	-	-	0.27 J
Acenaphthylene	mg/kg	0.022 U	-	0.022 U	-	0.022 U	-	0.022 U	-	-	-	0.022 U
Acetophenone	mg/kg	0.023 U	-	0.023 U	-	0.023 U	-	0.023 U	-	-	-	0.023 U
Anthracene	mg/kg	0.042 U	-	0.042 U	-	0.042 U	-	0.042 U	-	-	-	1.1
Atrazine	mg/kg	0.059 U	-	0.059 U	-	0.059 U	-	0.059 U	-	-	-	0.059 U
Benzaldehyde	mg/kg	0.14 U	-	0.14 U	-	0.14 U	-	0.14 U	-	-	-	0.14 U
Benzo(a)anthracene	mg/kg	0.017 U	-	0.019 J	-	0.017 U	-	0.81 J	-	-	-	2.3 ^a
Benzo(a)pyrene	mg/kg	0.025 U	-	0.025 U	-	0.025 U	-	1.3 ^{ab}	-	-	-	2.1 ^{ab}
Benzo(b)fluoranthene	mg/kg	0.027 U	-	0.027 U	-	0.027 U	-	1.7 ^a	-	-	-	2.4 ^a
Benzo(g,h,i)perylene	mg/kg	0.018 U	-	0.018 U	-	0.018 U	-	1.1	-	-	-	1.3
Benzo(k)fluoranthene	mg/kg	0.022 U	-	0.022 U	-	0.022 U	-	0.71 J	-	-	-	1.2 ^a
Biphenyl (1,1-Biphenyl)	mg/kg	0.025 U	-	0.025 U	-	0.025 U	-	0.025 U	-	-	-	0.025 U
bis(2-Chloroethoxy)methane	mg/kg	0.036 U	-	0.036 U	-	0.036 U	-	0.036 U	-	-	-	0.036 U
bis(2-Chloroethyl)ether	mg/kg	0.022 U	-	0.022 U	-	0.022 U	-	0.022 U	-	-	-	0.022 U
bis(2-Ethylhexyl)phthalate (DEHP)	mg/kg	0.058 U	-	0.058 U	-	0.087 J	-	0.058 U	-	-	-	0.058 U

Table 4.1

Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:	BH-3	BH-4	BH-5	BH-5	BH-5	BH-6	BH-6	BH-6	BH-6	BH-7	BH-7	BH-8
Sample ID:	SO-12656942-KP-121024-001	SO-12656942-KP-121024-019	SO-12656942-KP-121024-005	SO-12656942-KP-121024-029	SO-12656942-KP-121024-030	SO-12656942-KP-121024-017	SO-12656942-KP-121024-018	SO-12656942-KP-121024-006	SO-12656942-KP-121024-031	SO-12656942-KP-121024-015	SO-12656942-KP-121024-032	SO-12656942-KP-121024-022
Sample Date:	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024
Sample Depth:	8-10 ft BGS	0-4 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	0-3 ft BGS	0-3 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	0-1.5 ft BGS
Parameters	Units											
Butyl benzylphthalate (BBP)	mg/kg	0.028 U	-	0.028 U	-	0.028 U	-	0.028 U	-	-	-	0.028 U
Caprolactam	mg/kg	0.051 U	-	0.051 U	-	0.051 U	-	0.051 U	-	-	-	0.051 U
Carbazole	mg/kg	0.02 U	-	0.02 U	-	0.02 U	-	0.02 U	-	-	-	0.41 J
Chrysene	mg/kg	0.038 U	-	0.038 U	-	0.038 U	-	1	-	-	-	2.3 ^a
Dibenz(a,h)anthracene	mg/kg	0.03 U	-	0.03 U	-	0.03 U	-	0.36 J ^a	-	-	-	0.41 J ^a
Dibenzofuran	mg/kg	0.02 U	-	0.02 U	-	0.02 U	-	0.02 U	-	-	-	0.19 J
Diethyl phthalate	mg/kg	0.022 U	-	0.022 U	-	0.022 U	-	0.022 U	-	-	-	0.022 U
Dimethyl phthalate	mg/kg	0.02 U	-	0.02 U	-	0.02 U	-	0.02 U	-	-	-	0.02 U
Di-n-butylphthalate (DBP)	mg/kg	0.029 U	-	0.029 U	-	0.029 U	-	0.029 U	-	-	-	0.029 U
Di-n-octyl phthalate (DnOP)	mg/kg	0.02 U	-	0.02 U	-	0.02 U	-	0.02 U	-	-	-	0.02 U
Fluoranthene	mg/kg	0.018 U	-	0.044 J	-	0.037 J	-	0.76 J	-	-	-	4.9
Fluorene	mg/kg	0.02 U	-	0.02 U	-	0.02 U	-	0.02 U	-	-	-	0.34 J
Hexachlorobenzene	mg/kg	0.023 U	-	0.023 U	-	0.023 U	-	0.023 U	-	-	-	0.023 U
Hexachlorobutadiene	mg/kg	0.025 U	-	0.025 U	-	0.025 U	-	0.025 U	-	-	-	0.025 U
Hexachlorocyclopentadiene	mg/kg	0.023 U	-	0.023 U	-	0.023 U	-	0.023 U	-	-	-	0.023 U
Hexachloroethane	mg/kg	0.022 U	-	0.022 U	-	0.022 U	-	0.022 U	-	-	-	0.022 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.021 U	-	0.021 U	-	0.021 U	-	0.92 J ^a	-	-	-	1.1 ^a
Isophorone	mg/kg	0.036 U	-	0.036 U	-	0.036 U	-	0.036 U	-	-	-	0.036 U
Naphthalene	mg/kg	0.022 U	-	0.022 U	-	0.022 U	-	0.022 U	-	-	-	0.022 U
Nitrobenzene	mg/kg	0.019 U	-	0.019 U	-	0.019 U	-	0.019 U	-	-	-	0.019 U
N-Nitrosodi-n-propylamine	mg/kg	0.029 U	-	0.029 U	-	0.029 U	-	0.029 U	-	-	-	0.029 U
N-Nitrosodiphenylamine	mg/kg	0.14 U	-	0.14 U	-	0.14 U	-	0.14 U	-	-	-	0.14 U
Pentachlorophenol	mg/kg	0.17 U	-	0.17 U	-	0.17 U	-	0.17 U	-	-	-	0.17 U
Phenanthrene	mg/kg	0.025 U	-	0.025 U	-	0.025 U	-	0.17 J	-	-	-	3.9
Phenol	mg/kg	0.026 U	-	0.026 U	-	0.026 U	-	0.026 U	-	-	-	0.026 U
Pyrene	mg/kg	0.02 U	-	0.034 J	-	0.032 J	-	0.76 J	-	-	-	4
Volatile Organic Compounds (VOCs)												
1,1,1-Trichloroethane	mg/kg	0.00036 U	-	0.00036 U	0.00036 U	-	0.00036 U	-	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.00081 UJ	-	0.00081 U	0.00081 U	-	0.00081 U	-	-	-	-	-
1,1,2-Trichloroethane	mg/kg	0.00065 U	-	0.00065 U	0.00065 U	-	0.00065 U	-	-	-	-	-
1,1-Dichloroethane	mg/kg	0.00061 U	-	0.00061 U	0.00061 U	-	0.00061 U	-	-	-	-	-
1,1-Dichloroethene	mg/kg	0.00061 U	-	0.00061 U	0.00061 U	-	0.00061 U	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.0003 U	-	0.0003 U	0.0003 U	-	0.0003 U	-	-	-	-	-
1,2,4-Trimethylbenzene	mg/kg	0.00096 U	-	0.00096 U	0.00096 U	-	0.00096 U	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/kg	0.0025 U	-	0.0025 U	0.0025 U	-	0.0025 U	-	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	0.00064 U	-	0.00064 U	0.00064 U	-	0.00064 U	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.00039 U	-	0.00039 U	0.00039 U	-	0.00039 U	-	-	-	-	-
1,2-Dichloroethane	mg/kg	0.00025 U	-	0.00025 U	0.00025 U	-	0.00025 U	-	-	-	-	-
1,2-Dichloropropane	mg/kg	0.0025 U	-	0.0025 U	0.0025 U	-	0.0025 U	-	-	-	-	-
1,3,5-Trimethylbenzene	mg/kg	0.00032 U	-	0.00032 U	0.00032 U	-	0.00032 U	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.00026 U	-	0.00026 U	0.00026 U	-	0.00026 U	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.0007 U	-	0.0007 U	0.0007 U	-	0.0007 U	-	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	0.0018 UJ	-	0.0018 U	0.0018 U	-	0.0067 J	-	-	-	-	-
2-Hexanone	mg/kg	0.0025 U	-	0.0025 U	0.0025 U	-	0.0025 U	-	-	-	-	-
2-Phenylbutane (sec-Butylbenzene)	mg/kg	0.00044 U	-	0.00044 U	0.00044 U	-	0.00044 U	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	0.0016 U	-	0.0016 U	0.0016 U	-	0.0016 U	-	-	-	-	-
Acetone	mg/kg	0.0042 U	-	0.0029 J	0.0045 J	-	0.0042 U	-	-	-	-	-
Benzene	mg/kg	0.00025 U	-	0.00025 U	0.00025 U	-	0.0011 J	-	-	-	-	-
Bromodichloromethane	mg/kg	0.00067 U	-	0.00067 U	0.00067 U	-	0.00067 U	-	-	-	-	-
Bromoform	mg/kg	0.0025 U	-	0.0025 U	0.0025 U	-	0.0025 U	-	-	-	-	-
Bromomethane (Methyl bromide)	mg/kg	0.00045 U	-	0.00045 U	0.00045 U	-	0.00045 U	-	-	-	-	-
Carbon disulfide	mg/kg	0.0025 U	-	0.0025 U	0.0025 U	-	0.0025 U	-	-	-	-	-
Carbon tetrachloride	mg/kg	0.00048 U	-	0.00048 U	0.00048 U	-	0.00048 U	-	-	-	-	-

Table 4.1

Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:	BH-3	BH-4	BH-5	BH-5	BH-5	BH-6	BH-6	BH-6	BH-6	BH-7	BH-7	BH-8
Sample ID:	SO-12656942-KP-121024-001	SO-12656942-KP-121024-019	SO-12656942-KP-121024-005	SO-12656942-KP-121024-029	SO-12656942-KP-121024-030	SO-12656942-KP-121024-017	SO-12656942-KP-121024-018	SO-12656942-KP-121024-006	SO-12656942-KP-121024-031	SO-12656942-KP-121024-015	SO-12656942-KP-121024-032	SO-12656942-KP-121024-022
Sample Date:	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024
Sample Depth:	8-10 ft BGS	0-4 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	0-3 ft BGS	0-3 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	4-6 ft BGS	0-1.5 ft BGS
Parameters	Units											
Chlorobenzene	mg/kg	0.00066 U	-	0.00066 U	0.00066 U	-	0.00066 U	-	-	-	-	-
Chloroethane	mg/kg	0.0011 U	-	0.0011 U	0.0011 U	-	0.0011 U	-	-	-	-	-
Chloroform (Trichloromethane)	mg/kg	0.00031 U	-	0.00031 U	0.00031 U	-	0.00031 U	-	-	-	-	-
Chloromethane (Methyl chloride)	mg/kg	0.0003 U	-	0.0003 U	0.0003 U	-	0.0003 U	-	-	-	-	-
cis-1,2-Dichloroethene	mg/kg	0.00064 U	-	0.00064 U	0.00064 U	-	0.00064 U	-	-	-	-	-
cis-1,3-Dichloropropene	mg/kg	0.00072 U	-	0.00072 U	0.00072 U	-	0.00072 U	-	-	-	-	-
Cyclohexane	mg/kg	0.0007 U	-	0.0007 U	0.0007 U	-	0.0007 U	-	-	-	-	-
Cymene (p-Isopropyltoluene)	mg/kg	0.0004 U	-	0.0004 U	0.0004 U	-	0.0004 U	-	-	-	-	-
Dibromochloromethane	mg/kg	0.00064 U	-	0.00064 U	0.00064 U	-	0.00064 U	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	mg/kg	0.00041 U	-	0.00041 U	0.00041 U	-	0.00041 U	-	-	-	-	-
Ethylbenzene	mg/kg	0.00035 U	-	0.00035 U	0.00035 U	-	0.0015 J	-	-	-	-	-
Isopropyl benzene	mg/kg	0.00075 U	-	0.00075 U	0.00075 U	-	0.00075 U	-	-	-	-	-
Methyl acetate	mg/kg	0.003 U	-	0.003 U	0.003 U	-	0.003 U	-	-	-	-	-
Methyl cyclohexane	mg/kg	0.00076 U	-	0.00076 U	0.00076 U	-	0.00076 U	-	-	-	-	-
Methyl tert butyl ether (MTBE)	mg/kg	0.00049 U	-	0.00049 U	0.00049 U	-	0.00049 U	-	-	-	-	-
Methylene chloride	mg/kg	0.002 J	-	0.0023 U	0.0016 J	-	0.0048	-	-	-	-	-
Naphthalene	mg/kg	0.00067 U	-	0.00067 U	0.00067 U	-	0.00067 U	-	-	-	-	-
N-Butylbenzene	mg/kg	0.00044 U	-	0.00044 U	0.00044 U	-	0.00043 J	-	-	-	-	-
N-Propylbenzene	mg/kg	0.0004 U	-	0.0004 U	0.0004 U	-	0.0011 J	-	-	-	-	-
Styrene	mg/kg	0.00025 U	-	0.00025 U	0.00025 U	-	0.00025 U	-	-	-	-	-
tert-Butylbenzene	mg/kg	0.00052 U	-	0.00052 U	0.00052 U	-	0.00052 U	-	-	-	-	-
Tetrachloroethene	mg/kg	0.00067 U	-	0.00067 U	0.00067 U	-	0.00067 U	-	-	-	-	-
Toluene	mg/kg	0.00038 U	-	0.00038 U	0.00038 U	-	0.0022 J	-	-	-	-	-
trans-1,2-Dichloroethene	mg/kg	0.00052 U	-	0.00052 U	0.00052 U	-	0.00052 U	-	-	-	-	-
trans-1,3-Dichloropropene	mg/kg	0.0022 U	-	0.0022 U	0.0022 U	-	0.0022 U	-	-	-	-	-
Trichloroethene	mg/kg	0.0011 U	-	0.0011 U	0.0011 U	-	0.0011 U	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	mg/kg	0.00047 U	-	0.00047 U	0.00047 U	-	0.00047 U	-	-	-	-	-
Trifluorotrichloroethane (CFC-113)	mg/kg	0.0011 U	-	0.0011 U	0.0011 U	-	0.0011 U	-	-	-	-	-
Vinyl chloride	mg/kg	0.00061 U	-	0.00061 U	0.00061 U	-	0.00061 U	-	-	-	-	-
Xylenes (total)	mg/kg	0.00084 U	-	0.00084 U	0.00084 U	-	0.0016 J	-	-	-	-	-

Notes:

1.2^a Detected concentration exceeds NYSDEC Part 375 Soil Cleanup Objective for unrestricted use
1.8^{ab} Detected concentration exceeds NYSDEC Part 375 Soil Cleanup Objective for commercial use

Soil Cleanup Objectives - 6 NYCRR Part 375, Subpart 375-6, effective December 14, 2006.

New York State Department of Environmental Conservation.

mg/kg - Milligrams per kilogram

ND - Not detected

J - The result is an estimated value

J+ - The result is an estimated value; biased high

U - Not detected at the associated reporting limit

UJ - Not detected; associated reporting limit is estimated

R - Rejected

ft BGS - feet below ground surface

¹ - (hexavalent/trivalent)

* - No criteria

-- Not analyzed

Table 4.1
Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:	BH-8	BH-8	BH-8	BH-9	BH-9	BH-9	
Sample ID:	SO-12656942-KP-121024-021	SO-12656942-KP-121024-007	SO-12656942-KP-121024-008	SO-12656942-KP-121024-040	SO-12656942-KP-121024-011	SO-12656942-KP-121024-012	
Sample Date:	12/10/2024	12/10/2024	12/10/2024	12/11/2024	12/11/2024	12/11/2024	
Sample Depth:	1.5-2.5 ft BGS	4-6 ft BGS	4-6 ft BGS	0-3 ft BGS	3-4 ft BGS	3-4 ft BGS	
Parameters	Units						
General Chemistry							
Cyanide (total)	mg/kg	-	-	0.48 UJ	-	-	0.48 U
Herbicides							
2,4,5-TP (Silvex)	mg/kg	-	-	-	-	-	-
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/kg	-	-	-	-	-	-
Metals							
Aluminum	mg/kg	-	-	19000	-	-	20000
Antimony	mg/kg	-	-	0.53 U	-	-	0.53 U
Arsenic	mg/kg	-	-	8.0	-	-	9.5
Barium	mg/kg	-	-	120	-	-	120
Beryllium	mg/kg	-	-	0.81	-	-	0.89
Cadmium	mg/kg	-	-	0.74	-	-	0.53
Calcium	mg/kg	-	-	24000	-	-	7500
Chromium	mg/kg	-	-	22	-	-	23
Cobalt	mg/kg	-	-	12	-	-	11
Copper	mg/kg	-	-	46	-	-	84 ^a
Iron	mg/kg	-	-	31000	-	-	25000
Lead	mg/kg	-	-	150 ^a	-	-	150 ^a
Magnesium	mg/kg	-	-	12000	-	-	5500
Manganese	mg/kg	-	-	2400 ^a	-	-	540
Mercury	mg/kg	-	-	0.17	-	-	0.17
Nickel	mg/kg	-	-	19	-	-	23
Potassium	mg/kg	-	-	3900	-	-	4000
Selenium	mg/kg	-	-	1.7 J	-	-	1.2 J
Silver	mg/kg	-	-	0.50 J	-	-	0.20 U
Sodium	mg/kg	-	-	1600	-	-	270
Thallium	mg/kg	-	-	1.0 J	-	-	0.76 U
Vanadium	mg/kg	-	-	37	-	-	38
Zinc	mg/kg	-	-	200 ^a	-	-	230 ^a
Pesticides							
4,4'-DDD	mg/kg	-	-	-	-	-	-
4,4'-DDE	mg/kg	-	-	-	-	-	-
4,4'-DDT	mg/kg	-	-	-	-	-	-
Aldrin	mg/kg	-	-	-	-	-	-
alpha-BHC	mg/kg	-	-	-	-	-	-
alpha-Chlordane	mg/kg	-	-	-	-	-	-
beta-BHC	mg/kg	-	-	-	-	-	-
delta-BHC	mg/kg	-	-	-	-	-	-
Dieldrin	mg/kg	-	-	-	-	-	-
Endosulfan I	mg/kg	-	-	-	-	-	-
Endosulfan II	mg/kg	-	-	-	-	-	-
Endosulfan sulfate	mg/kg	-	-	-	-	-	-
Endrin	mg/kg	-	-	-	-	-	-
Endrin aldehyde	mg/kg	-	-	-	-	-	-
Endrin ketone	mg/kg	-	-	-	-	-	-
gamma-BHC (lindane)	mg/kg	-	-	-	-	-	-
gamma-Chlordane	mg/kg	-	-	-	-	-	-
Heptachlor	mg/kg	-	-	-	-	-	-
Heptachlor epoxide	mg/kg	-	-	-	-	-	-

Table 4.1

Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:	BH-8	BH-8	BH-8	BH-9	BH-9	BH-9
Sample ID:	SO-12656942-KP-121024-021	SO-12656942-KP-121024-007	SO-12656942-KP-121024-008	SO-12656942-KP-121024-040	SO-12656942-KP-121024-011	SO-12656942-KP-121024-012
Sample Date:	12/10/2024	12/10/2024	12/10/2024	12/11/2024	12/11/2024	12/11/2024
Sample Depth:	1.5-2.5 ft BGS	4-6 ft BGS	4-6 ft BGS	0-3 ft BGS	3-4 ft BGS	3-4 ft BGS
Parameters						
Methoxychlor	mg/kg	-	-	-	-	-
Toxaphene	mg/kg	-	-	-	-	-
Polychlorinated Biphenyls (PCBs)						
Aroclor-1016 (PCB-1016)	mg/kg	-	-	0.049 U	-	-
Aroclor-1221 (PCB-1221)	mg/kg	-	-	0.049 U	-	-
Aroclor-1232 (PCB-1232)	mg/kg	-	-	0.049 U	-	-
Aroclor-1242 (PCB-1242)	mg/kg	-	-	0.049 U	-	-
Aroclor-1248 (PCB-1248)	mg/kg	-	-	0.049 U	-	-
Aroclor-1254 (PCB-1254)	mg/kg	-	-	0.12 U	-	-
Aroclor-1260 (PCB-1260)	mg/kg	-	-	0.12 U	-	-
Total PCBs	mg/kg			ND		
Semi-volatile Organic Compounds (SVOCs)						
1,4-Dioxane	mg/kg	-	0.055 U	-	0.055 U	-
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) eth	mg/kg	-	0.034 U	-	0.034 U	-
2,4,5-Trichlorophenol	mg/kg	-	0.046 U	-	0.046 U	-
2,4,6-Trichlorophenol	mg/kg	-	0.034 U	-	0.034 U	-
2,4-Dichlorophenol	mg/kg	-	0.018 U	-	0.018 U	-
2,4-Dimethylphenol	mg/kg	-	0.041 U	-	0.041 U	-
2,4-Dinitrophenol	mg/kg	-	0.78 U	-	0.78 U	-
2,4-Dinitrotoluene	mg/kg	-	0.035 U	-	0.035 U	-
2,6-Dinitrotoluene	mg/kg	-	0.02 U	-	0.02 U	-
2-Chloronaphthalene	mg/kg	-	0.028 U	-	0.028 U	-
2-Chlorophenol	mg/kg	-	0.031 U	-	0.031 U	-
2-Methylnaphthalene	mg/kg	-	0.034 U	-	0.084 J	-
2-Methylphenol	mg/kg	-	0.02 U	-	0.02 U	-
2-Nitroaniline	mg/kg	-	0.025 U	-	0.025 U	-
2-Nitrophenol	mg/kg	-	0.048 U	-	0.048 U	-
3,3'-Dichlorobenzidine	mg/kg	-	0.2 U	-	0.2 U	-
3-Nitroaniline	mg/kg	-	0.047 U	-	0.047 U	-
4,6-Dinitro-2-methylphenol	mg/kg	-	0.17 U	-	0.17 U	-
4-Bromophenyl phenyl ether	mg/kg	-	0.024 U	-	0.024 U	-
4-Chloro-3-methylphenol	mg/kg	-	0.042 U	-	0.042 U	-
4-Chloroaniline	mg/kg	-	0.042 U	-	0.042 U	-
4-Chlorophenyl phenyl ether	mg/kg	-	0.021 U	-	0.021 U	-
4-Methylphenol	mg/kg	-	0.02 U	-	0.02 U	-
4-Nitroaniline	mg/kg	-	0.089 U	-	0.089 U	-
4-Nitrophenol	mg/kg	-	0.12 U	-	0.12 U	-
Acenaphthene	mg/kg	-	0.025 U	-	0.025 U	-
Acenaphthylene	mg/kg	-	0.054 J	-	0.022 U	-
Acetophenone	mg/kg	-	0.023 U	-	0.023 U	-
Anthracene	mg/kg	-	0.12 J	-	0.042 U	-
Atrazine	mg/kg	-	0.059 U	-	0.059 U	-
Benzaldehyde	mg/kg	-	0.14 U	-	0.14 U	-
Benzo(a)anthracene	mg/kg	-	0.54	-	0.15 J	-
Benzo(a)pyrene	mg/kg	-	0.31	-	0.15 J	-
Benzo(b)fluoranthene	mg/kg	-	0.43	-	0.2 J	-
Benzo(g,h,i)perylene	mg/kg	-	0.18 J	-	0.13 J	-
Benzo(k)fluoranthene	mg/kg	-	0.24	-	0.084 J	-
Biphenyl (1,1-Biphenyl)	mg/kg	-	0.025 U	-	0.025 U	-
bis(2-Chloroethoxy)methane	mg/kg	-	0.036 U	-	0.036 U	-
bis(2-Chloroethyl)ether	mg/kg	-	0.022 U	-	0.022 U	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/kg	-	0.058 U	-	0.058 U	-

Table 4.1
Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:	BH-8	BH-8	BH-8	BH-9	BH-9	BH-9
Sample ID:	SO-12656942-KP-121024-021	SO-12656942-KP-121024-007	SO-12656942-KP-121024-008	SO-12656942-KP-121024-040	SO-12656942-KP-121024-011	SO-12656942-KP-121024-012
Sample Date:	12/10/2024	12/10/2024	12/10/2024	12/11/2024	12/11/2024	12/11/2024
Sample Depth:	1.5-2.5 ft BGS	4-6 ft BGS	4-6 ft BGS	0-3 ft BGS	3-4 ft BGS	3-4 ft BGS
Parameters	Units					
Butyl benzylphthalate (BBP)	mg/kg	-	0.028 U	-	-	0.028 U
Caprolactam	mg/kg	-	0.051 U	-	-	0.051 U
Carbazole	mg/kg	-	0.082 J	-	-	0.02 U
Chrysene	mg/kg	-	0.5	-	-	0.17 J
Dibenz(a,h)anthracene	mg/kg	-	0.047 J	-	-	0.039 J
Dibenzofuran	mg/kg	-	0.02 U	-	-	0.033 J
Diethyl phthalate	mg/kg	-	0.022 U	-	-	0.022 U
Dimethyl phthalate	mg/kg	-	0.02 U	-	-	0.02 U
Di-n-butylphthalate (DBP)	mg/kg	-	0.029 U	-	-	0.029 U
Di-n-octyl phthalate (DnOP)	mg/kg	-	0.02 U	-	-	0.02 U
Fluoranthene	mg/kg	-	1.3	-	-	0.28
Fluorene	mg/kg	-	0.03 J	-	-	0.02 U
Hexachlorobenzene	mg/kg	-	0.023 U	-	-	0.023 U
Hexachlorobutadiene	mg/kg	-	0.025 U	-	-	0.025 U
Hexachlorocyclopentadiene	mg/kg	-	0.023 U	-	-	0.023 U
Hexachloroethane	mg/kg	-	0.022 U	-	-	0.022 U
Indeno(1,2,3-cd)pyrene	mg/kg	-	0.15 J	-	-	0.097 J
Isophorone	mg/kg	-	0.036 U	-	-	0.036 U
Naphthalene	mg/kg	-	0.04 J	-	-	0.04 J
Nitrobenzene	mg/kg	-	0.019 U	-	-	0.019 U
N-Nitrosodi-n-propylamine	mg/kg	-	0.029 U	-	-	0.029 U
N-Nitrosodiphenylamine	mg/kg	-	0.14 U	-	-	0.14 U
Pentachlorophenol	mg/kg	-	0.17 U	-	-	0.17 U
Phenanthrene	mg/kg	-	0.41	-	-	0.21
Phenol	mg/kg	-	0.026 U	-	-	0.026 U
Pyrene	mg/kg	-	1	-	-	0.24
Volatile Organic Compounds (VOCs)						
1,1,1-Trichloroethane	mg/kg	0.00036 U	0.00036 U	-	-	0.00036 U
1,1,2,2-Tetrachloroethane	mg/kg	0.00081 U	0.00081 U	-	-	0.00081 U
1,1,2-Trichloroethane	mg/kg	0.00065 U	0.00065 U	-	-	0.00065 U
1,1-Dichloroethane	mg/kg	0.00061 U	0.00061 U	-	-	0.00061 U
1,1-Dichloroethene	mg/kg	0.00061 U	0.00061 U	-	-	0.00061 U
1,2,4-Trichlorobenzene	mg/kg	0.0003 U	0.0003 U	-	-	0.0003 U
1,2,4-Trimethylbenzene	mg/kg	0.00096 U	0.00096 U	-	-	0.00096 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/kg	0.0025 U	0.0025 U	-	-	0.0025 U
1,2-Dibromoethane (Ethylene dibromide)	mg/kg	0.00064 U	0.00064 U	-	-	0.00064 U
1,2-Dichlorobenzene	mg/kg	0.00039 U	0.00039 U	-	-	0.00039 U
1,2-Dichloroethane	mg/kg	0.00025 U	0.00025 U	-	-	0.00025 U
1,2-Dichloropropane	mg/kg	0.0025 U	0.0025 U	-	-	0.0025 U
1,3,5-Trimethylbenzene	mg/kg	0.00032 U	0.00032 U	-	-	0.00032 U
1,3-Dichlorobenzene	mg/kg	0.00026 U	0.00026 U	-	-	0.00026 U
1,4-Dichlorobenzene	mg/kg	0.0007 U	0.0007 U	-	-	0.0007 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/kg	0.0018 U	0.027	-	-	0.0018 U
2-Hexanone	mg/kg	0.0025 U	0.0025 U	-	-	0.0025 U
2-Phenylbutane (sec-Butylbenzene)	mg/kg	0.00044 U	0.00044 U	-	-	0.00044 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/kg	0.0016 U	0.0016 U	-	-	0.0016 U
Acetone	mg/kg	0.04	0.14 ^a	-	-	0.0042 U
Benzene	mg/kg	0.00025 U	0.00025 U	-	-	0.00025 U
Bromodichloromethane	mg/kg	0.00067 U	0.00067 U	-	-	0.00067 U
Bromoform	mg/kg	0.0025 U	0.0025 U	-	-	0.0025 U
Bromomethane (Methyl bromide)	mg/kg	0.00045 U	0.00045 U	-	-	0.00045 U
Carbon disulfide	mg/kg	0.0025 U	0.0025 U	-	-	0.0025 U
Carbon tetrachloride	mg/kg	0.00048 U	0.00048 U	-	-	0.00048 U

Table 4.1

Soil Analytical Results - Non-PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:	BH-8	BH-8	BH-8	BH-9	BH-9	BH-9	
Sample ID:	SO-12656942-KP-121024-021	SO-12656942-KP-121024-007	SO-12656942-KP-121024-008	SO-12656942-KP-121024-040	SO-12656942-KP-121024-011	SO-12656942-KP-121024-012	
Sample Date:	12/10/2024	12/10/2024	12/10/2024	12/11/2024	12/11/2024	12/11/2024	
Sample Depth:	1.5-2.5 ft BGS	4-6 ft BGS	4-6 ft BGS	0-3 ft BGS	3-4 ft BGS	3-4 ft BGS	
Parameters	Units						
Chlorobenzene	mg/kg	0.00066 U	0.00066 U	-	-	0.00066 U	-
Chloroethane	mg/kg	0.0011 U	0.0011 U	-	-	0.0011 U	-
Chloroform (Trichloromethane)	mg/kg	0.00031 U	0.00031 U	-	-	0.00031 U	-
Chloromethane (Methyl chloride)	mg/kg	0.0003 U	0.0003 U	-	-	0.0003 U	-
cis-1,2-Dichloroethene	mg/kg	0.00064 U	0.00064 U	-	-	0.00064 U	-
cis-1,3-Dichloropropene	mg/kg	0.00072 U	0.00072 U	-	-	0.00072 U	-
Cyclohexane	mg/kg	0.0007 U	0.0007 U	-	-	0.0007 U	-
Cymene (p-Isopropyltoluene)	mg/kg	0.0004 U	0.0003 J	-	-	0.0004 U	-
Dibromochloromethane	mg/kg	0.00064 U	0.00064 U	-	-	0.00064 U	-
Dichlorodifluoromethane (CFC-12)	mg/kg	0.00041 U	0.00041 U	-	-	0.00041 U	-
Ethylbenzene	mg/kg	0.00035 U	0.00035 U	-	-	0.00035 U	-
Isopropyl benzene	mg/kg	0.00075 U	0.00075 U	-	-	0.00075 U	-
Methyl acetate	mg/kg	0.003 U	0.003 U	-	-	0.003 U	-
Methyl cyclohexane	mg/kg	0.00076 U	0.00076 U	-	-	0.00076 U	-
Methyl tert butyl ether (MTBE)	mg/kg	0.00049 U	0.00049 U	-	-	0.00049 U	-
Methylene chloride	mg/kg	0.0023 U	0.0019 J	-	-	0.0023 U	-
Naphthalene	mg/kg	0.00067 U	0.00067 U	-	-	0.00067 U	-
N-Butylbenzene	mg/kg	0.00044 U	0.00044 U	-	-	0.00044 U	-
N-Propylbenzene	mg/kg	0.0004 U	0.0004 U	-	-	0.0004 U	-
Styrene	mg/kg	0.00025 U	0.00025 U	-	-	0.00025 U	-
tert-Butylbenzene	mg/kg	0.00052 U	0.00052 U	-	-	0.00052 U	-
Tetrachloroethene	mg/kg	0.00067 U	0.00067 U	-	-	0.00067 U	-
Toluene	mg/kg	0.00038 U	0.00038 U	-	-	0.00038 U	-
trans-1,2-Dichloroethene	mg/kg	0.00052 U	0.00052 U	-	-	0.00052 U	-
trans-1,3-Dichloropropene	mg/kg	0.0022 U	0.0022 U	-	-	0.0022 U	-
Trichloroethene	mg/kg	0.0011 U	0.0011 U	-	-	0.0011 U	-
Trichlorofluoromethane (CFC-11)	mg/kg	0.00047 U	0.00047 U	-	-	0.00047 U	-
Trifluorotrichloroethane (CFC-113)	mg/kg	0.0011 U	0.0011 U	-	-	0.0011 U	-
Vinyl chloride	mg/kg	0.00061 U	0.00061 U	-	-	0.00061 U	-
Xylenes (total)	mg/kg	0.00084 U	0.00084 U	-	-	0.00084 U	-

Notes:

1.2 ^a	Detected concentration exceeds NYSDEC Part 375 Soil Cleanup Objective for unrestricted use
1.8 ^{ab}	Detected concentration exceeds NYSDEC Part 375 Soil Cleanup Objective for commercial use

Soil Cleanup Objectives - 6 NYCRR Part 375, Subpart 375-6, effective December 14, 2006.

New York State Department of Environmental Conservation.

mg/kg - Milligrams per kilogram

ND - Not detected

J - The result is an estimated value

J+ - The result is an estimated value; biased high

U - Not detected at the associated reporting limit

UJ - Not detected; associated reporting limit is estimated

R - Rejected

ft BGS - feet below ground surface

¹ - (hexavalent/trivalent)

* - No criteria

-- Not analyzed

Table 4.2
Soil Analytical Results - PFAS Analytes
1112 and 1114 Niagara Street
Buffalo, New York

Sample Location:		BH-11	BH-3	BH-5	BH-5	BH-7	BH-9
Sample ID:		SO-12656942-KP-121024-028	SO-12656942-KP-121024-020	SO-12656942-KP-121024-014	SO-12656942-KP-121024-033	SO-12656942-KP-121024-016	SO-12656942-KP-121024-024
Sample Date:		12/11/2024	12/10/2024	12/10/2024	12/10/2024	12/10/2024	12/11/2024
Sample Depth:		0-4 ft BGS	1-2 ft BGS	3-4 ft BGS	3-4 ft BGS	4-6 ft BGS	0-3 ft BGS
Sample Depth:	Guidance Values for Anticipated Site Use	0-4 ft BGS	1-2 ft BGS	3-4 ft BGS	Duplicate 3-4 ft BGS	4-6 ft BGS	0-3 ft BGS
Parameters	Units	Unrestricted	Commercial				
PFAS		a	b				
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	ug/kg	*	*	0.20 U	0.20 U	0.20 U	0.20 U
2,2,3-Trifluoro-3-[1,1,2,2,3,3-hexafluoro-3-(trifluoromethoxy)propoxy]-propanoic acid (DONA)	ug/kg	*	*	0.20 U	0.20 U	0.20 U	0.20 U
2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)	ug/kg	*	*	1.3 U	1.3 U	1.3 U	1.3 U
2H,2H,3H,3H-Perfluorohexanoic acid (3:3 FTCA)	ug/kg	*	*	0.25 U	0.25 U	0.25 U	0.25 U
2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)	ug/kg	*	*	1.3 U	1.3 U	1.3 U	1.3 U
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid	ug/kg	*	*	0.20 U	0.20 U	0.20 U	0.20 U
Fluorotelomer sulfonic acid (4:2)	ug/kg	*	*	0.20 U	0.20 U	0.20 U	0.20 U
Fluorotelomer sulfonic acid (6:2)	ug/kg	*	*	0.20 U	0.20 U	0.20 U	0.20 U
Fluorotelomer sulfonic acid (8:2)	ug/kg	*	*	0.20 U	0.20 U	0.20 U	0.20 U
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ug/kg	*	*	0.20 U	0.20 U	0.20 U	0.20 U
N-Ethyl perfluorooctane sulfonamide (EtFOSE)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
N-Ethyl perfluorooctane sulfonamide acetic acid (N-EtFOSAA)	ug/kg	*	*	0.050 UJ	0.050 U	0.050 UJ	0.050 U
N-Ethyl perfluorooctane sulfonamide ethanol (N-EtFOSE)	ug/kg	*	*	0.50 U	0.50 U	0.50 U	0.50 U
N-Methyl perfluorooctane sulfonamide acetic acid	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
N-Methyl perfluorooctane sulfonamide ethanol (MeFOSE)	ug/kg	*	*	0.50 U	0.50 U	0.50 U	0.50 U
N-Methyl-perfluorooctane sulfonamide	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	ug/kg	*	*	0.10 U	0.10 U	0.10 U	0.10 U
Perfluoro(2-ethoxyethane) sulfonic acid (PFEEA)	ug/kg	*	*	0.10 U	0.10 U	0.10 U	0.10 U
Perfluoro-3-methoxypropanoic acid (PFMPA)	ug/kg	*	*	0.10 U	0.10 U	0.10 U	0.10 U
Perfluoro-4-methoxybutanoic acid (PFMBA)	ug/kg	*	*	0.10 U	0.10 U	0.10 U	0.10 U
Perfluorobutane sulfonic acid (PFBS)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorobutanoic acid (PFBA)	ug/kg	*	*	0.20 U	0.20 U	0.20 U	0.20 U
Perfluorodecanesulfonic acid (PFDS)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorodecanoic acid (PFDA)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorododecane sulfonic acid (PFDoDS)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorododecanoic acid (PFDoDA)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorohexane sulfonic acid (PFHxS)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorohexanoic acid (PFHxA)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorononane sulfonic acid (PFNS)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorononanoic acid (PFNA)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorooctane sulfonamide (FOSA)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorooctane sulfonic acid (PFOS)	ug/kg	0.88	440	0.091 J	0.050 U	0.050 U	0.050 U
Perfluorooctanoic acid (PFOA)	ug/kg	0.66	500	0.050 U	0.050 U	0.050 U	0.050 U
Perfluoropentane sulfonic acid (PFPeS)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluoropentanoic acid (PFPeA)	ug/kg	*	*	0.10 U	0.10 U	0.10 U	0.10 U
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluorotridecanoic acid (PFTrDA)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U
Perfluoroundecanoic acid (PFUnA)	ug/kg	*	*	0.050 U	0.050 U	0.050 U	0.050 U

Notes:

Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs, effective April 2023.
 New York State Department of Environmental Conservation.
 ug/kg - Micrograms per kilogram
 J - The result is an estimated value
 U - Not detected at the associated reporting limit
 UU - Not detected; associated reporting limit is estimated
 ft BGS - feet below ground surface
 * - No criteria

Table 4.3

**Groundwater Analytical Results - VOCs
1112 and 1114 Niagara Street
Buffalo, New York**

Sample Location:	Class GA Criteria			TPMW-1	TPMW-2	TPMW-4	
	Parameters	Units	Standards a	Guidance Values b	GW-12656942-KP- 121024-002	GW-12656942-KP- 121024-001	GW-12656942-KP- 121024-003
					12/11/2024	12/11/2024	12/11/2024
Sample ID:							
Sample Date:							
Volatile Organic Compounds							
1,1,1-Trichloroethane	ug/L	5	*	0.82 U	0.82 U	0.82 U	
1,1,2,2-Tetrachloroethane	ug/L	5	*	0.21 U	0.21 U	0.21 U	
1,1,2-Trichloroethane	ug/L	1	*	0.23 U	0.23 U	0.23 U	
1,1-Dichloroethane	ug/L	5	*	0.38 U	0.38 U	0.38 U	
1,1-Dichloroethene	ug/L	5	*	0.29 U	0.29 U	0.29 U	
1,2,4-Trichlorobenzene	ug/L	5	*	0.41 U	0.41 U	0.41 U	
1,2,4-Trimethylbenzene	ug/L	5	*	0.75 U	0.75 U	0.75 U	
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.04	*	0.39 U	0.39 U	0.39 U	
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0006	*	0.73 U	0.73 U	0.73 U	
1,2-Dichlorobenzene	ug/L	3	*	0.79 U	0.79 U	0.79 U	
1,2-Dichloroethane	ug/L	0.6	*	0.21 U	0.21 U	0.21 U	
1,2-Dichloropropane	ug/L	1	*	0.72 U	0.72 U	0.72 U	
1,3,5-Trimethylbenzene	ug/L	5	*	0.77 U	0.77 U	0.77 U	
1,3-Dichlorobenzene	ug/L	3	*	0.78 U	0.78 U	0.78 U	
1,4-Dichlorobenzene	ug/L	3	*	0.84 U	0.84 U	0.84 U	
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	*	50	3.1 J	1.3 U	1.3 U	
2-Hexanone	ug/L	*	50	1.2 U	1.2 U	1.2 U	
2-Phenylbutane (sec-Butylbenzene)	ug/L	5	*	0.75 U	0.75 U	0.75 U	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	*	*	2.1 U	2.1 U	2.1 U	
Acetone	ug/L	*	50	15 J	17 J	3.0 U	
Benzene	ug/L	1	*	0.41 U	0.41 U	0.41 U	
Bromodichloromethane	ug/L	*	50	0.39 U	0.39 U	0.39 U	
Bromoform	ug/L	*	50	0.26 U	0.26 U	0.26 U	
Bromomethane (Methyl bromide)	ug/L	5	-	0.69 U	0.69 U	0.69 U	
Carbon disulfide	ug/L	60	60	0.19 U	0.19 U	0.19 U	
Carbon tetrachloride	ug/L	5	*	0.27 U	0.27 U	0.27 U	
Chlorobenzene	ug/L	5	*	0.75 U	0.75 U	0.75 U	
Chloroethane	ug/L	5	*	0.32 U	0.32 U	0.32 U	
Chloroform (Trichloromethane)	ug/L	7	*	0.34 U	0.34 U	0.34 U	
Chloromethane (Methyl chloride)	ug/L	5	*	0.35 U	0.35 U	0.35 U	
cis-1,2-Dichloroethene	ug/L	5	*	0.81 U	0.81 U	0.81 U	
cis-1,3-Dichloropropene	ug/L	0.4	*	0.36 U	0.36 U	0.36 U	
Cyclohexane	ug/L	*	*	0.18 U	0.18 U	0.18 U	
Cymene (p-Isopropyltoluene)	ug/L	5	-	0.31 U	0.31 U	0.31 U	
Dibromochloromethane	ug/L	*	50	0.32 U	0.32 U	0.32 U	
Dichlorodifluoromethane (CFC-12)	ug/L	5	*	0.68 U	0.68 U	0.68 U	
Ethylbenzene	ug/L	5	*	0.74 U	0.74 U	0.74 U	
Isopropyl benzene	ug/L	5	*	0.79 U	0.79 U	0.79 U	
Methyl acetate	ug/L	*	*	1.3 U	1.3 U	1.3 U	
Methyl cyclohexane	ug/L	*	*	0.16 U	0.16 U	0.16 U	
Methyl tert butyl ether (MTBE)	ug/L	*	10	0.16 U	0.16 U	0.16 U	
Methylene chloride	ug/L	5	*	0.44 U	0.44 U	0.44 U	
Naphthalene	ug/L	*	10	0.43 U	0.43 U	0.43 U	
N-Butylbenzene	ug/L	5	*	0.64 U	0.64 U	0.64 U	
N-Propylbenzene	ug/L	5	*	0.69 U	0.69 U	0.69 U	
Styrene	ug/L	5	*	0.73 U	0.73 U	0.73 U	
tert-Butylbenzene	ug/L	5	*	0.81 U	0.81 U	0.81 U	
Tetrachloroethene	ug/L	5	*	0.36 U	0.36 U	0.36 U	
Toluene	ug/L	5	*	0.51 U	0.51 U	0.51 U	
trans-1,2-Dichloroethene	ug/L	5	*	0.90 U	0.90 U	0.90 U	
trans-1,3-Dichloropropene	ug/L	0.4	*	0.37 U	0.37 U	0.37 U	
Trichloroethene	ug/L	5	*	0.46 U	0.46 U	0.46 U	
Trichlorofluoromethane (CFC-11)	ug/L	5	*	0.88 U	0.88 U	0.88 U	
Trifluorotrchloroethane (CFC-113)	ug/L	5	*	0.31 U	0.31 U	0.31 U	
Vinyl chloride	ug/L	2	*	0.90 U	0.90 U	0.90 U	
Xylenes (total)	ug/L	5	*	0.66 U	0.66 U	0.66 U	

Notes:

Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998), Table 1, and April 2000 Addendum.
New York State Department of Environmental Conservation.

ug/L - Micrograms per liter

J - The result is an estimated value

U - Not detected at the associated reporting limit

* - No criteria/not applicable

Table 4.4

**Groundwater Analytical Results - SVOCs, Metals and Cyanide
1112 and 1114 Niagara Street
Buffalo, New York**

Parameters	Units	Class GA Criteria		TPMW-2 GW-12656942-KP- 121024-001 12/11/2024
		Standards	Guidance Values	
		a	b	
Metals, total				
Aluminum	ug/L	*	*	510
Antimony	ug/L	3	*	6.8 U
Arsenic	ug/L	25	*	5.6 U
Barium	ug/L	1000	*	74
Beryllium	ug/L	*	3	0.3 U
Cadmium	ug/L	5	*	0.5 U
Calcium	ug/L	*	*	150000
Chromium	ug/L	50	*	1.1 J
Cobalt	ug/L	*	*	2.9 J
Copper	ug/L	200	*	1.6 U
Iron	ug/L	300	*	350 ^a
Lead	ug/L	25	*	3 U
Magnesium	ug/L	*	35000	51000 ^b
Manganese	ug/L	300	*	260
Mercury	ug/L	0.7	*	0.042 U
Nickel	ug/L	100	*	3.1 J
Potassium	ug/L	*	*	7100
Selenium	ug/L	10	*	8.7 U
Silver	ug/L	50	*	1.7 U
Sodium	ug/L	20000	*	180000 ^a
Thallium	ug/L	*	0.5	10 U
Vanadium	ug/L	*	*	1.5 U
Zinc	ug/L	*	2000	1.5 U
Metals, dissolved				
Aluminum (dissolved)	ug/L	*	*	60 U
Antimony (dissolved)	ug/L	3	*	6.8 U
Arsenic (dissolved)	ug/L	25	*	5.6 U
Barium (dissolved)	ug/L	1000	*	66
Beryllium (dissolved)	ug/L	*	3	0.3 U
Cadmium (dissolved)	ug/L	5	*	0.5 U
Calcium (dissolved)	ug/L	*	*	170000
Chromium (dissolved)	ug/L	50	*	1 U
Cobalt (dissolved)	ug/L	*	*	2.7 J
Copper (dissolved)	ug/L	200	*	1.6 U
Iron (dissolved)	ug/L	300	*	19 U
Lead (dissolved)	ug/L	25	*	3 U
Magnesium (dissolved)	ug/L	*	35000	58000 ^b
Manganese (dissolved)	ug/L	300	*	290
Mercury (dissolved)	ug/L	0.7	*	0.042 U
Nickel (dissolved)	ug/L	100	*	3.7 J
Potassium (dissolved)	ug/L	*	*	7000
Selenium (dissolved)	ug/L	10	*	8.7 U
Silver (dissolved)	ug/L	50	*	1.7 U
Sodium (dissolved)	ug/L	20000	*	180000 ^a
Thallium (dissolved)	ug/L	*	0.5	10 U
Vanadium (dissolved)	ug/L	*	*	1.5 U
Zinc (dissolved)	ug/L	*	2000	1.5 U
Semivolatile Organic Compounds				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	5	*	0.52 U
2,4,5-Trichlorophenol	ug/L	1	*	0.48 U
2,4,6-Trichlorophenol	ug/L	1	*	0.61 U
2,4-Dichlorophenol	ug/L	5	*	0.51 U
2,4-Dimethylphenol	ug/L	1	50	0.50 U
2,4-Dinitrophenol	ug/L	1	10	2.2 U
2,4-Dinitrotoluene	ug/L	5	*	0.45 U
2,6-Dinitrotoluene	ug/L	5	*	0.40 U
2-Chloronaphthalene	ug/L	*	10	0.46 U
2-Chlorophenol	ug/L	1	*	0.53 U
2-Methylnaphthalene	ug/L	*	*	0.60 U

Table 4.4

**Groundwater Analytical Results - SVOCs, Metals and Cyanide
1112 and 1114 Niagara Street
Buffalo, New York**

Sample Location:	Sample ID:	Sample Date:	Class GA Criteria		TPMW-2 GW-12656942-KP- 121024-001 12/11/2024
			Standards	Guidance Values	
			a	b	
Parameters	Units				
2-Methylphenol	ug/L	1	*	0.40 U	
2-Nitroaniline	ug/L	5	*	0.42 U	
2-Nitrophenol	ug/L	1	*	0.48 U	
3,3'-Dichlorobenzidine	ug/L	5	*	0.40 U	
3-Nitroaniline	ug/L	5	*	0.48 U	
4,6-Dinitro-2-methylphenol	ug/L	1	*	2.2 U	
4-Bromophenyl phenyl ether	ug/L	*	*	0.45 U	
4-Chloro-3-methylphenol	ug/L	1	*	0.45 U	
4-Chloroaniline	ug/L	5	*	0.59 U	
4-Chlorophenyl phenyl ether	ug/L	*	*	0.35 U	
4-Methylphenol	ug/L	1	*	0.36 U	
4-Nitroaniline	ug/L	5	*	0.25 U	
4-Nitrophenol	ug/L	1	*	1.5 U	
Acenaphthene	ug/L	*	20	0.41 U	
Acenaphthylene	ug/L	*	*	0.38 U	
Acetophenone	ug/L	*	*	0.61 J+	
Anthracene	ug/L	*	50	0.28 U	
Atrazine	ug/L	7.5	*	0.46 U	
Benzaldehyde	ug/L	*	*	0.27 U	
Benzo(a)anthracene	ug/L	*	0.002	0.36 U	
Benzo(a)pyrene	ug/L	ND	*	0.47 U	
Benzo(b)fluoranthene	ug/L	*	0.002	0.34 U	
Benzo(g,h,i)perylene	ug/L	*	*	0.35 U	
Benzo(k)fluoranthene	ug/L	*	0.002	0.73 U	
Biphenyl (1,1-Biphenyl)	ug/L	5	*	0.65 U	
bis(2-Chloroethoxy)methane	ug/L	5	*	0.35 U	
bis(2-Chloroethyl)ether	ug/L	1	*	0.40 U	
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5	*	2.2 U	
Butyl benzylphthalate (BBP)	ug/L	*	50	1.0 U	
Caprolactam	ug/L	*	*	2.8 J+	
Carbazole	ug/L	*	*	0.30 U	
Chrysene	ug/L	*	0.002	0.33 U	
Dibenz(a,h)anthracene	ug/L	*	*	0.42 U	
Dibenzofuran	ug/L	*	*	0.51 U	
Diethyl phthalate	ug/L	*	50	0.60 J+	
Dimethyl phthalate	ug/L	*	50	4.1 J+	
Di-n-butylphthalate (DBP)	ug/L	50	*	0.69 J+	
Di-n-octyl phthalate (DnOP)	ug/L	*	50	0.47 U	
Fluoranthene	ug/L	*	50	0.40 U	
Fluorene	ug/L	*	50	0.36 U	
Hexachlorobenzene	ug/L	0.04	*	0.51 U	
Hexachlorobutadiene	ug/L	0.5	*	0.68 U	
Hexachlorocyclopentadiene	ug/L	5	*	0.59 U	
Hexachloroethane	ug/L	5	*	0.59 U	
Indeno(1,2,3-cd)pyrene	ug/L	*	0.002	0.47 U	
Isophorone	ug/L	*	50	0.43 U	
Naphthalene	ug/L	*	10	0.76 U	
Nitrobenzene	ug/L	0.4	*	0.29 U	
N-Nitrosodi-n-propylamine	ug/L	*	*	0.54 U	
N-Nitrosodiphenylamine	ug/L	*	50	0.51 U	
Pentachlorophenol	ug/L	1	*	2.2 U	
Phenanthrene	ug/L	*	50	0.44 U	
Phenol	ug/L	1	*	1.2 J+ ^a	
Pyrene	ug/L	*	50	0.34 U	
General Chemistry					
Cyanide (total)	ug/L	200	*	4.1 U	

Notes:

350 Detected concentration exceeds Class GA Standard or Guidance Value
Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998), Table 1, and April 2000 Addendum.
New York State Department of Environmental Conservation.

µg/L - Micrograms per liter

ND - Non-detect

J - The result is an estimated value

J+ - The result is an estimated value; biased high

U - Not detected at the associated reporting limit

* - No criteria/not applicable

Table 4.5

**Groundwater Analytical Results - 1,4-Dioxane
1112 and 1114 Niagara Street
Buffalo, New York**

Sample Location: TPMW-2
 Sample ID: GW-12656942-KP-
121024-011
 Sample Date: 12/11/2024

Parameters	Units	NYS MCL		NYS Guidance Value	
		a	b		
SVOAsSIM					
1,4-Dioxane	ug/L	1	0.35	3.4 ^{ab}	

Notes:

3.4 ^a	Detected concentration exceeds NYS MCL
3.4 ^{ab}	Detected concentration exceeds NYS MCL and NYS Guidance Values

New York State (NYS) Maximum Contaminant Level (MCL), effective 2020.

New York State (NYS) Class GA Groundwater Guidance Values, effective 2023. Amendment to 1998 Division of Water Technical and Operational Guidelines (TOGS) NO 1.1.1
 µg/L - Micrograms per liter

Table 5
 Analytical Results Summary - Sub-Slab Vapor and Indoor Air Sampling
 2024 Sub-Slab Soil Vapor and Indoor Air Sampling Report
 Oliver Gear Building - 1112 and 1114 Niagara Street
 Buffalo, New York

SampleID SampleID Canister Date Time EMSL_SAMPLE_ID	Outdoor Air		Location 1				Location 2				Location 3				Location 4				Location 5				Location 6									
	OA-001 HD2140 12/19/2024 09:15 49016-01	IA-002 HD2182 12/19/2024 09:30 49016-02	SS-003 HD2699 12/19/2024 09:40 49016-03	IA-004 HD2751 12/19/2024 09:45 49016-04	SS-005 HD2790 12/19/2024 10:00 49016-05	IA-006 HD2870 12/19/2024 10:10 49016-06	SS-007 HD9545 12/19/2024 10:20 49016-07	IA-008 HD9557 12/19/2024 10:30 49016-08	SS-009 HD9562 12/19/2024 10:40 49016-09	IA-010 HD11722 12/19/2024 10:50 49016-10	SS-011 HD11725 12/19/2024 11:10 49016-11	IA-012 HD2272 12/19/2024 11:25 49016-12	SS-013 HD11714 12/19/2024 11:35 49016-13	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv
1,1,1-Trichloroethane	0.20 U	1.1 U	0.20 U	1.1 U	7.0	38	0.20 U	1.1 U	2.6	14	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U	1.0 U	5.5 U	0.95	5.2	59000 D3	320000 D3		
1,1,2,2-Tetrachloroethane	0.20 U	1.4 U	0.20 U	1.4 U	1.0 U	6.9 U	0.20 U	1.4 U	1.0 U	6.9 U	0.20 U	1.4 U	1.0 U	6.9 U	0.20 U	1.4 U	1.0 U	6.9 U	0.20 U	1.4 U	1.0 U	6.9 U	0.20 U	1.4 U	1.0 U	6.9 U	0.20 U	1.4 U	1.0 U	6.9 U	0.20 U	1.4 U
1,1,2-Trichloroethane	0.20 U	1.1 U	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U	1.0 U	5.5 U	0.20 U	1.1 U
1,1-Dichloroethane	0.20 U	0.81 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U
1,1-Dichloroethene	0.20 U	0.79 U	0.20 U	0.79 U	1.0 U	4.0 U	0.20 U	0.79 U	1.0 U	4.0 U	0.20 U	0.79 U	1.0 U	4.0 U	0.20 U	0.79 U	1.0 U	4.0 U	0.20 U	0.79 U	1.0 U	4.0 U	0.20 U	0.79 U	1.0 U	4.0 U	0.35	1.4	28000 D3	110000 D3		
1,2,4-Trichlorobenzene	0.20 U	1.5 U	0.20 U	1.5 U	1.0 U	7.4 U	0.20 U	1.5 U	1.0 U	7.4 U	0.20 U	1.5 U	1.0 U	7.4 U	0.20 U	1.5 U	1.0 U	7.4 U	0.20 U	1.5 U	1.0 U	7.4 U	0.20 U	1.5 U	1.0 U	7.4 U	0.20 U	1.5 U	1.0 U	7.4 U	0.20 U	1.5 U
1,2,4-Trimethylbenzene	0.20 U	1.0 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	0.20 U	1.5 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U
1,2-Dichlorobenzene	0.20 U	1.2 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U
1,2-Dichloroethane	0.20 U	0.81 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U	1.0 U	4.0 U	0.20 U	0.81 U
1,2-Dichloropropane	0.20 U	0.92 U	0.20 U	0.92 U	1.0 U	4.6 U	0.20 U	0.92 U	1.0 U	4.6 U	0.20 U	0.92 U	1.0 U	4.6 U	0.20 U	0.92 U	1.0 U	4.6 U	0.20 U	0.92 U	1.0 U	4.6 U	0.20 U	0.92 U	1.0 U	4.6 U	0.20 U	0.92 U	1.0 U	4.6 U	0.20 U	0.92 U
1,2-Dichlorotetrafluoroethane (CFC 114)	0.20 U	1.4 U	0.20 U	1.4 U	1.0 U	7.0 U	0.20 U	1.4 U	1.0 U	7.0 U	0.20 U	1.4 U	1.0 U	7.0 U	0.20 U	1.4 U	1.0 U	7.0 U	0.20 U	1.4 U	1.0 U	7.0 U	0.20 U	1.4 U	1.0 U	7.0 U	0.20 U	1.4 U	1.0 U	7.0 U	0.20 U	1.4 U
1,3,5-Trimethylbenzene	0.20 U	1.0 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U
1,3-Butadiene	0.20 U	0.44 U	0.20 U	0.44 U	1.0 U	2.2 U	0.20 U	0.44 U	1.0 U	2.2 U	0.20 U	0.44 U	1.0 U	2.2 U	0.20 U	0.44 U	1.0 U	2.2 U	0.20 U	0.44 U	1.0 U	2.2 U	0.20 U	0.44 U	1.0 U	2.2 U	0.20 U	0.44 U	1.0 U	2.2 U	0.20 U	0.44 U
1,3-Dichlorobenzene	0.20 U	1.2 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U
1,4-Dichlorobenzene	0.20 U	1.2 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U	1.0 U	6.0 U	0.20 U	1.2 U
1,4-Dioxane	0.20 U	0.72 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U
2,2,4-Trimethylpentane	0.20 U	0.93 U	0.34	1.6	1.0 U	4.7 U	0.22	1.1	1.0 U	4.7 U	0.20 U	0.93 U	1.0 U	4.7 U	0.20 U	0.93 U	1.0 U	4.7 U	0.20 U	0.93 U	1.0 U	4.7 U	0.20 U	0.93 U	1.0 U	4.7 U	0.20 U	0.93 U	1.0 U	4.7 U	0.20 U	0.93 U
2-Butanone (Methyl ethyl ketone) (MEK)	0.20 U	0.59 U	0.20 U	0.59 U	2.3	6.7	0.20 U	0.59 U	3.9	11	0.20 U	0.59 U	4.1	12	0.20 U	0.59 U	2.1	6.3	0.20 U	0.59 U	1.0 U	2.9 U	0.20 U	0.59 U	1.0 U	2.9 U	0.20 U	0.59 U	1.3	3.8	0.20 U	0.59 U
2-Chlorotoluene	0.20 U	1.0 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U
2-Hexanone	0.20 U	0.82 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U
4-Ethyl toluene	0.20 U	1.0 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	0.20 U	0.82 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U
Acetone	1.2	2.9	2.6	6.1	24	56	2.8	6.6	31	73	2.0	4.7	31	74	2.1	4.9	61	150	2.8	6.7	13	30	2.2	5.2	13	30	2.2	5.2	13	30	2.2	5.2
Acetonitrile	0.20 U	0.34 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U
Acyonitrile	0.20 U	0.43 U	0.20 U	0.43 U	1.0 U	2.2 U	0.20 U	0.43 U	1.0 U	2.2 U	0.20 U	0.43 U	1.0 U	2.2 U	0.20 U	0.43 U	1.0 U	2.2 U	0.20 U	0.43 U	1.0 U	2.2 U	0.20 U	0.43 U	1.0 U	2.2 U	0.20 U	0.43 U	1.0 U	2.2 U	0.20 U	0.43 U
Allyl chloride	0.20 U	0.63 U	0.20 U	0.63 U	1.0 U	3.1 U	0.20 U	0.63 U	1.0 U	3.1 U	0.20 U	0.63 U	1.0 U	3.1 U	0.20 U	0.63 U	1.0 U	3.1 U	0.20 U	0.63 U	1.0 U	3.1 U	0.20 U	0.63 U	1.0 U	3.1 U	0.20 U	0.63 U	1.0 U	3.1 U	0.20 U	0.63 U
Benzene	0.20 U	0.64 U	0.37	1.2	1.0 U	3.2 U	0.24	0.77	1.0 U	3.2 U	0.20 U	0.64 U	1.1	3.5	0.20 U	0.64 U	1.1	3.6	0.20 U	0.64 U	1.0 U	3.2 U	0.20 U	0.64 U	1.0 U	3.2 U	0.20 U	0.64 U	41	130	0.20 U	0.64 U
Benzyl chloride	0.20 U	1.0 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U
Bromodichloromethane	0.20 U	1.3 U	0.20 U	1.3 U	1.0 U	6.7 U	0.20 U	1.3 U	1.0 U	6.7 U	0.20 U	1.3 U	1.0 U	6.7 U	0.20 U	1.3 U	1.0 U	6.7 U	0.20 U	1.3 U	1.0 U	6.7 U	0.20 U	1.3 U	1.0 U	6.7 U	0.20 U	1.3 U	1.0 U	6.7 U	0.20 U	1.3 U
Bromoform	0.20 U	2.1 U	0.20 U	2.1 U	1.0 U	10 U	0.20 U	2.1 U	1.0 U	10 U	0.20 U	2.1 U	1.0 U	10 U	0.20 U	2.1 U	1.0 U	10 U	0.20 U	2.1 U	1.0 U	10 U	0.20 U	2.1 U	1.0 U	10 U	0.20 U	2.1 U	1.0 U	10 U	0.20 U	2.1 U
Bromomethane (Methyl bromide)	0.20 U	0.78 U	0.20 U	0.78 U	1.0 U	3.9 U	0.20 U	0.78 U	1.0 U	3.9 U	0.20 U	0.78 U	1.0 U	3.9 U	0.20 U	0.78 U	1.0 U	3.9 U	0.20 U	0.78 U	1.0 U	3.9 U	0.20 U	0.78 U	1.0 U	3.9 U	0.20 U	0.78 U	1.0 U	3.9 U	0.20 U	0.78 U
Butane	0.65	1.5	0.89	2.1	1.0 U	2.4 U	0.85	2.0	1.0 U</																							

Table 5
Analytical Results Summary - Sub-Slab Vapor and Indoor Air Sampling
2024 Sub-Slab Soil Vapor and Indoor Air Sampling Report
Oliver Gear Building - 1112 and 1114 Niagara Street
Buffalo, New York

SampleID	Outdoor Air		Location 1			Location 2			Location 3			Location 4			Location 5			Location 6		
	SampleID	Canister	IA-002	SS-003	IA-004	SS-005	IA-006	SS-007	IA-008	SS-009	IA-010	SS-011	IA-012	SS-013						
Date	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024	12/19/2024						
Time	09:15	09:30	09:40	09:45	10:00	10:10	10:20	10:30	10:40	10:50	11:10	11:25	11:35							
EMSL_SAMPLE_ID	49016-01	49016-02	49016-03	49016-04	49016-05	49016-06	49016-07	49016-08	49016-09	49016-10	49016-11	49016-12	49016-13							
Target Compounds	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3	ppbv	ug/m3		
Isopropyl benzene	0.20 U	1.0 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U	0.20 U	1.0 U	1.0 U	4.9 U		
Methyl methacrylate	0.20 U	0.82 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U		
Methyl tert butyl ether (MTBE)	0.20 U	0.72 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U	1.0 U	3.6 U	0.20 U	0.72 U	1.0 U	3.6 U		
Methylene chloride	0.20 U	0.69 U	0.20 U	0.69 U	1.0 U	3.5 U	0.20 U	0.69 U	1.0 U	3.5 U	0.20 U	0.69 U	1.0 U	3.5 U	0.20 U	0.69 U	1.0 U	3.5 U		
Naphthalene	0.20 U	1.0 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U	0.20 U	1.0 U	1.0 U	5.2 U		
N-Heptane	0.20 U	0.82 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U	0.20 U	0.82 U	1.0 U	4.1 U		
o-Xylene	0.20 U	0.87 U	0.20 U	0.87 U	1.0 U	4.3 U	0.20 U	0.87 U	1.0 U	4.3 U	0.20 U	0.87 U	1.0 U	4.3 U	0.20 U	0.87 U	1.0 U	4.3 U		
Propylene (propene)	0.20 U	0.34 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U	1.0 U	1.7 U	0.20 U	0.34 U	1.0 U	1.7 U		
Styrene	0.20 U	0.85 U	0.20 U	0.85 U	1.0 U	4.3 U	0.20 U	0.85 U	1.0 U	4.3 U	0.20 U	0.85 U	1.0 U	4.3 U	0.20 U	0.85 U	1.0 U	4.3 U		
tert-Butyl alcohol	0.20 U	0.61 U	0.20 U	0.61 U	1.4	4.4	0.20 U	0.61 U	1.0 U	3.0 U	0.20 U	0.61 U	1.0 U	3.0 U	0.20 U	0.61 U	1.0 U	3.0 U		
Tetrachloroethene	0.20 U	1.4 U	0.20 U	1.4 U	1.0 U	6.8 U	0.20 U	1.4 U	28	190	0.20 U	1.4 U	1.0 U	6.8 U	0.20 U	1.4 U	1.0 U	6.8 U		
Tetrahydrofuran	0.20 U	0.59 U	0.20 U	0.59 U	1.0 U	2.9 U	0.20 U	0.59 U	1.0 U	2.9 U	0.20 U	0.59 U	1.0 U	2.9 U	0.20 U	0.59 U	1.0 U	2.9 U		
Toluene	0.20 U	0.75 U	0.80	3.0	2.5	9.5	0.48	1.8	3.5	13	0.26	1.0	2.8	11	0.21	0.80	5.9	22		
trans-1,2-Dichloroethene	0.20 U	0.79 U	0.20 U	0.79 U	1.0 U	4.0 U	0.20 U	0.79 U	1.0 U	4.0 U	0.20 U	0.79 U	1.0 U	4.0 U	0.20 U	0.79 U	1.0 U	4.0 U		
trans-1,3-Dichloropropene	0.20 U	0.91 U	0.20 U	0.91 U	1.0 U	4.5 U	0.20 U	0.91 U	1.0 U	4.5 U	0.20 U	0.91 U	1.0 U	4.5 U	0.20 U	0.91 U	1.0 U	4.5 U		
Trichloroethene	0.20 U	1.1 U	0.20 U	1.1 U	1.0 U	5.4 U	0.20 U	1.1 U	1.0 U	5.4 U	0.20 U	1.1 U	1.0 U	5.4 U	0.20 U	1.1 U	1.0 U	5.4 U		
Trichlorofluoromethane (CFC-11)	0.20 U	1.1 U	0.21	1.2	1.0 U	5.6 U	0.20 U	1.1 U	1.0 U	5.6 U	0.20	1.1	1.0 U	5.6 U	0.20 U	1.1 U	1.0 U	5.6 U		
Trifluorotrichloroethane (CFC-113)	0.20 U	1.5 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U	1.0 U	7.7 U	0.20 U	1.5 U	1.0 U	7.7 U		
Vinyl acetate	0.20 U	0.70 U	0.20 U	0.70 U	1.0 U	3.5 U	0.20 U	0.70 U	1.0 U	3.5 U	0.20 U	0.70 U	1.0 U	3.5 U	0.20 U	0.70 U	1.0 U	3.5 U		
Vinyl bromide (Bromoethene)	0.20 U	0.87 U	0.20 U	0.87 U	1.0 U	4.4 U	0.20 U	0.87 U	1.0 U	4.4 U	0.20 U	0.87 U	1.0 U	4.4 U	0.20 U	0.87 U	1.0 U	4.4 U		
Vinyl chloride	0.20 U	0.51 U	0.20 U	0.51 U	1.0 U	2.6 U	0.20 U	0.51 U	1.0 U	2.6 U	0.20 U	0.51 U	1.0 U	2.6 U	0.20 U	0.51 U	1.0 U	2.6 U		
Xylenes (total)	0.40 U	1.7 U	0.40 U	1.7 U	2.0 U	8.7 U	0.40 U	1.7 U	76	330	0.51	2.2	420 D1	1800 D1	0.40 U	1.7 U	3.5	15		
TIC																				
2-Methylbutane A	--	--	1.4 JN	4.2 JN	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
2-Methylpentane A	--	--	1.5 JN	5.4 JN	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Isobutylene A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Methylcyclohexane A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Pentane A	--	--	--	--	--	--	1.2 JN	3.6 JN	--	--	--	--	--	--	--	--	--	--		
Propane A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5 JN	2.7 JN	5.0 JN		
Unknown 1	--	--	--	--	--	--	--	--	--	23 JN	86 JN	--	--	--	--	--	--	--		
Unknown hydrocarbon 1	--	--	--	--	--	--	--	--	--	--	--	5.4 JN	20 JN	--	--	--	--	--		
Unknown hydrocarbon 2	--	--	--	--	--	--	--	--	--	--	--	5.5 JN	21 JN	--	--	--	--	--		

Notes:
U - Not detected at the associated reporting limit.
JN - Estimated value based on a 1:1 response to internal standard, presumptive evidence of compound based on library match.
D1 - Result reported from diluted analysis. Number represents dilution analysis round number.
PPBV - Parts per billion by volume.
UG/M³ - micrograms per cubic meter.

**TABLE 6
GROUNDWATER ANALYTICAL RESULTS**

Parameter Tested	Sample ID	NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1)
	RI-BRW-1A	
METALS		
Aluminum	240	NS
Barium	82	1000
Calcium	175000	NS
Chromium	2.3	50
Cobalt	0.69	NS
Copper	3.8	200
Iron	5,700	300
Magnesium	87,300	35,000
Manganese	160	300
Nickel	3.9	100
Potassium	26400	NS
Silver	4.1	50.0
Sodium	360,000	20,000
SVOCs		
Di-n-butyl phthalate	0.43	50
Total TICs	63.8	NS
VOCS		
1,1-Dichloroethane	320	5
Chloroform	6	7
1,1,1-Trichloroethane	44	5
Vinyl chloride	11	2
1,1-Dichloroethene	85	5
trans-1,2-Dichloroethene	6.5	5
Trichloroethene	21	5
cis-1,2-Dichloroethene	25	5
Cyclohexane	1.6	NS
Methyl cyclohexane	4.7	NS
PFAS		
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.00073	ND
Perfluorobutanoic acid (PFBA)	0.0053	ND
Perfluoroheptanoic acid (PFHpA)	0.00096	ND
Perfluorohexanesulfonic acid (PFHxS)	0.00064	ND
Perfluorohexanoic acid (PFHxA)	0.0021	ND
Perfluorononanoic acid (PFNA)	0.00037	ND
Perfluorooctanoic acid (PFOA)	0.0017	0.0067
Perfluoropentanoic acid (PFPeA)	0.0018	ND
ORGANOCHLORINE PESTICIDES		
Endosulfan I	0.26	NS

Notes:

- (1) Sample was collected 3/13/2026.
- (2) All values are provided in parts per billion (ppb) or micrograms per liter (ug/L).
- ND Not Detected
- NS No Standard

NYSDEC New York State Department of Environmental Conservation

TICs Tentatively Identified Compounds

Exceeds TOGS standard

**TABLE 7
TANK CONFIRMATION SAMPLING ANALYTICAL RESULTS**

Analyte	Sample Identification			CP-51 SCL
	Tank 1 E	Tank 1 N	Tank 1 S	
SEMIVOLITALE ORGANIC COMPOUNDS (SVOCs)				
Benzo[a]anthracene	ND	ND	0.11	1
Benzo[a]pyrene	ND	ND	0.091	1
Benzo[b]fluoranthene	ND	ND	0.12	1
Benzo[g,h,i]perylene	ND	ND	0.079	100
Benzo[k]fluoranthene	ND	ND	0.048	0.8
Chrysene	ND	ND	0.1	1
Fluoranthene	ND	ND	0.18	100
Indeno[1,2,3-cd]pyrene	ND	ND	0.039	0.5
Pyrene	ND	ND	0.14	100
VOLITALE ORGANIC COMPOUNDS (VOCs) - NO DETECTIONS				

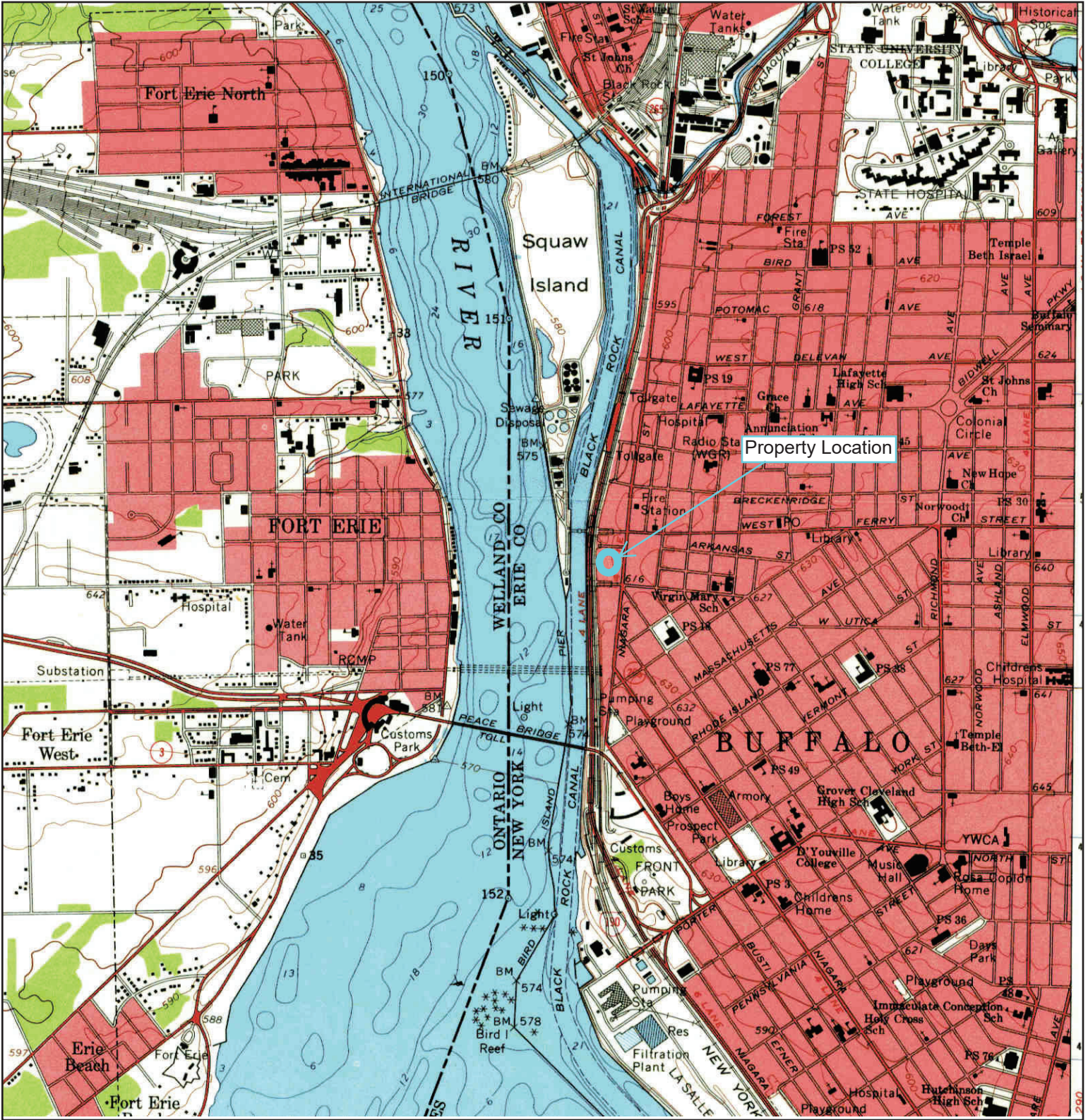
1. All samples were collected on 10/27/2025.
2. All samples were collected from an approximate depth of 9 feet below ground surface.
3. All values are provided in parts per million (ppm) or milligrams per kilogram (mg/kg).

ND Not Detected

CP-51 SCL Commissioner Policy-51 Soil Cleanup Levels

Figures

Figure 1: Site Location Map



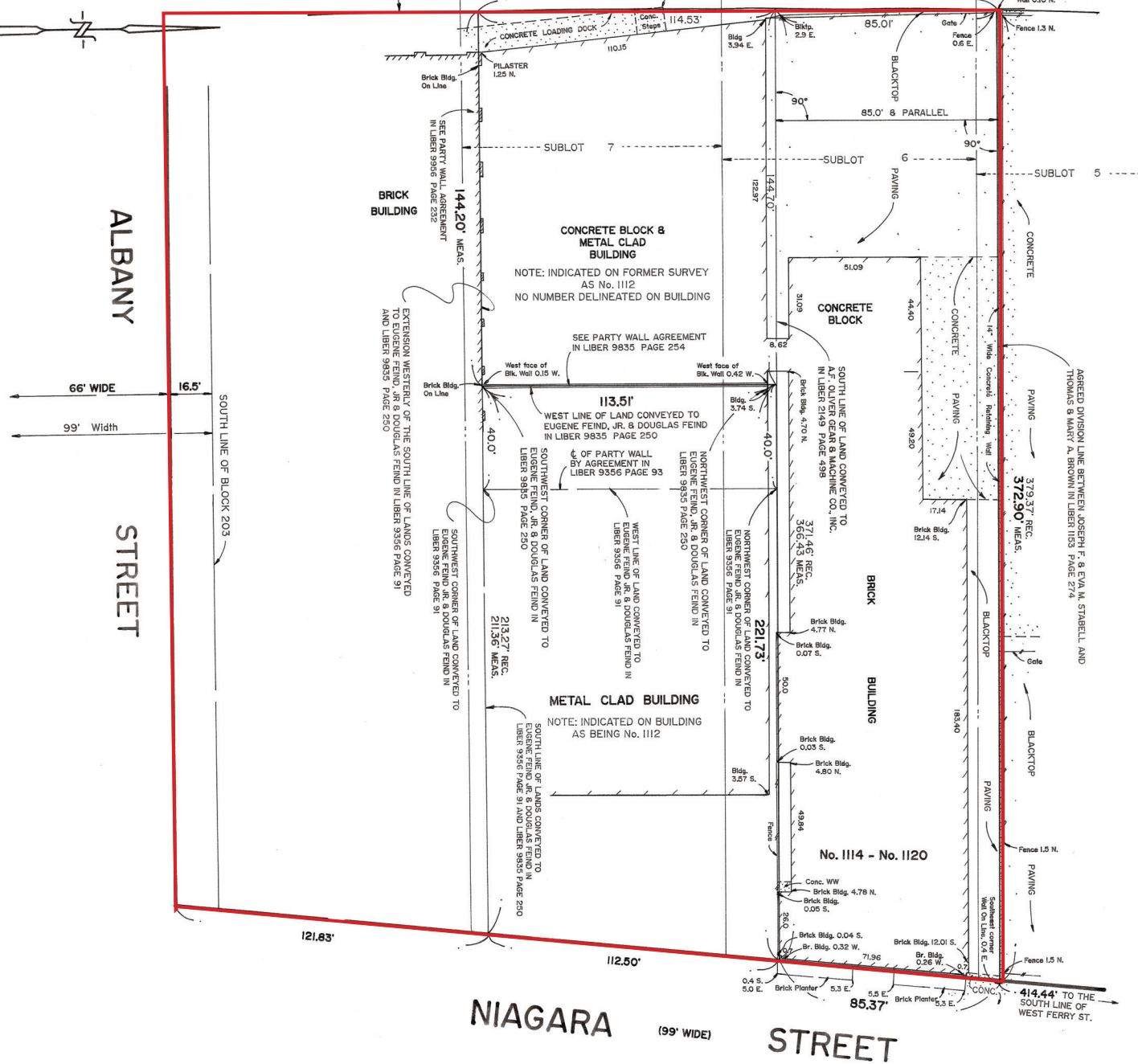
<p>N ↑</p>	<p>TARGET QUAD NAME: BUFFALO NW MAP YEAR: 1965</p>	<p>SITE NAME: 1106-1110 Niagara Street ADDRESS: 1106-1110 Niagara Street Buffalo, NY 14213 LAT/LONG: 42.9136 / -78.9003</p>	<p>CLIENT: Panamerican Environmental, Inc CONTACT: Peter J Gorton INQUIRY#: 4098441.4 RESEARCH DATE: 10/07/2014</p>
	<p>SERIES: 7.5 SCALE: 1:24000</p>		

NO INVESTIGATION MADE FOR SUBSURFACE UTILITY LINES, SEWER, DRAINS, CONDUITS, ETC.

CONRAIL (NEW YORK CENTRAL & HUDSON RIVER RAILROAD) (PENN-CENTRAL)

Figure 2: Site Survey

— BCP Site Boundary



PART OF SUBLOTS 5, 6 & 7
MAP COVER 42
PART OF BLOCK 203
CITY OF BUFFALO
ERIE COUNTY, NEW YORK

SONNENBERGER LAND SURVEYING
2238 WILLIAM STREET
BUFFALO, NEW YORK 14206
(716) 854-0159
SonnenbergerLandSurveying.com

SCALE: 1" = 30'
DATE: MAY 15, 2021
SHEET: 57169 No. : 21-65

J. J. Matzger
Francis X. Matzger
State of New York

This map void unless EMBOSSED with New York State Licensed Land Surveyor's Seal No. 049989

Altering any item on this map is in violation of the law, excepting as provided in Section 7209, Part 2 of the New York State Education Law.

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LEGEND

- PROPERTY BOUNDARY
- +++++ RAILROAD TRACKS

NOTE: All values listed exceed Part 375 restricted residential SCOs

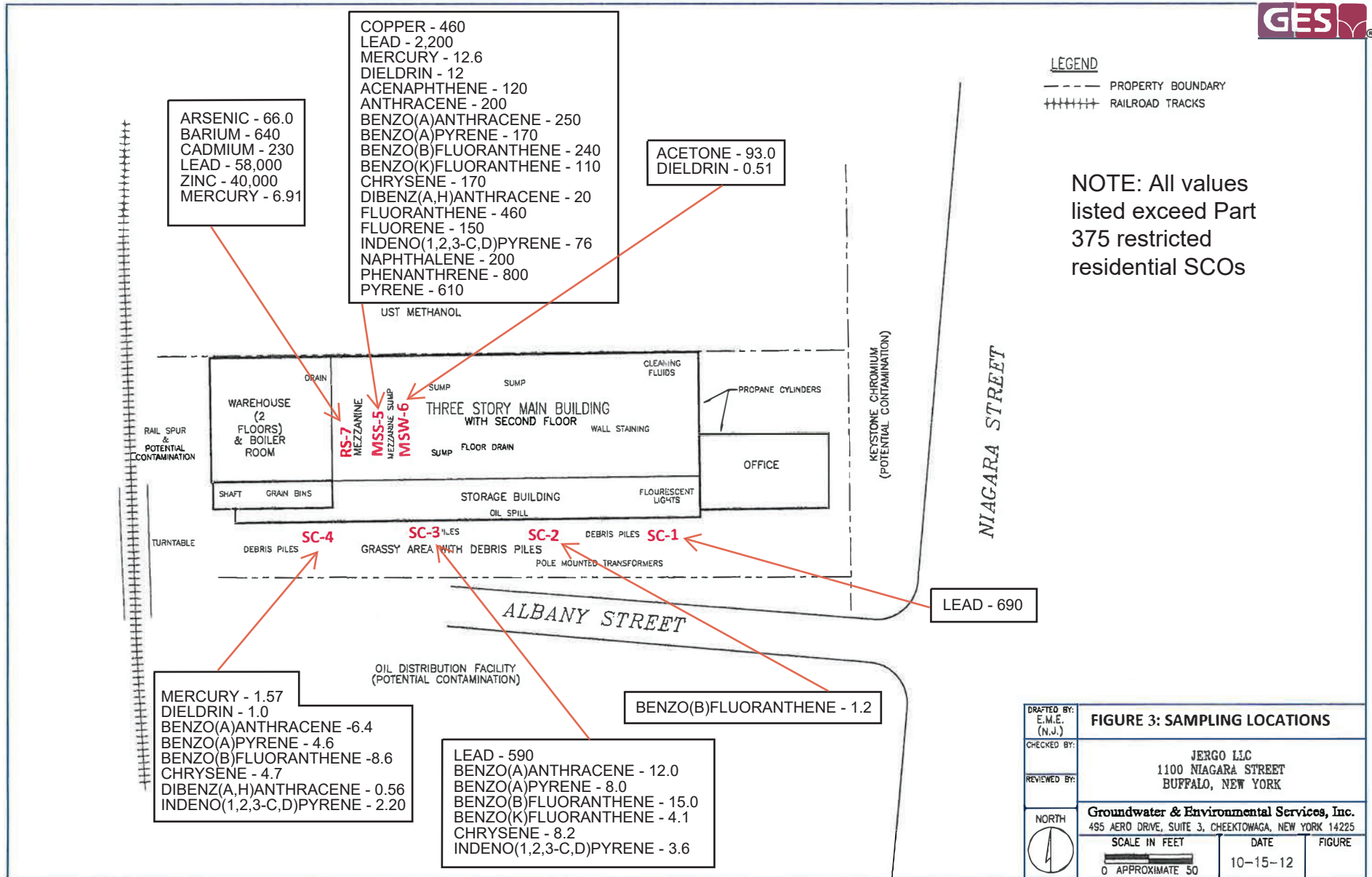


FIGURE 3: SAMPLING LOCATIONS		
DRAFTED BY: E.M.E. (N.J.)	JERGO LLC 1100 NIAGARA STREET BUFFALO, NEW YORK	
CHECKED BY:		
REVIEWED BY:		
NORTH 	Groundwater & Environmental Services, Inc. 495 AERO DRIVE, SUITE 3, CHEEKTOWAGA, NEW YORK 14225	
	SCALE IN FEET 0 APPROXIMATE 50	DATE 10-15-12

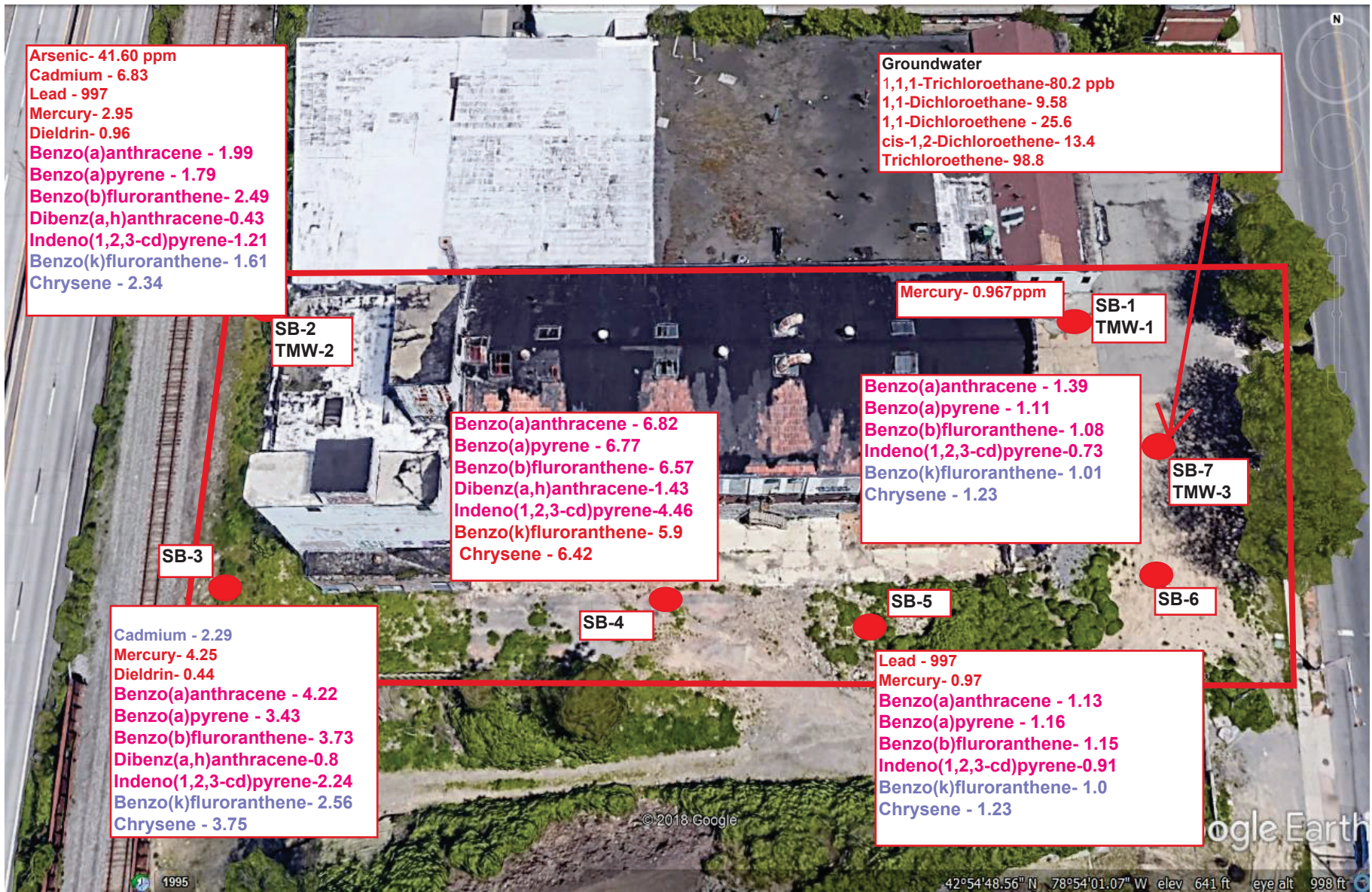


Figure 4: Location of Soil Borings (SB) and Temporary Monitoring Wells with Analytical Results
Notes: Red- Greater than restricted residential SCOs or TOGs; Blue - greater than unrestricted & Residential SCOs

Figure 12: 1106-1110 Niagara Street Phase II Boring Locations with Results

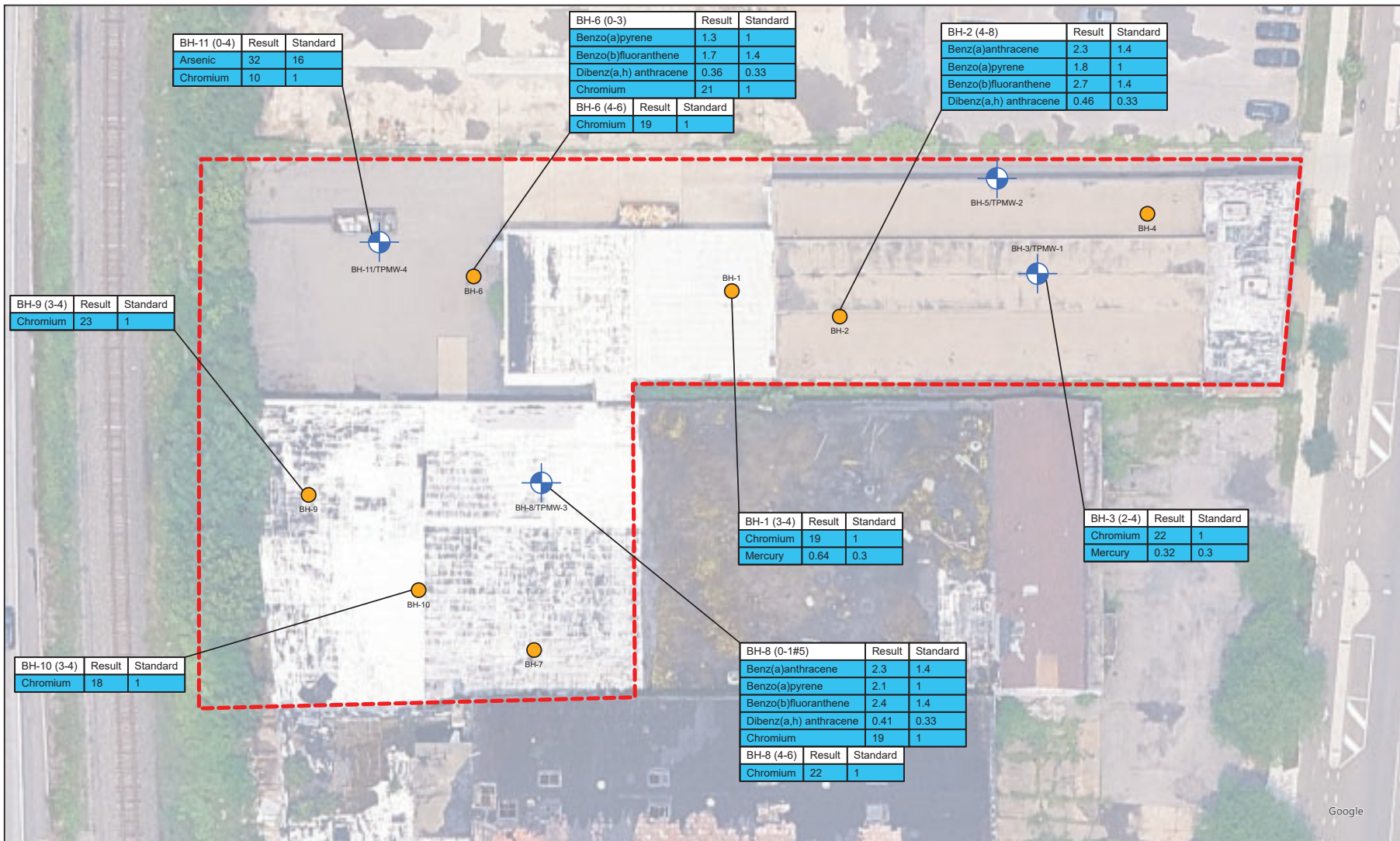


Figure 5: 1106-1110 Niagara Street Phase II Boring Locations with Results



1106-1110 Niagara Street
 Buffalo, New York

3/1/2023
 Douglas Development



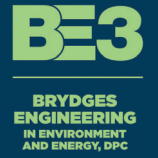


LEGEND

- Proposed Addition to BCP Site Boundary
-  Boring/Temporary Monitoring Well Location
-  Boring Location

NOTES

1. Basemap adopted from Google Maps.
2. Information adopted from February 2025 Phase II ESA performed by GHD.
3. All values are provided in parts per million (ppm).
4. Standard values represent restricted residential Soil Cleanup Objectives (SCOs).



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jbrydges@be3corp.com

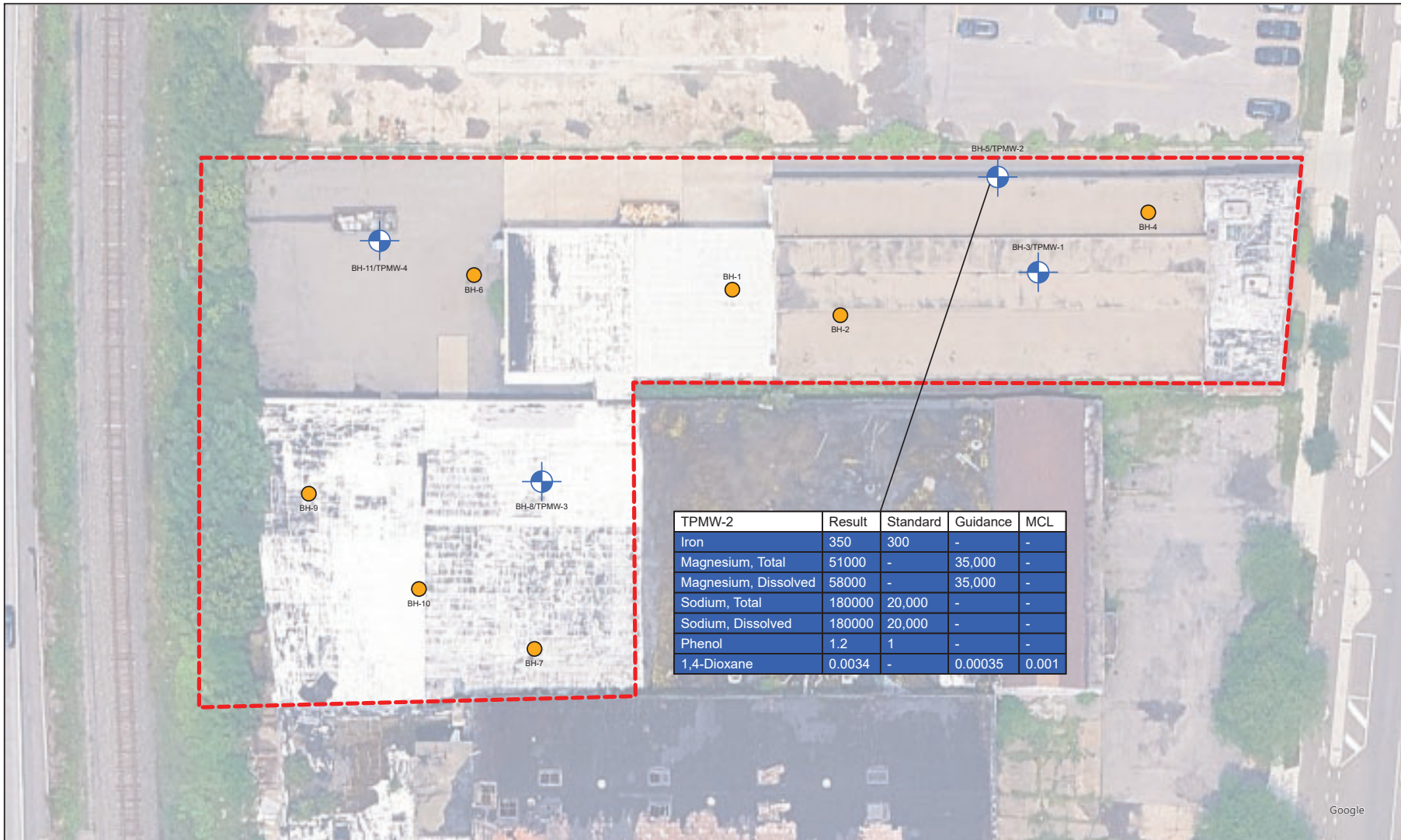
CLIENT: JENESIS DEVELOPMENT LLC

Figure 6
Phase II ESA
Sampling Locations and Exceedances
Curtiss Malt House Project
1100 Niagara Street
Buffalo, NY 14213



DATE ISSUED:
February 29, 2026

SCALE: 1:550



LEGEND

- Proposed Addition to BCP Site Boundary
- Boring/Temporary Monitoring Well Location
- Boring Location

NOTES

1. Basemap adopted from Google Maps.
2. Information adopted from February 2025 Phase II ESA performed by GHD.
3. All values are provided in parts per million (ppm).
4. Standard represents the NYSDEC Class GA Standard Value.
5. Guidance represents the NYSDEC Class GA Guidance Value.
6. MCL represents the NYS Maximum Contaminant Level.

BRYDGES ENGINEERING
IN ENVIRONMENT AND ENERGY, DPC

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CLIENT: JENESIS DEVELOPMENT LLC

Figure 7
Phase II ESA - Groundwater
Sampling Locations and Exceedances

Curtiss Malt House Project
1100 Niagara Street
Buffalo, NY 14213



DATE ISSUED:
February 29, 2026

SCALE: 1:550

OA-001

LOCATION 3
IA-006, SS-007

LOCATION 1
IA-002, SS-003

LOCATION 6
IA-012, SS-013

MAIN WAREHOUSE

LOCATION 2
IA-004, SS-005

EAST OFFICE AREA

LOCATION 4
IA-008, SS-009

SHIPPING



GARAGE

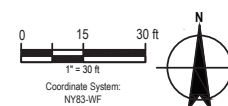
LOCATION 3
IA-010, SS-011

Sub-Slab Results Warranting Mitigation:
1,1-dichloroethene: 110,000 ug/m³
Cis-1,2-dichloroethene: 4,200 ug/m³
Trichloroethene: 10,000 ug/m³
1,1,1-Trichloroethane: 320,000 ug/m³
Vinyl Chloride: 12,000 ug/m³

NOTE: Only results warranting mitigation are listed

LEGEND

-  SUB-SLAB SOIL VAPOR AND INDOOR AIR SAMPLE LOCATIONS
-  OUTDOOR AIR SAMPLE LOCATION



OLIVER GEAR
1120 NIAGARA STREET, BUFFALO, NY 14213


2024 SUB-SLAB SOIL VAPOR, INDOOR
AIR, AND OUTDOOR AIR SAMPLE
LOCATIONS

Project No. 12656942
Date January 2025

FIGURE 8

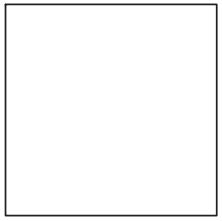


LEGEND

- - Site Boundary
-  Bedrock Well Location

NOTES

1. Basemap adopted from Google Maps.
2. Sampling was conducted 3/13/2026.
3. All values are provided in parts per billion (ppb).
4. Standard represents the NYSDEC Class GA Standard Value.



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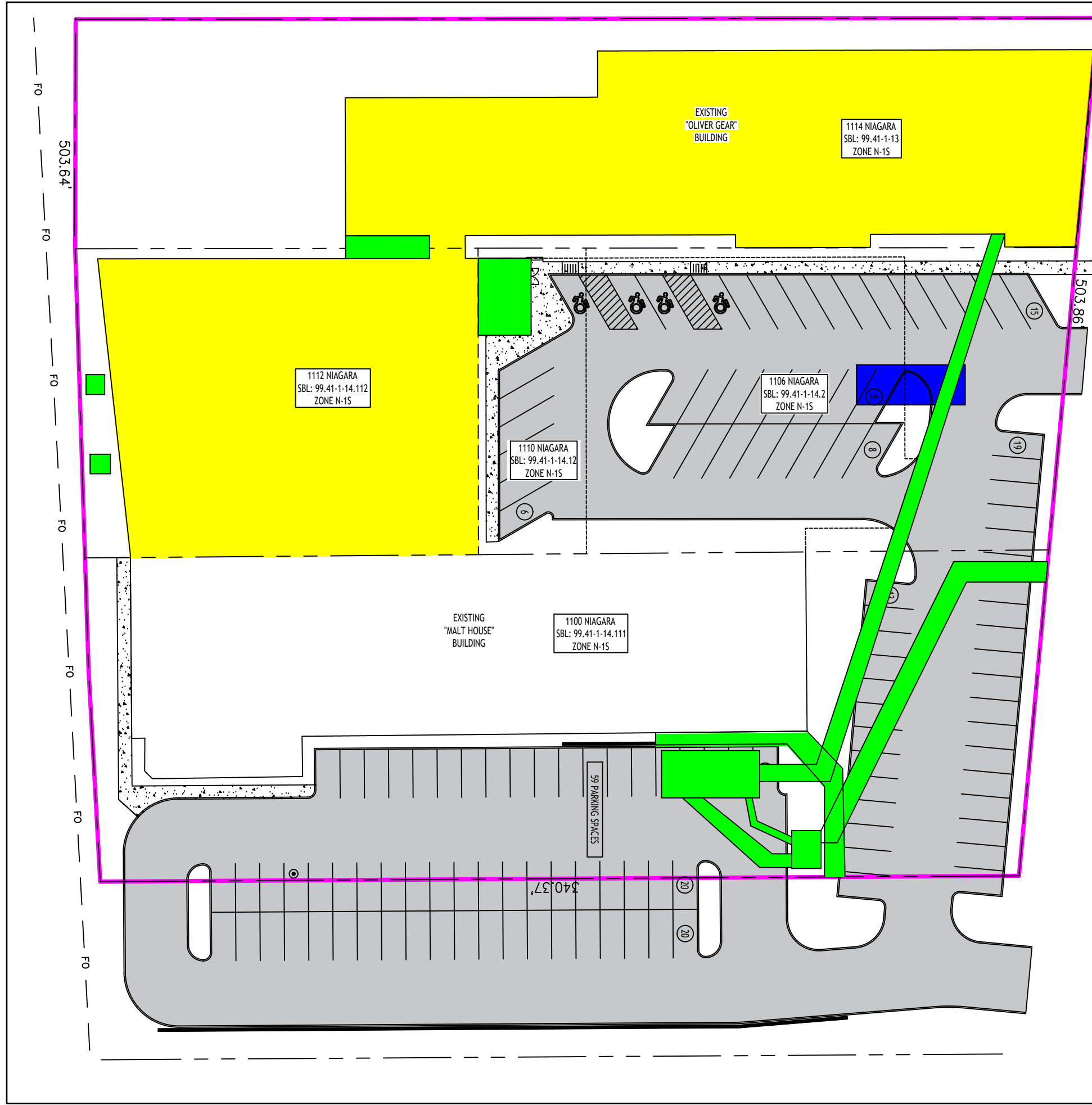
Figure 9
 Supplemental Groundwater
 Sampling Locations and Exceedances

Curtiss Malt House Project
 1110 Niagara Street
 Buffalo, NY 14213



DATE ISSUED:
 March 25, 2026

SCALE: 1:550



LEGEND

- BCP SITE BOUNDARY
- SSDS IRM
- SOIL REMOVAL/REPLACEMENT IRM
- UST IRM

NOTES

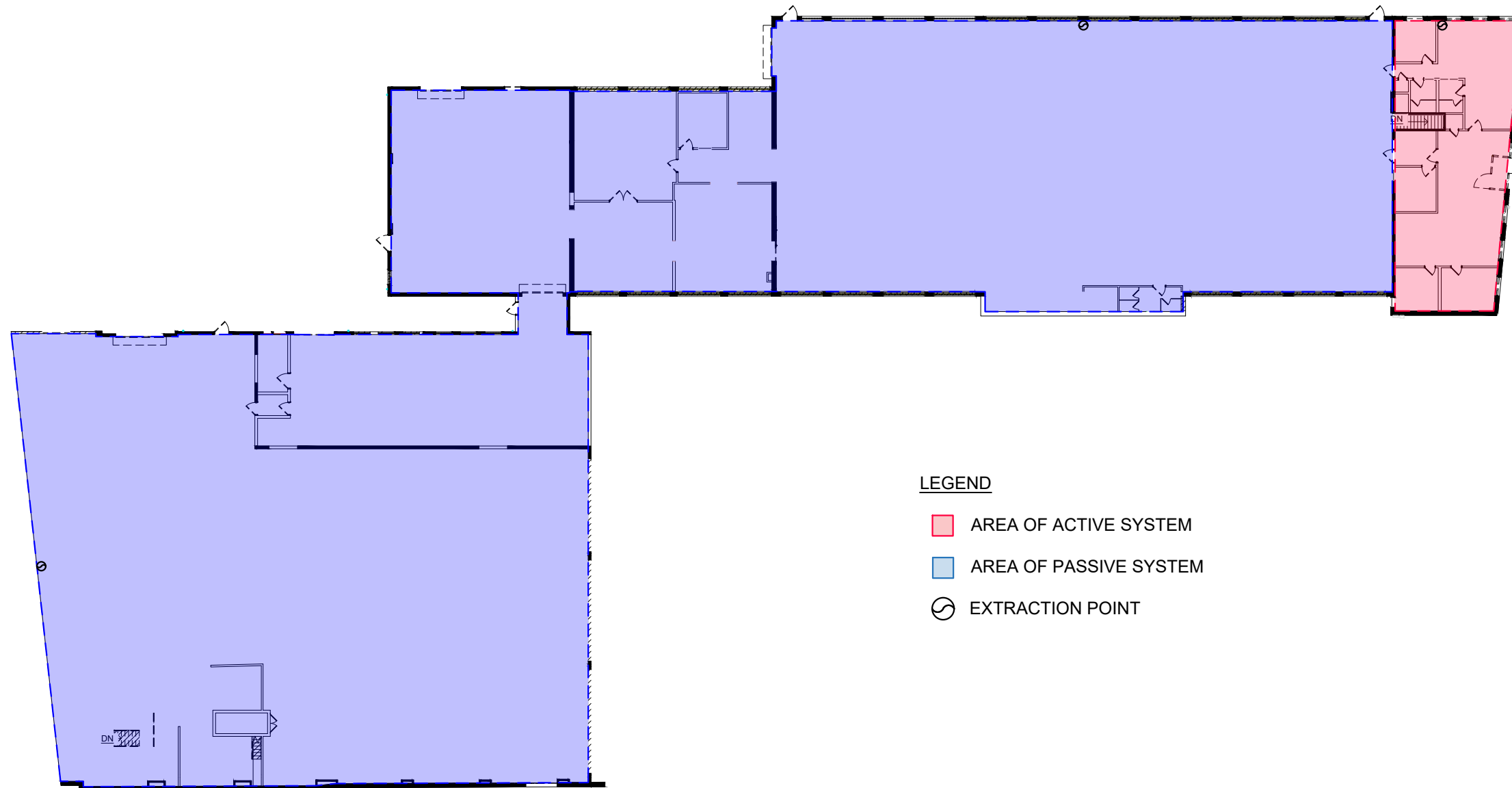
1. See Figure 11 and Section 4.1 for further information regarding the SSDS IRM.
2. See Figure 12 and Section 4.2 for further information regarding the Soil Removal/Replacement IRM.
3. See Figure 13 and Section 4.3 for further information regarding the UST IRM.

GENERAL NOTES

1. ALL RISER PIPING WILL BE 4" SCH. 40 PVC PIPING UNLESS OTHERWISE SPECIFIED.
2. RISERS WILL EXTEND VERTICALLY FROM SUB-SLAB THROUGH ALL SUBSEQUENT FLOORS AND ONTO THE ROOF.
3. OFFSET OF PIPING THROUGH STRUCTURES LIKELY REQUIRED.
4. INSTALL ADEQUATE FIRE COLLARS AROUND RISERS BETWEEN EACH FLOOR.
5. ALL COMPONENTS WILL BE LABELED.
6. THE EXACT LOCATION OF DESIGN COMPONENTS MAY VARY BASED ON FIELD CONDITIONS.
7. THE INSTALLATION OF THE SSDS WILL CONFORM TO THE RADON MITIGATION STANDARDS ANSI/AARST CC-1000-2018-0523 WITH REV. 5/23 SOIL GAS CONTROL SYSTEMS IN NEW CONSTRUCTION OF MULTIFAMILY, SCHOOL, COMMERCIAL AND MIXED-USE BUILDINGS AND THE NYSDOH GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN THE STATE OF NEW YORK DATED OCTOBER 2006.

ACTIVE SYSTEM NOTES

1. RISER WILL BE CONNECTED TO A ROOF MOUNTED FAN.
2. DETAILED OPERATION AND MAINTENANCE PLAN WILL BE PROVIDED TO MAINTENANCE STAFF.
3. AN OFFSET UNDER THE ROOF MAY BE REQUIRED BEFORE FAN PLACEMENT.
4. FESTA LEGEND EXTREME FAN OR SIMILAR WILL BE UTILIZED.
5. INSTALL ELECTRICAL CIRCUIT FOR FAN WITH EASILY ACCESSIBLE SHUT OFF SWITCH.



LEGEND

- AREA OF ACTIVE SYSTEM
- AREA OF PASSIVE SYSTEM
- EXTRACTION POINT

OLIVER GEAR BUILDING

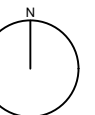
1/32" = 1'-0"

**OLIVER GEAR
SSDS PLAN**

Curtiss Malt House Project
1100 Niagara Street
Buffalo, NY 14213

PREPARED FOR:

**Jenesis
Development
LLC**

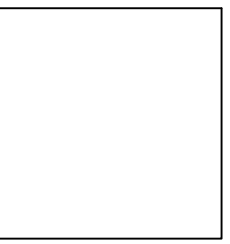


DATE ISSUED:
April 3, 2026

△

FIGURE

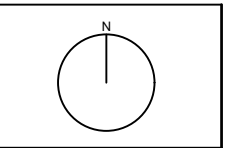
11



**OLIVER GEAR
SSDS DETAIL**

Curtiss Malt House Project
1100 Niagara Street
Buffalo, NY 14213

PREPARED FOR:
**Jenesis
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LLC**



DATE ISSUED:
April 3, 2026



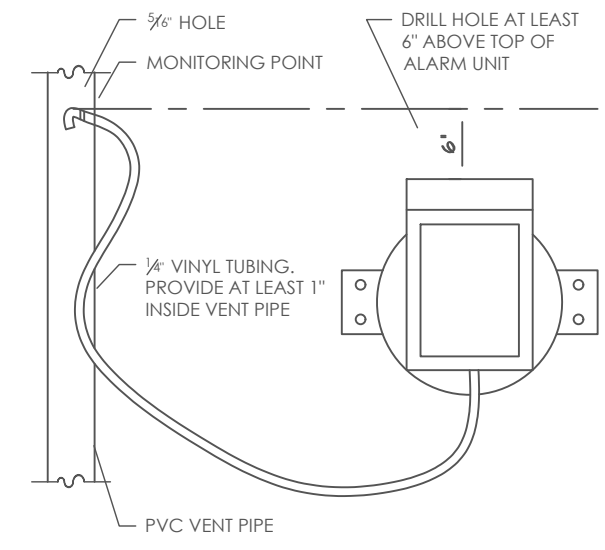
**FIGURE
12**

FALSE FLOOR NOTES

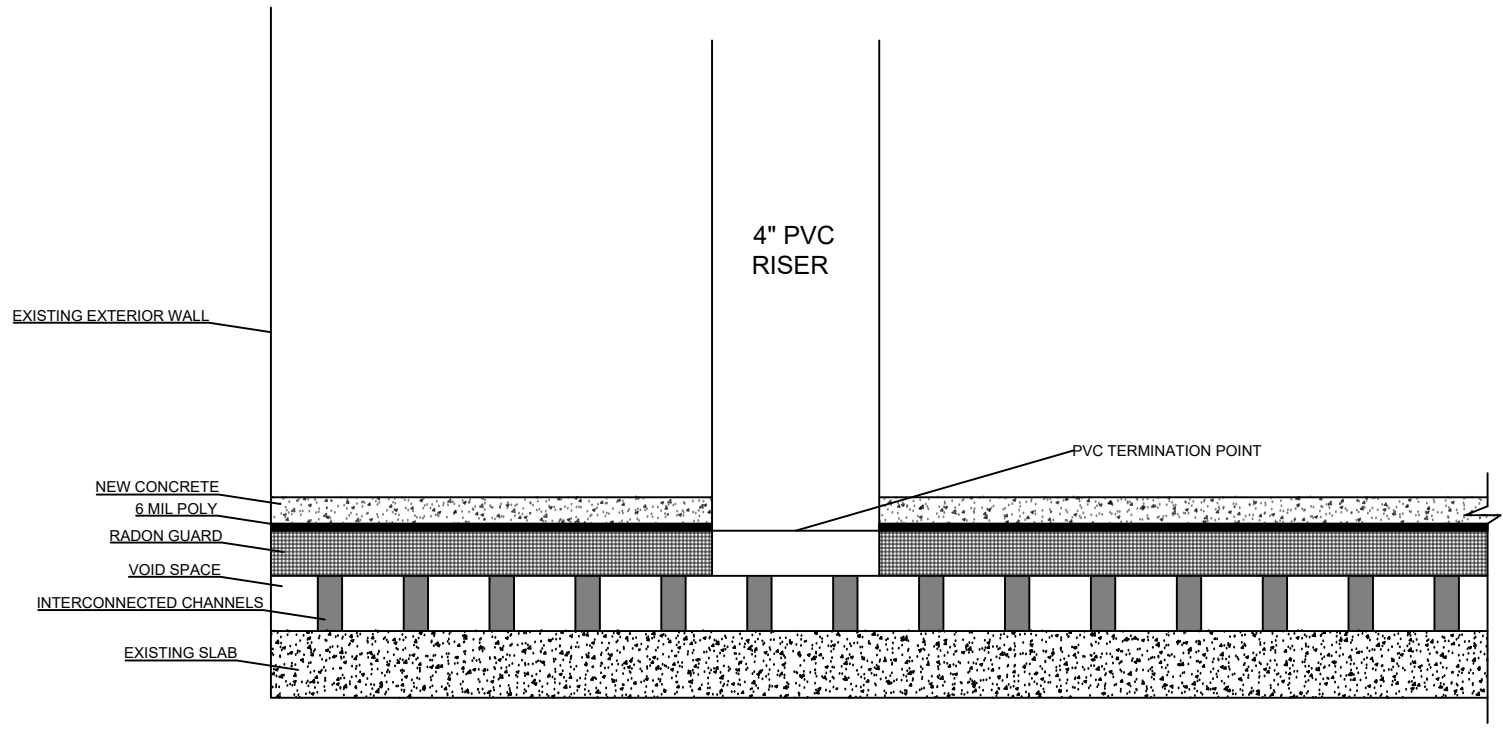
1. PVC TERMINATION POINT IS AT THE INTERFACE OF 6 MIL POLY AND RADON GUARD LAYERS.
2. ALL SUCTION POINTS WILL BE CAULKED TO PROVIDE A COMPETENT SEAL.
3. NEW CONCRETE TOPPING SLAB WILL HAVE A 4" MINIMUM THICKNESS.
4. RADON GUARD® 250 (390 PSF LOAD CAPACITY) IS RECOMMENDED BASED ON BUILDING CONSTRUCTION AND PROJECT AREA COLD CLIMATE.

ALARM NOTES

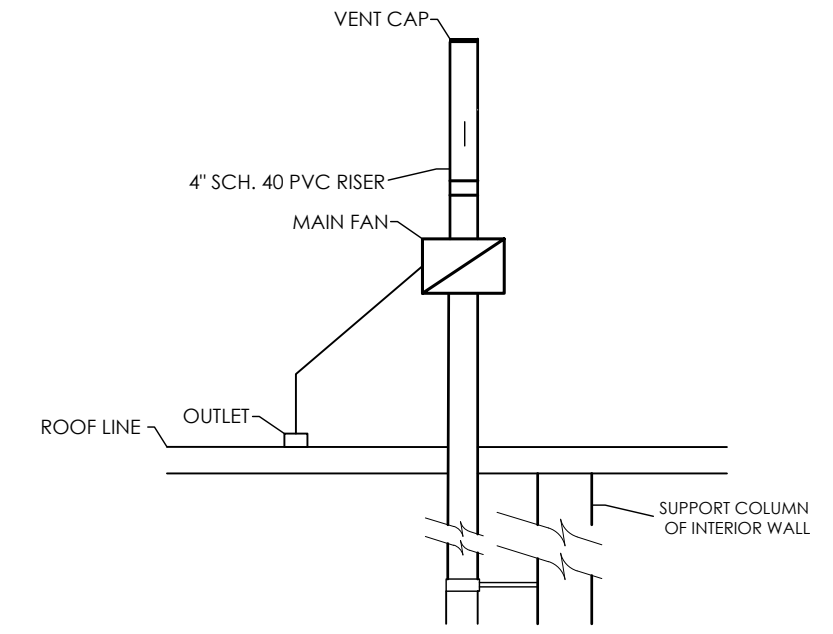
1. PRESSURE SET POINT: -0.25 INCH WC.
2. PROVIDE ALARM COMPANY LABEL AND CONTACT INFORMATION.
3. LOCATE DEVICE WHERE IT CAN BE SEEN AND HEARD.
4. CONNECT DEVICE TO INDEPENDENT CIRCUIT SO IT WILL ACTIVATE IF POWER TO FAN IS INTERRUPTED.
5. ALARM WILL SOUND WHEN PRESSURE WITHIN THE VENT PIPE DROPS BELOW THE SET POINT.



ALARM DETAIL
NOT TO SCALE



FALSE FLOOR DETAIL
NOT TO SCALE

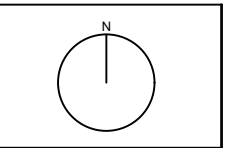


ROOF DETAIL
NOT TO SCALE

**SOIL REMOVAL AND REPLACEMENT
PLAN**

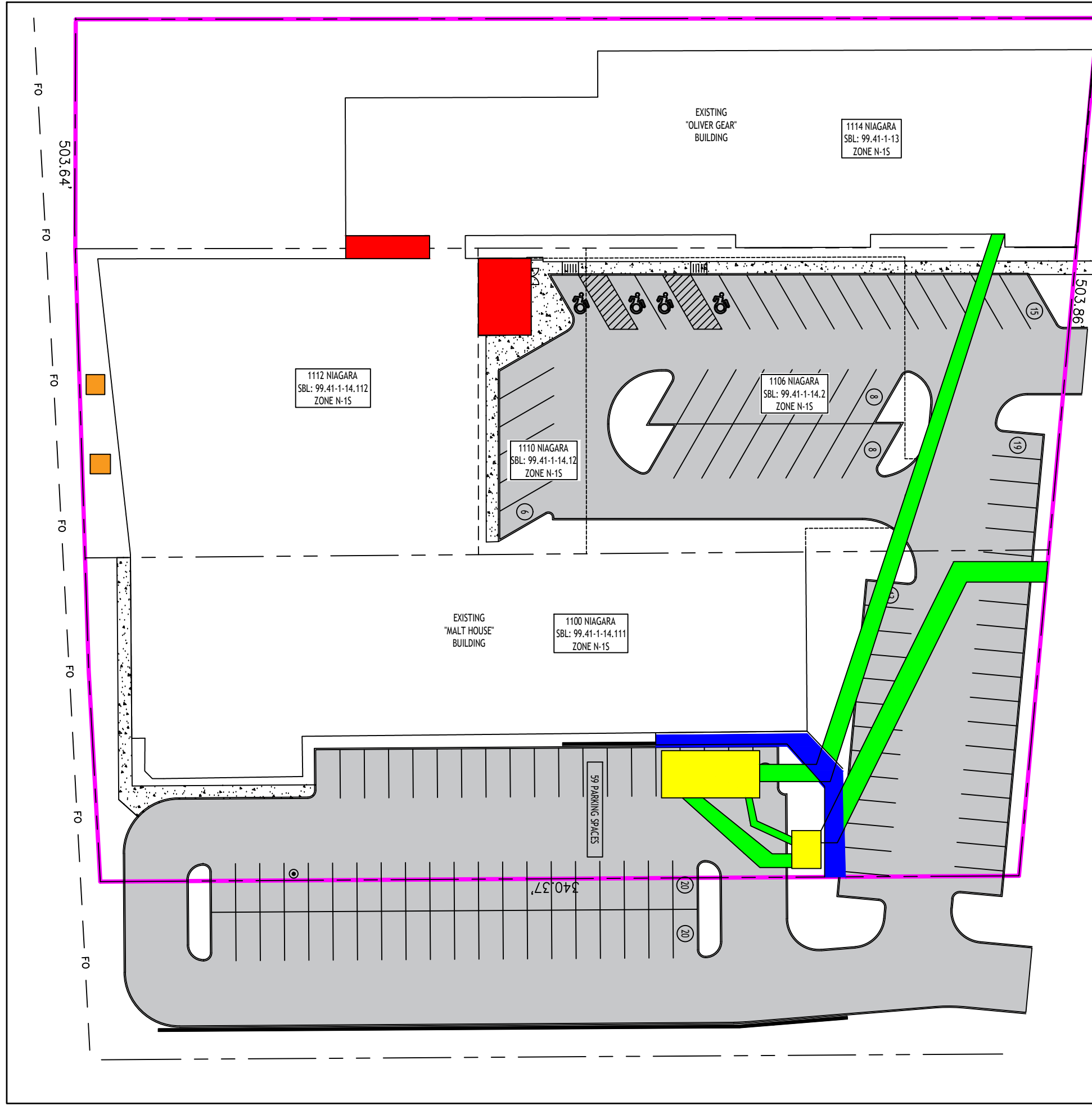
Curtiss Malt House Project
1100 Niagara Street
Buffalo, NY 14213

PREPARED FOR:
**Jenesis
Development
LLC**



DATE ISSUED:
April 1, 2026

**FIG.
13**



- LEGEND**
- BCP SITE BOUNDARY
 - AREA A
 - AREA B
 - AREA C
 - AREA D
 - AREA E

- NOTES**
1. Each work area is further defined in the text, specifically Section 4.2: Soil Removal and Replacement.



LEGEND

- BCP Boundary
- Approximate Tank Location
- ▣ Previously Collected Confirmation Samples
- ▣ Proposed Additional Confirmation Samples

NOTES

1. Basemap adopted from Google Maps.



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CLIENT: JENESIS DEVELOPMENT LLC

Figure 14
 UST Removal Plan

Curtiss Malt House Project
 1100 Niagara Street
 Buffalo, NY 14213



DATE ISSUED:
 April 1, 2026

△

SCALE: 1:175

Appendices

Appendix A

Health and Safety Plan

HEALTH AND SAFETY PLAN
for
SITE INVESTIGATIONS AND REMEDIAL OVERSIGHT

CURTISS MALT HOUSE PROJECT
1100 NIAGARA STREET
BUFFALO, NEW YORK 14213
NYSDEC SITE NO. C915382

Prepared for:

Jenesis Development LLC
One Robert Rich Way
Buffalo, New York 14213

Prepared by:



960 Busti Avenue
Suite B-150
Buffalo, NY 14213

APRIL 2025

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ATTACHMENTS

1 – Table of Potential Hazards and OSHA Standards

- 2 – Heat Stress Management Program and Procedures
- 3 – Trenching and Excavation Health and Safety Requirements
- 4 – Map to Hospital

1.0 INTRODUCTION

The following health and safety procedures apply to BCP project personnel, including subcontractors, performing activities described in the RI Work Plan for the Curtiss Malt House Project Site BCP Project. Please note, however, contractors performing remedial work are required to either develop their own plans meeting these requirements at a minimum or adopt this plan.

1.1 PURPOSE

Directed at protecting the health and safety of the field personnel during field activities, the following Health and Safety Plan (HASP) was prepared to provide safe procedures and practices for personnel engaged in conducting the field activities associated with this project. The plan has been developed using the Occupational Safety and Health Administration (OSHA) 1910 and 1926 regulations and NYSDEC Brownfields DER-10 as guidance. The purpose of this HASP is to establish personnel protection standards and mandatory safety practices and procedures for this task specific effort. This plan assigns responsibilities, establishes standard operating procedures, and provides for contingencies that may arise during the field efforts.

1.2 APPLICABILITY

The provisions of the plan are mandatory for all personnel engaged in field activities. All personnel who engage in these activities must be familiar with this plan and comply with its requirements. The plan is based on available information concerning the project area and planned tasks. If more data concerning the project area becomes available that constitute safety concerns, the plan will be modified accordingly. A member of each contractor on the BCP project will be designated as Field Safety Officer and will be responsible for field safety. Any modifications to the plan will be made by the Field Safety Officer after discussion with the Project Manager and Health and Safety Officer. All modifications will be documented and provided to the Project Manager and the Health and Safety Officer for approval. A copy of this plan will be available to all on-site personnel, including subcontractors prior to their initial entry onto the site.

Before field activities begin, all personnel will be required to read the plan. All personnel must agree to comply with the minimum requirements of the plan, be responsible for health and safety, and sign the Statement of Compliance before site work begins.

1.3 FIELD ACTIVITIES

The work addressed by this HASP includes remedial investigation (RI) activities such as assessment of subsurface conditions related to soil and groundwater and oversight activities related to remediation. Field work will be conducted that can include test trenches/soil borings, monitoring well installation, groundwater and soil sampling, building demolition, soil excavation, etc.

1.4 PERSONNEL REQUIREMENTS

Key personnel are as follows:

Health and Safety Officer - Peter J. Gorton, CHCM
Project Manager & Senior Engineer – Jason Brydges, P.E. & John Berry, PE
Geologist – John Boyd, PG
Technicians – Jesse Zientek, Dalton Stack
QA/QC – John Berry, P.E.

Responsibilities of some of the key personnel are as follows:

Project Manager

- Assuring that all personnel are aware of the provisions of the HASP and are proficient in work practices necessary to ensure safety and in emergencies;
- Verifying that the provisions of this plan are implemented;
- Assuring that appropriate personnel protective equipment (PPE), if necessary, is available and properly utilized by all personnel;
- Assuring that all personnel are aware of the potential hazards associated with Site operations;
- Supervising the monitoring of safety performance by all personnel and ensuring that required work practices are employed; and,
- Maintaining sign-off forms and safety briefing forms.

Health and Safety Officer:

- Monitoring work practices to determine if potential hazards are present, such as heat/cold stress, safety rules near heavy equipment, etc.;
- Determining changes to work efforts or equipment to ensure the safety of personnel;
- Evaluating on-site conditions and recommend to the Project Manager modifications to work plans needed to maintain personnel safety;
- Determining that appropriate safety equipment is readily available and monitor its proper use;
- Stopping work if unsafe conditions occur or if work is not being performed in compliance with this plan;
- Monitoring personnel performance to ensure that the required safety procedures are followed.
- Documenting incident and reporting to Project Manager within 48 hours of occurrence if established safety rules and practices are violated; and,
- Conducting safety meetings as necessary.

Field Personnel, including geologists and technicians:

- Understanding the procedures outlined in this plan;
- Taking precautions to prevent injury to themselves and co-workers;
- Performing only those tasks believed to be safe;
- Reporting accidents or unsafe conditions to the Health and Safety Officer and Project Manager;
- Notifying the Health and Safety Officer and Project Manager of special medical problems (e.g., allergies, medical restrictions, etc.);

- Thinking about safety first while conducting field work; and,
- Not eating, drinking or smoking in work areas.

All Site personnel has the authority to stop work if conditions are deemed to be unsafe. Visitors will be required to report to the overall Site PM or designee and follow the requirements of this plan and the Contractor's HASP (if different).

2.0 SITE DESCRIPTION AND SAFETY CONCERNS

2.1 SITE BACKGROUND AND DESCRIPTION

The Site is a 1.559-acre L-shaped industrial Site located in an urban setting. The Site is zoned industrial and is located in an area consisting primarily of commercial and industrial businesses located along the east and west sides of Niagara Street. The Site is located at the northwest corner of the intersection of Niagara Street and Albany Street. To the east is Niagara Street; to the west is a railroad easement and Interstate 190; to the north the building abuts Oliver Gear; and to the south is a newly constructed restaurant.

The northern 2/3 of the Site currently contains several empty abutting buildings with sections ranging from one to three stories in height. The very southern and eastern portion of the site is composed of unimproved grassy/weed covered area that contains some soil as well as some construction and demolition debris along with some blacktop surface areas.

2.2 HAZARD EVALUATION

Specific health and safety concerns to the project tasks include working around low levels of heavy metals, PCBs, SVOCs and VOCs in the soil and groundwater. Physical hazards include those associated with working near open excavations and adjacent to manual/mechanical field equipment. Contractors will have separate detailed health and safety procedures/requirements for excavations and the transportation and disposal of impacted material that will meet or exceed requirements in this plan. A table of potential hazards and OSHA Standards for consideration during investigation and remedial activities is provided in **Attachment 1**.

2.2.1 Chemical Hazards

Chemical hazards detected at the site include metals and organic compounds that were detected in soil samples at elevated concentrations that exceed Part 375 soil cleanup objectives. These compounds could be encountered during the RI and remedial activities and potential routes of exposure include:

- Skin contact;
- Inhalation of vapors or particles;
- Ingestion; and,
- Entry of contaminants through cuts, abrasions or punctures.

The anticipated levels of personnel protection will include Level D PPE that includes the

following:

1. Long sleeve shirt and long pants
2. Work boots with steel toe
3. Hard hats when heavy equipment or overhead hazards are present
4. Safety glasses
5. Work gloves and chemical resistant gloves when sampling potentially contaminated materials
6. High visibility vests or outer gear when Site traffic is significant

Modifications may include booties, overalls, hearing protection, or respiratory protection if air monitoring levels indicate sustained PID readings greater than 5 ppm above established background. When these levels are reached, work will be halted pending discussions with field and office management. If any readings are recorded above background, work will proceed with caution and breathing zone monitoring will be conducted.

2.2.2 Other Physical Hazards

Depending on the time of year, weather conditions or work activity, some of the following physical hazards could result from project activities:

- Noise
- Heat Stress
- Cold Stress
- Slips, trips, and falls
- Exposure to moving machinery during drilling and excavation activities
- Physical eye hazards
- Lacerations and skin punctures
- Back strain from lifting equipment
- Electrical storms and high winds
- Contact with overhead or underground utilities

Slips, Trips, and Falls. Field personnel shall become familiar with the general terrain and potential physical hazards that is associated with the risk of slips, trips, and falls. Special care shall be taken when working near demolition and excavation operations and material stockpiles. Workers will observe all pedestrian and vehicle rules and regulations. Extra caution will be observed while working near roadways and while driving in reverse to ensure safety.

Noise. All personnel shall wear hearing protection devices, such as ear muffs or ear plugs, if work conditions warrant. These conditions would include difficulty hearing while speaking to one another at a normal tone within three feet. If normal speech is interfered with due to work noise, the Health and Safety Officer or designee will mandate the use of hearing protection or other noise-producing equipment or events.

Heat/Cold Stress. Heat stress work modification may be necessary during ambient temperatures of greater than 29° C (85° F) while wearing normal clothing or exceeding 21° C (70° F) while wearing PPE. Because heat stress is one of the most common and potentially serious illnesses at work sites, regular monitoring and preventive measures will be utilized such as additional rest periods,

supplemental fluids, restricted consumption of drinks containing caffeine, use of cooling vests, or modification of work practices. Most of the work to be conducted during the oversight and monitoring operations is expected to consist of light manual labor and visual observation. Given the nature of the work and probable temperatures, heat stress hazards are not anticipated. See **Attachment 2** for heat stress management procedures.

If work is to be conducted during winter conditions, cold stress may be a concern to the health and safety of personnel. Wet clothes combined with cold temperatures can lead to hypothermia. If air temperature is less than 40° F (4° C) and a worker perspires, the worker should change to dry clothes. The following summary of the signs and symptoms of cold stress are provided as a guide for field personnel.

1. Incipient frostbite is a mild form of cold stress characterized by sudden blanching or whitening of the skin.
2. Chilblain is an inflammation of the hands and feet caused by exposure to cold moisture. It is characterized by a recurrent localized itching, swelling, and painful inflammation of the fingers, toes, or ears. Such a sequence produces severe spasms, accompanied by pain.
3. Second-degree frostbite is manifested by skin with a white, waxy appearance and the skin is firm to the touch. Individuals with this condition are generally not aware of its seriousness because the underlying nerves are frozen and unable to transmit signals to warn the body. Immediate first aid and medical treatment are required.
4. Third-degree frostbite will appear as blue blotchy skin. The tissue is cold, pale, and solid. Immediate medical attention is required.
5. Hypothermia develops when body temperature falls below a critical level. In extreme cases, cardiac failure and death may occur. Immediate medical attention is warranted when the following symptoms are observed:
 - Involuntary shivering
 - Irrational behavior
 - Slurred speech
 - Sluggishness

Fire and Explosion. These hazards will be minimal for activities associated with this project. All heavy equipment will be equipped with a fire extinguisher.

Trenching and Excavations. There are a variety of potential health and safety hazards associated with excavations. These include:

- Surface encumbrances, such as structures, fencing, stored materials, etc.;
- Below- and above-ground utilities, such as water and sewer lines, gas lines, telephone lines, and optical cable lines, etc.;
- Overhead power lines and other utilities;
- Vehicle and heavy equipment traffic around the excavations;
- Falling loads from lifting or digging equipment;
- Water accumulation within excavations;
- Hazardous atmospheres, such as oxygen deficiency, flammable gases, and toxic gases;
- Falling into or driving equipment into unprotected or unmarked excavations; and,
- Cave-in of loose rocks and soil at the excavation face.

OSHA requirements for trenching and excavations are contained in 29 CFR, subpart P, 1926.650 thru 1926.652. See **Attachment 3** for details on excavation and trenching safety requirements, which include the following basic minimum excavation requirements:

- Personnel entry into excavations should be minimized whenever possible and no entry will occur in pits greater than 4 feet bgs. Sloping, shoring or equivalent means should be utilized.
- Surface encumbrances such as structures, fencing, piping, stored material etc. that may interfere with safe excavations should be avoided, removed or adequately supported prior to the start of excavations. Support systems should be inspected daily.
- Underground utility locations should be checked and determined, and permits should be obtained prior to initiating excavations. Local utility companies will be contacted at least two days in advance, advised of proposed work, and requested to locate underground installations. When excavations approach the estimated location of utilities, the exact location should be determined by careful probing or hand digging and when it is uncovered, proper supports should be provided.
- A minimum safe distance of 15 feet should be maintained when working around overhead high-voltage lines or the line should be de-energized following appropriate lock-out and tag- out procedures by qualified utility personnel.
- Excavations five feet or more, if entered, will require an adequate means of exit, such as a ladder, ramp, or steps and located to require no more than 25 feet of lateral travel. Under no circumstances should personnel be exited/entered an excavation using heavy equipment.
- Personnel working around heavy equipment, or who may be exposed to public vehicular traffic should wear high visibility clothes, especially at night.
- Heavy equipment or other vehicles operating next to or approaching the edge of an excavation will require that the operator have a clear view of the edge of the excavation, or that warning systems such as barricades, hand or mechanical signals, or stop logs be used. If possible, the surface grade should slope away from the excavation.
- Personnel should be safely located in and around the trench/excavation face and should not work underneath loads handled by lifting or digging equipment.
- Hazardous atmospheres, such as oxygen deficiency (atmospheres containing less than 19.5% oxygen), flammable gases (airborne concentrations greater than 20% of the lower explosive limit), and toxic gases (airborne concentrations above the OSHA Permissible Exposure Limit or other exposure limits) may occur in excavations. Monitoring should be conducted for hazardous atmospheres prior to entry and at regular intervals. Ventilation or respiratory protection may be provided to prevent personnel exposures to oxygen deficient or toxic atmospheres. Periodic retesting (at least each shift) of the excavation will be conducted to verify that the atmosphere is acceptable. A log or field book records should be maintained.
- Personnel should not work in excavations that have accumulated water or where water is accumulating unless adequate precautions have been taken. These precautions can include shield systems, water removal systems, or safety harnesses and lifelines. Groundwater entering the excavation should be properly directed away and down gradient from the excavation.
- Safety harnesses and lifelines should be worn by personnel entering excavations that

qualify as confined spaces.

- Excavations near structures should include support systems such as shoring, bracing, or underpinning to maintain the stability of adjoining buildings, walls, sidewalks, or other structures endangered by the excavation operations.
- Loose rock, soil, and spoils should be piled at least two and preferably 5 feet or more from the edge of the excavation. Barriers or other effective retaining devices may be used to prevent spoils or other materials from falling into the excavation.
- Walkways or bridges with standard guardrails that meet OSHA specifications will be provided where employees, the public, or equipment are required to cross over excavations.
- Adequate barrier physical protection should be provided, and excavations should be barricaded or covered when not in use or left unattended. Excavations should be backfilled as soon as possible when completed.
- Safety personnel should conduct inspections prior to the start of work and as needed throughout the work shift and after occurrence that increases the hazard of collapse (i.e., heavy rain, vibration from heavy equipment, freezing and thawing, etc.).
- Personnel working in excavations should be protected from cave-ins by sloping or benching of excavation walls, a shoring system or some other equivalent means in accordance with OSHA regulations. Soil type is important in the determination of the angle of repose for sloping and benching, and the design of shoring systems.

2.2.3 Biological Hazards

Biological hazards can result from encounters with mammals, insects, snakes, spiders, ticks, plants, parasites, and pathogens. Mammals can bite or scratch when cornered or surprised. The bite or scratch can result in local infection with systemic pathogens or parasites. Insect and spider bites can result in severe allergic reactions in sensitive individuals. Exposure to poison ivy, poison oak or poison sumac results in skin rash. Ticks are a vector for several serious diseases. Dead animals, organic wastes, and contaminated soil and water can harbor parasites and pathogens. These hazards are reduced if work is conducted during late fall and winter months. The following are highlighted because they represent more likely concerns for the site-specific tasks and location:

Bees, Ants, Wasps and Hornets. Sensitization by the victim to the venom from repeated stings can result in anaphylactic reactions. If a stinger remains in the skin, it should be removed by teasing or scraping, rather than pulling. An ice cube placed over the sting will reduce pain. An analgesic corticosteroid lotion is often useful. People with known hypersensitivity to such stings should consult with their doctor about carrying a kit containing an antihistamine and aqueous epinephrine in a pre-filled syringe when in endemic areas. Nests and hives for bees, wasps, hornets and yellow jackets often occur in the ground, trees and brush. Before any nests or hives are disturbed, an alternate sampling location should be selected. If the sample location cannot be relocated, site personnel who may have allergic reactions shall not work in these areas.

Ticks. The incidence of Lyme disease is correlated to outdoor workers in areas where the disease is widespread and heightened risk of encountering ticks infected with *B. burgdorferi*,

which varies from state to state, within states, and even within counties. Preventing tick bites is of utmost importance in preventing Lyme disease and other tickborne illnesses. Tick bite prevention strategies include avoidance or clearing of tick-infested habitats and use of personal protective measures (e.g., repellents and protective clothing). Tick checks should be done regularly, and ticks should be removed promptly. If a worker in a high-risk area develops flu-like symptoms (fever, chills, muscle aches, joint pains, neck stiffness, headache) or a bulls-eye rash, they should seek medical attention even if there is no recall of a tick bite. Workers who have experienced a tick bite should remove the tick and seek medical attention if signs and symptoms of tick-borne diseases occur.

Storm Conditions. When lightening is within 10 miles of the work site, all personnel should evacuate to a safe area.

Sun. When working in the sun, personnel should apply appropriate sun screening lotions (30 sun screen or above), and/or wear long sleeve clothing and hats.

2.2.4 Activity Hazard Analysis

Table 1 presents a completed activity hazard analysis for the performance of an RI.

Table 1. Activity Hazard Analysis

PRINCIPAL STEPS	POTENTIAL SAFETY/HEALTH HAZARDS	RECOMMENDED CONTROLS
RI soil/groundwater/vapor investigation	Potential exposure to low levels of petroleum products	<ol style="list-style-type: none"> 1. Use of administrative controls (site control and general safety rules), work cloths, dust suppression 2. Use of real-time monitoring and action levels 3. Use Physical Hazards SOPs
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Excavation and other heavy equipment, Backhoe or Geoprobe	<ol style="list-style-type: none"> 1. Daily inspection of equipment 2. Continuous safety oversight 	<ol style="list-style-type: none"> 1. Safety plan review 2. Routine safety briefings

3.0 MONITORING

The purpose of air monitoring for potential airborne contaminants is to verify that protection levels are suitable. Monitoring will be performed for dust/particulates and volatile organic compounds during excavation activities. Daily background and calibration readings will be recorded prior to the start of field activities. All monitoring equipment used during this investigation will be maintained and calibrated and records of calibration and maintenance will be kept in accordance with 29 CFR 1910.120(b)4(11)E.

3.1 PARTICULATE MONITORING

Real-time air monitoring readings are obtained from upwind and downwind locations in accordance with DER-10 for community air-monitoring plan (refer to **Appendix E** CAMP). Daily field reports will be completed that document activities performed, equipment and manpower onsite, screening and monitoring results, general Site conditions, and weather conditions.

3.2 AIR MONITORING FOR WORKER PROTECTION

Real time air monitoring will be conducted whenever site soils are disturbed during sampling, excavation, grading, etc. A real time personal aerosol monitor (i.e., TSI SidePak AM5 10 Personal Aerosol monitor or equivalent) will be used. This monitor is a laser photometer that measures data as both real-time aerosol mass-concentration and 8-hour time weighted average (TWA). The monitor will be used to measure real-time concentrations in milligrams per meter cubed (mg/m^3). Action levels are based on potential exposure to calcium carbonate and will be as follows:

- $15 \text{ mg}/\text{m}^3$ total dust
- $5 \text{ mg}/\text{m}^3$ respirable fraction for nuisance dusts

Dust suppression techniques should be employed prior to exceeding the action levels. However, if these levels are exceeded, then work will be halted, and additional dust suppression techniques employed until safe levels are reached.

3.3 TOTAL VOLATILE ORGANICS MONITORING

Monitoring of VOCs will be conducted using a photo-ionization detector (PID). If a sustained reading of 5 ppm above background occurs, then work will be halted, and personnel will evacuate the work area. Levels will be allowed to stabilize, and another reading will be taken in the breathing zone. If background levels continue to be exceeded, then work will not continue at that location and the project manager will be notified of the situation. Action levels will remain the same.

4.0 SAFE WORKING PRACTICES

The following general safe work practices always apply to a construction site:

- Eating, drinking, chewing gum or tobacco and smoking are prohibited within the work area.
- Contact with potentially contaminated substances should be avoided.
- Puddles, pools, mud, etc. should be avoided if possible.

- Kneeling, leaning, or sitting on equipment or on the ground should be avoided if possible.
- Upon leaving the work area, hands, face and other exposed skin surfaces should be thoroughly washed.
- Unusual site conditions shall be promptly conveyed to the project manager, health and safety officer, or site superintendent for resolution.
- A first-aid kit shall be available at the site.
- Field personnel should use all their senses to alert themselves to potentially dangerous situations (i.e., presence of strong, irritating, or nauseating odors).
- If severe dusty conditions are present, then soils will be dampened to mitigate dust.
- All equipment will be cleaned before leaving the work area.
- Field personnel must attend safety briefings and should be familiar with the physical characteristics of the investigation, including:
 1. Accessibility to personnel, equipment, and vehicles.
 2. Areas of known or suspected contamination.
 3. Site access.
 4. Routes and procedures to be used during emergencies.
- Personnel will perform all investigation activities with a “buddy” who is able to:
 - Provide his or her partner with assistance.
 - Notify management or emergency personnel if needed.
- Excavation activities shall be terminated immediately in event of thunder or electrical storm.
- The use of alcohol or drugs at the site is strictly prohibited.

5.0 PERSONAL SAFETY EQUIPMENT AND SITE CONTROL

5.1 PERSONAL SAFETY EQUIPMENT

As required by OSHA in 29 CFR 1920.132, this plan constitutes a workplace hazard assessment to select personal protective equipment (PPE) to perform the site investigation. The PPE to be donned by on-site personnel during this investigation are those associated with the industry standard of level D. Protective clothing and equipment to initiate the project will include:

- Work clothes, pants and long sleeves
- Work boots with steel toe
- Work gloves as necessary
- Hard hat if work is conducted near equipment
- Safety glasses
- Hearing protection as necessary

Modifications may include chemically resistant gloves, booties, and overalls. If air monitoring indicates levels are encountered that require respiratory protection (sustained readings at or above action levels above a daily established background), then work will be halted, and an adequate resolution of PPE will be made by the health and safety manager, field manager, and project manager.

5.2 SITE CONTROL

Site control will be established near each work zone by the Contractor. The purpose is to control access to the immediate work areas from individuals not associated with the project. All work zones will be fenced off with controlled access and appropriately designated as an exclusion area.

Each excavation or drilling area where heavy equipment is being utilized will be set up as a work zone and include an exclusion area and support zone. Exact configuration of each zone is dependent upon location, weather conditions, wind direction and topography. The Contractor's safety manager will establish the control areas daily at each excavation.

An area of 10 feet (as practical) around each excavation will be designated as the exclusion area. This is the area where potential physical hazards are most likely to be encountered by field personnel. The size of the exclusion area may be altered to accommodate site conditions and the drilling/excavation location. If levels of protection higher than level D are used, this plan will be modified to include decontamination procedure. The Site excavation contractor will be required to have eye/face wash equipment/means available on-site.

A support area will be defined for each field activity where support equipment will be located. Normal work clothes are appropriate within this area. The location of this area depends on factors such as accessibility, wind direction (upwind of the operation.), and resources (i.e., roads, shelter, utilities). The location of this zone will be established daily. Excavation areas will be filled or secured (fencing) to prevent access from the public.

6.0 EMERGENCY INFORMATION

In the event of an emergency, the field personnel or the health and safety manager will employ emergency procedures. A copy of emergency information will be kept in the field and will be reviewed during the initial site briefing. Copies of emergency telephone numbers and directions to the nearest hospital will be prominently posted in the field.

6.1 MEDICAL TREATMENT AND FIRST AID

A first aid kit adequate for anticipated emergencies will be maintained in the field. If any injury should require advanced medical assistance, emergency personnel will be notified, and the victim will be transported to the hospital. The Contractor will establish his own first aid station and details will be provided in his HASP.

In the event of an injury or illness, work will cease until the field safety and oversight inspector has examined the cause of the incident and taken appropriate corrective action. Any injury or illness, regardless of extent, is to be reported to the project manager and health and safety officer.

6.2 EMERGENCY CONTACTS

Emergency telephone numbers will be posted in the field and are listed below:

- Ambulance, Fire, Police 911
- Poison Control Center 800-222-1222
- NYSDEC Spills Hotline 800-457-7362
- Jason M. Brydges, BE3 716-830-8636
- Eugene Melnyk, NYSDEC PM 631-444-0242
- Christine Vooris, NYSDOH 518-402-7860
- Buffalo General Medical Center 716-859-5600 See **Attachment 4** for route to facility.

Verbal communications between workers or use of a vehicle horn repeatedly at intervals of three short beeps shall be used to signal all on-site personnel to immediately evacuate the area and report to the vehicle parking area.

6.3 EMERGENCY STANDARD OPERATING PROCEDURES

The following standard operating procedures are to be implemented by on-site personnel in the event of an emergency. The health and safety manager and Contractor's field manager shall manage response actions.

1. Upon notification of injury to personnel, the designated emergency signal shall be sounded. All personnel are to terminate their work activities and assemble in a safe location. The emergency facility listed above shall be notified. If the injury is minor, but requires medical attention, the Contractor's field manager or the health and safety manager shall accompany the victim to the hospital and help in describing the circumstances of the accident to the attending physician.
2. Upon notification of an equipment failure or accident, the Contractor's field manager or the health and safety manager shall determine the effect of the failure or accident on site operations. If the failure or accident affects the safety of personnel or prevents completion of the scheduled operations, all personnel are to leave the area until the situation is evaluated, and appropriate actions taken.
3. Upon notification of a natural disaster, such as tornado, high winds, flood, thunderstorm or earthquake, on-site work activities are to be terminated and all personnel are to evacuate the area.

6.4 EMERGENCY RESPONSE FOLLOW-UP ACTIONS

Following activation of an emergency response, the health and safety officer shall notify the project manager, and the Contractor's field manager shall submit a written report documenting the incident to the project manager.

6.5 MEDICAL TREATMENT

The Contractor's field manager shall be informed of any site-related injury, exposure or medical condition resulting from work activities. All personnel are entitled to medical evaluation and treatment in the event of a site accident or incident.

6.6 SITE MEDICAL SUPPLIES AND SERVICES

The Contractor's field manager or a trained first aid crew member shall evaluate all injuries at the site and render emergency first-aid treatment, as appropriate. If an injury is minor but requires professional medical evaluation, the field manager shall escort the employee to the appropriate emergency room. For major injuries occurring at the site, emergency services shall be requested. A first-aid kit shall be readily accessible, fully supplied, and maintained at specified locations used for on-site operations.

6.7 PRECAUTIONS

Universal precautions shall be followed on-site that consist of treating all human blood and certain body fluids as being infected with Human Immune Deficiency Virus (HIV), Hepatitis B virus (HBV), or other blood borne pathogens. Clothing and first-aid materials visibly contaminated with blood or other body fluids will be collected and placed into a biohazard bag. Individuals providing first aid or cleanup of blood- or body-fluid contaminated items should wear latex gloves. If providing CPR, a one-way valve CPR device should be used. Biohazard bags, latex gloves, and CPR devices will be included in the site first-aid kits.

Work areas visibly contaminated with blood or body fluids shall be cleaned using a 1:10 dilution of household bleach. If equipment becomes contaminated with blood or body fluids, and can not be sufficiently cleaned, the equipment shall be placed in a plastic bag and sealed. Any personnel servicing the equipment shall be made aware of the contamination, so that proper precautions can be taken.

7.0 RECORDKEEPING

The Contractor's field manager and health and safety officer are responsible for site record keeping. Prior to the start of work, they will review this Plan along with the Contractor's HASP. A Site safety briefing will be completed prior to the initiation of field activities. This shall be recorded in the field log book. An accident report should be completed by the Field Manager if an accident occurs and forwarded to the project manager.

8.0 PERSONNEL TRAINING REQUIREMENTS

8.1 INITIAL SITE BRIEFING

Prior to site entry, the Contractor's health and safety manager shall provide all personnel (including site visitors) with site-specific health and safety training. A record of this training shall be maintained. This training shall consist of the following:

- Discussion of the elements contained within this plan
- Discussion of responsibilities and duties of key site personnel
- Discussion of physical, biological and chemical hazards present at the site
- Discussion of work assignments and responsibilities
- Discussion of the correct use and limitations of the required PPE
- Discussion of the emergency procedures to be followed at the site

- Safe work practices to minimize risk
- Communication procedures and equipment
- Emergency notification procedures

8.2 DAILY SAFETY BRIEFINGS

The Contractor's health and safety manager will determine if a daily safety briefing is required. The briefing shall discuss the specific tasks scheduled for that day and the following topics:

- Specific work plans
- Physical, chemical or biological hazards anticipated
- Fire or explosion hazards
- PPE required
- Emergency procedures, including emergency escape routes, emergency medical treatment, and medical evacuation from the site
- Weather forecast for the day
- Buddy system
- Communication requirements
- Site control requirements
- Material handling requirements

9.0 COMMUNITY AIR MONITORING PROGRAM (CAMP)

A Community Air Monitoring Program (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the upwind and downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The program is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors and on-site workers not directly involved with work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities.

The complete CAMP is provided in **Appendix E**

ATTACHMENT 1

Table of Potential Hazards and OSHA Standards

Potential Hazards and OSHA Standards for Consideration during IRMs

Site Exposure/Control	Potentially Applicable OSHA Standard*	
	1910 General Industry	1926 Construction
Hazard Assessment & Employee Training	29 CFR 1910.132(d)	29 CFR 1926.21(b)
Chemical Exposure	29 CFR 1910.1000	29 CFR 1926.55
Noise Exposure	29 CFR 1910.95	29 CFR 1926.52
Sanitation	29 CFR 1910.141	29 CFR 1926.51
Wiring Methods (temporary wiring)	29 CFR 1910.305(a)(2) 29 CFR 1910.333	29 CFR 1926.405(a)(2)
Electrical Hazards		29 CFR 1926.416
Emergency Action Planning	29 CFR 1910.38	29 CFR 1926.35
Excavation	covered by 1926	29 CFR 1926 Subpart P
Confined Space Entry	29 CFR 1910.146	29 CFR 1926.21(b)(6)29 CFR 1926.353(b)
Material Handling	29 CFR Subpart N	29 CFR Subpart N29 CFR 1926.600-60229 CFR 1926.604
Building Demolition	covered by 1926	29 CFR 1926 Subpart T
Site Contaminant Abatement	29 CFR 1910.1000-1029 29 CFR 1910.1043-1052	29 CFR 1926.5529 CFR 1926.6229 CFR 1926.1101-1152
Elevated Work Surfaces	29 CFR 1910 Subpart D 29 CFR 1910 Subpart F	29 CFR 1926 Subpart L29 CFR 1926 Subpart M29 CFR 1926.552
Chemical Storage	29 CFR 1910 Subpart H29 CFR 1910.1200	29 CFR 1926.5929 CFR 1926 Subpart F
Personal Protective Equipment	29 CFR 1910 Subpart I	29 CFR 1926 Subpart E
Heavy Equipment Operation	29 CFR 1910.9529 CFR 1910 Subpart N	29 CFR 1926.5229 CFR 1926 Subpart O
Tasks-Long Duration	29 CFR 1910.141-142	29 CFR 1926.51

The Federal General Industry and Construction citations are provided above

ATTACHMENT 2

Heat Stress Management Program and Procedures

INTRODUCTION

Panamerican employees engage in a variety of activities with potential exposure to excessive ambient temperatures and humidity, with the overall result being Aheat stress@. This procedure establishes the Panamerican Heat Stress Management Program. It establishes responsibilities and basic requirements for personnel who may be required to work in situations where the ambient temperature exceeds 21° C (70° F) while wearing protective equipment (e.g., hazardous waste site investigations) or when the ambient temperature exceeds 29° (85° F) while wearing normal clothing. Because heart stress is one of the most common and potentially serious illnesses at job sites and particularly hazardous waste sites, regular monitoring and other preventive measures are warranted.

There are no regulations addressing heat stress. However, it should be noted that OSHA does recognize heat stress as a potentially serious health hazard and can site employers under the Ageneral duty clause@ of the Occupational Safety Health Act if heat-related illness is occurring or likely to occur.

PROGRAM ADMINISTRATION AND RESPONSIBILITIES

The Heat Stress Management Program is administered by Panamerican Managers and Health and Safety personnel.

These Individuals:

- Oversee the implementation of the Heat Stress Management Program;
- Periodically audit and evaluate program implementation;
- Evaluate this procedure on an ongoing basis to see that it reflects current practice and regulations;
- Assist field crews in their implementation of this procedure.

Project Managers (PM) and Safety Personnel are responsible for:

- Implementing this Procedure in all field operations;
- Providing guidance to staff regarding heat stress management as described in the Procedure; and
- Providing feedback to management regarding program effectiveness.

Staff Members are responsible for:

- Complying with this Procedure as it applies to their activities; and
- Providing feed back to their supervisor regarding program effectiveness.

HEAT STRESS HAZARDS AND RISK FACTORS

Heat Stress is defined as the total net load on the body with contributions from both exposure to external sources, such as sunshine and hot surfaces, and from internal metabolic heat production. A person=s

exposure to the increased ambient temperatures and humidity produces physiological responses referred to as heat stress which are characterized by an increase in the: a) Core or deep body temperature. b) heart rate, c) blood flow to the skin, and d) water and salt loss due to sweating. Conditions of excessive heat stress may occur either when the physical work is too heavy or the environment is too hot in relation to the work being performed. If work is performed under hot environmental conditions, the work load effort must be reviewed and the heat exposure limit maintained at or below the levels to protect the worker from the risk of acute heat illness.

In general, there are four types of physiological disorders associated with heat stress. They include:

- Heat Rash - a skin reaction occurring as a result of obstructed sweat glands, often associated with impermeable clothing.
- Heat Cramps - painful muscle spasms of extremities and abdomen, resulting from inadequate balance of electrolytes which are lost from sweating.
- Heat Exhaustion - a mild form of heat stroke due to depletion of body fluids and electrolytes. Blood vessels dilate despite decreased volume of blood. Symptoms include weakness, dizziness, nausea, rapid pulse, and a small increase in body temperature.
- Heatstroke - a potentially fatal disorder resulting from failure of the body's thermoregulatory system. The classical description of heatstroke includes (1) a major disruption of central nervous function (unconsciousness or convulsions), (2) a lack of sweating (3) hot, dry, red or mottled skin, and (4) a core temperature in excess of 41°C (105.8°F). Heatstroke is a serious medical condition which calls for emergency medical action.

Seven factors play significant roles in the development of or predisposition to, heat stress disorders. These factors include:

- Acclimatization - Heat acclimatization leads to increased and quicker sweating, cooler skin due to an increase in evaporative cooling and a lower, more stable core body temperature. Maximal sweating rates in unacclimatized persons are lower, but salt concentrations in their perspiration are higher, requiring a higher rate of salt replacement.
- Age - Older individuals are generally more susceptible to heat stress than younger individuals. However, older healthy workers are able to perform well in hot jobs if permitted to proceed at a self-regulated pace.
- Gender - The average woman has a lower aerobic capacity than a similar-sized man. Nevertheless, when working at similar proportions of their maximum aerobic capacity, women perform similarly or only slightly less well than men.
- Body Fat - The lower level of physical fitness, decreased maximum work capacity and decreased cardiovascular capacity frequently associated with obesity predispose individuals to heat disorders.
- Water and Electrolyte Balance - Sustained, effective work performance in heat requires a

replacement of body water and electrolytes lost through sweating. If this water is not replaced by drinking, continued sweating will draw on water reserves from both tissues and body cells leading to dehydration.

- Use of Alcohol and Medication - Notwithstanding the potential hazards from impaired coordination and judgment, the ingestion of alcohol before or during work in the heat should not be permitted because it reduces heat tolerance and increases the risk of heat illness. Many drugs, including diuretics and antihypertensives, can interfere with the body's thermoregulation.
- Physical Fitness - Physical conditioning enhances heat tolerance by increasing the functional capacity of the cardiovascular system, and reduces the time required to develop heat acclimatization by about 50% over those not physically fit.

The factors listed above are to be taken into account by all project personnel when planning or executing a project subject to heat stress conditions. The factors should be taken into consideration for:

- the development of the project schedule;
- the ordering of supplies/equipment;
- the support facilities to be made available at the site;
- the execution of work tasks; and
- the after work hours activities.

The following is a summary of signs and symptoms of heat stress:

Heat Rash may result from continuous exposure to heat or humid air .

Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include:

- Muscle Spasms
- Pain in the hands, feet and abdomen.

Heat Exhaustion occurs from increased stress on various body organs, including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include:

- Pale, cool and 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 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 are:

- Red, hot and unusually dry skin
- Lack of or reduced perspiration
- Dizziness and confusion

- Strong, rapid pulse and coma.

HEAT AND STRESS PREVENTION

Preventive measures should be taken to prevent personnel from experiencing heat stress illness. Prevention of heat stress is also important because if an individual has experienced a heat illness incident, he has an increased likelihood of future occurrences. Preventive measures include: favorable work scheduling, acclimatization of workers to hot environments, drinking sufficient quantities of fluids, providing cool, sheltered work and rest areas, and utilizing cooling devices as appropriate of feasible. Heat stress monitoring/work rest regimens are discussed below.

Work Schedules and Activity

If possible, work should be scheduled during the coolest part of the day. Early morning and evening work can be considerably more effective than working midday when the additional time for breaks and heat stress monitoring are taken into account.

Employees should also be encouraged to maintain a certain level of activity during the work shift. Prolonged standing in hot environments can lead to heat illness because the blood pools in the lower extremities. Workers should periodically walk about to encourage blood circulation from the feet and legs.

Acclimatization of Workers

A properly designed and applied heat acclimatization program will dramatically increase the ability of workers to work at a hot job and will decrease the risk of heat-related illnesses and unsafe acts. Heat acclimatization can usually be induced in 5 to 7 days of exposure to the hot job. For workers who have had previous experience with the job, the acclimatization regimen should be exposure for 50% on day 1, 60% on day 2, 80% on day 3 and 100% on day 4. For workers new to job the schedule should be 20% on day 1 with a 20% increase in each additional day.

Acclimatization can be induced by sustained elevations of the skin and core body temperatures above levels for the same work in cool environments for an hour or more per day. Acclimatization needs periodic reinforcement such as occurs daily during the work week. Persons may show some loss of acclimatization on the first day of the new shift after being idle for two days or over a weekend. After vacations of two weeks or longer the loss of acclimatization is substantial, several days at work will be needed before heat tolerance is fully restored.

Drinking Sufficient Quantities of Fluids

Under hot conditions where sweat production may reach 6 to 8 liters per day, voluntary replacement of the water lost is usually incomplete. The normal thirst mechanism is not sensitive enough to urge us to drink enough water to prevent dehydration. Individuals are seldom aware of the exact amount of sweat they produce or how much water is needed to replace that lost in sweat; 1 liter/hour is not an uncommon rate of water loss. Every effort should be made to encourage individuals to drink water, low-sodium noncarbonated beverages or electrolyte replacement fluids (e.g., Gatorade). Lightly salted water (1 gram/liter of water (0.1%) or one level teaspoon per 15 quarts of water), should be provided to unacclimated workers. The salt should be dissolved completely and the water kept cool. Salt tablets as dietary supplements are not generally recommended.

Workers should drink at least 500 ml (one pint) of water before beginning work. The fluid should be maintained at temperatures of 10° to 15° (50 to 59° F). If possible, small quantities of fluids should be consumed at frequent intervals (e.g., 150 to 250 milliliters (ml), or at least a quarter pint, every 20 minutes) rather than the intake of 750 ml (3 cups) or more once per hour. Individuals vary, but water intake should total 4 to 8 liters (quarts) per day. When heat stress is considered a potential problem, a minimum of 1 liter/hour/person of water are to be maintained onsite. Individual paper or plastic cups will be provided in order to prevent the spread of communicable disease.

Alcohol and diuretics such as caffeine (contained in coffee, tea and soft drinks) can increase dehydration. Therefore employees with potential exposure to heat stress should be discouraged from the consumption of these types of fluids during and after working hours.

Cool, sheltered Work and Rest Areas

Exposure to direct sunlight significantly increases the overall thermal loading of the body, thereby increasing an individuals susceptibility to heat stress illnesses. Whenever possible work should be conducted under suspended tarps, in shady areas or in other sheltered areas in order to reduce thermal loading caused by the sun. Cool sheltered areas should be provided also for rest breaks. A rest area should be situated so that part of it is in the contamination reduction area so that workers can take breaks without being required to undertake a full decontamination procedure. Canopies or tarps and open air tents, are types of cool shelters which can provide shaded rest areas.

Cooling Devices

Auxiliary cooling devices can be successfully used to provide body cooling, especially to workers wearing protective garments at hazardous waste sites. Vortex coolers utilize high velocity air which is directed inside the protective clothing. Vortex coolers have been used successfully in some operations. Cooling vests utilizing Ablue ice@ type packs can provide some cooling to the torso, but add weight for the wearer and can inhibit body movements.

Newer, more sophisticated tube and refrigerant systems woven into undergarments are also available. However, some of these systems „may not be effective in situations where the work involves considerable motion, since bending and lifting can crimp the tubes, impeding the flow of refrigerant.

Heat Stress Monitoring

Several heat stress monitoring systems have been devised to help manage heat stress in hot work environments. Panamerican performs heat stress monitoring when: 1) employees are wearing normal work clothing in ambient temperatures exceeding 29° C, (85° F) and 2) employees wearing chemical protective clothing (including paper coveralls) working in ambient temperatures exceeding 21° C (70° F). The temperature differential is related to the reduced ability of a person to maintain a core temperature of $\pm 37^{\circ}$ C (98.6° F) when wearing chemical protective clothing.

It should be noted by personnel that there are no Afast and true@ methods of heat stress monitoring; likewise there are no regulations concerning heat stress monitoring. Individual susceptibility to heat stress is highly variable. Some individuals are highly susceptible to any increase in their internal body temperature while other individuals can work very well with internal body temperatures of 39°C (102.2° F) or higher.

The heat stress monitoring systems should be used by Site Safety Officers as guidelines and not necessarily as hard, fast rules. Individuals working in elevated temperatures should be queried on a regular basis regarding their perceived state of heat stress. If the calculated heat stress index value indicates that work can continue but a person states that they believe they are experiencing heat stress, the work effect should be discontinued and a rest break taken.

Likewise, if the calculated heat stress index value indicates that a rest break should be taken but the workers believe they can work longer, they should be permitted to work longer providing that their heart rates do not exceed 110 beats per minute. If the individual's heart rate rates exceed 110 beats per minute a rest break will be taken. In all cases, individual workers should not be permitted or expected to perform excessive work which could result in heat stress. If a SSO has any concerns that an individual may be pushing himself/herself past the Abreaking point@ the calculated work/rest regimen will be followed.

For strenuous field activities that are part of ongoing site work activities in hot weather, the following procedures shall be used to monitor the body's physiological response to heat, and to monitor the work cycle of each site worker. There are two phases to this monitoring: the initial work/rest cycle is used to estimate how long the first work shifts of the day should be. Heart rate monitoring of each worker will establish the length of the successive work periods. Both phases are to be used are to be used for heat stress monitoring. Failure to use either one could place workers at risk of heat-related disorders.

Phase 1 - Determination of the Initial Work - Rest Regimen

The determination of the initial work - rest regimen can be performed using either of two methods:

- The Modified Dry Bulb Index; or
- The Wet Bulb Globe Thermometer (WBGT) Index

After the initial work - rest regimen has been determined, environmental conditions must be monitored for changes which would require a modification to the work - rest regimen. This, coupled with the heart rate monitoring, determines the work cycles to be followed on a site.

The Modified Dry Bulb Index accounts for the effects caused by solar, load, air temperature, and chemical protective clothing, under a light work load (walking at approximately 3 mph). A mercury thermometer, shielded from direct sunlight, is used to measure ambient temperature. The percentages of (of time) of sunlight and cloud cover are then estimated to determine a sunshine quality factor (e.g., 100% sunshine - no cloud cover = 1.0; 50% sunshine - 50% cloud cover = 0.5; 0% sunshine - 100% cloud cover = 0.0). When these two sets of values have been obtained, they are inserted into the following equation to calculate the adjusted temperature:

$$T (^{\circ}\text{C, adjusted}) = T (^{\circ}\text{C, actual}) + (7.2 \times \text{sunshine quality factor})$$

-OR-

$$T (^{\circ}\text{F, adjusted}) = T (^{\circ}\text{F, actual}) + (13 \times \text{sunshine quality factor})$$

After the adjusted temperature has been calculated, the length of the first work shift can be determined using the following table:

Initial Break and Physiological Monitoring Cycles

ADJUSTED TEMPERATURE	NORMAL WORK CLOTHES	PROTECTIVE CLOTHING
90 ⁰ F (32.2 ⁰ C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5 ⁰ -90 ⁰ F (30.8 ⁰ -32.2 ⁰ C)	After each 60 minutes of work	After each 30 minutes of work
82.5 ⁰ -87.5 ⁰ F (28.1 ⁰ -30.8 ⁰ C)	After each 90 minutes of work	After each 60 minutes of work
77.5 ⁰ -82.5 ⁰ F (25.3 ⁰ -28.1 ⁰ C)	After each 120 minutes of work	After each 90 minutes of work
72.5 ⁰ -77.5 ⁰ F (22.5 ⁰ -25.3 ⁰ C)	After each 150 minutes of work	After each 120 minutes of work

NOTE: The standard rest period is 15 minutes

WET BULB GLOBE THERMOMETER INDEX

The Wet Bulb Globe Thermometer (WBGT) Index was developed by the U.S. Army in the 1950s to prevent heat stress in army recruits. The WBGT Index accounts for the effects caused by humidity, air movement, evaporation, air temperature and work rate. It does not, however, account for the effects of chemical protective clothing, non-acclimatized workers, age, or other factors which may affect the likelihood of heat stress. Because of this, it is necessary to make adjustments to the index and conduct Heart Rate Monitoring.

WBGT measurements are usually obtained through the use of air-contained electronic devices. Such devices are easy to set up and can provide the user with the capabilities to store data and download to print out a hard copy.

Heat produced by the body and the environmental heat together determine the total heat load. Therefore, after the WBGT Index has been obtained, the anticipated work load category of each job shall be determined and the initial-rest regimen established using the table below.

The work load category may be determined by ranking each job into light, medium and heavy categories on the basis of type of operation. Examples of each category are:

- Light work: sitting or standing to control machines, performing light hand work
- Moderate work: walking about with moderate lifting and pushing; and
- Heavy work: pick and shovel work.

PERMISSIBLE HEAT EXPOSURE			
WORK-REST REGIMEN	WORK LOAD		
	LIGHT	MODERATE	HEAVY
	30.0 ⁰ C/86 ⁰ F	26.7 ⁰ C/80.1 ⁰ F	25 ⁰ C/77 ⁰ F
75% Work-25% Rest Each Hour	30.6 ⁰ C/87.1 ⁰ F	28 ⁰ C/82.4 ⁰ F	25.9 ⁰ C/78.6 ⁰ F
50% Work-50% Rest Each Hour	31.4 ⁰ C/88.5 ⁰ F	29.4 ⁰ C/85.0 ⁰ F	27.9 ⁰ C/82.2 ⁰ F
25% Work-75 % Rest Each Hour	32.2 ⁰ C/90.0 ⁰ F	31.1 ⁰ C/88.0 ⁰ F	30.0 ⁰ C/86.0 ⁰ F

The table reads as follows:

Light, continuous work is possible at any WBGT reading up to 30⁰ C (86⁰F) but above that limit work breaks

are needed to recover from the heat; light work at temperatures of between 30.0 and 30.6°C (86 to 87°F) can be conducted, but 15 minute breaks must be taken every hour, etc. It is important to note that this table is applicable primarily to healthy, acclimatized personnel; wearing standard work clothing.

NOTE: An additional 6 to 11°C (42.8 to 51.8°F) must be added to the calculated WBGT temperature for personnel wearing chemical protective clothing prior to determining the initial work - rest regimen from this table. Because the WBGT Index does not take into account unacclimatized workers, or individual susceptibilities, the addition to the WBGT value does not eliminate the requirement for Heart Rate Monitoring after work has begun.

Phase 2 - Heart Rate Monitoring

An increase in the heart rate is a significant indication of stress, whether induced by exposure to heat or through physical labor. Although baseline heart rates can vary significantly between individuals and during the day for an individual, a heart rate of 110 beats per minute or greater is an indication of physiological stress. To prevent heat stress illnesses, the heart rate (HR) should be measured by radial (wrist) or carotid (neck) pulse for 30 seconds as early as possible in the rest period. The HR at the beginning of the rest period should not exceed 110 beats/minute. If the HR is higher, the next work period should be shortened by 33 percent while the length of the rest period stays the same. If the pulse rate still exceeds 110 beats/minute at the beginning of the next rest period, the following work period should be further shortened by 33 percent while the length of the rest period stays the same.

ATTACHMENT 3

Trenching and Excavation Health and Safety Requirements

REGULATORY AUTHORITY

Excavations will be performed in accordance with OSHA 29 CFR, subpart P, 1926.650-1926.652 and USACOE EM 385-1-1 section 25 requirements as they apply to project activities.

GENERAL

- At all times the need for personnel to enter excavations will be minimized. Inspections or sample removal will be done from above the excavation, whenever possible.
- Personnel will only enter excavations after the requirements of this plan have been met.
- Personnel protective equipment including hard hat, safety glasses and steel-toe work boots may be required.

SURFACE ENCUMBRANCES

Surface encumbrances such as structures, fencing, piping, stored material etc. which may interfere with safe excavations will be avoided, removed or adequately supported prior to the start of excavations. Support systems will be inspected daily.

UNDERGROUND UTILITIES

Underground utility locations will be checked and determined and permits as necessary will be in place prior to initiating excavations. Local utility companies will be contacted at least two days in advance, advised of proposed work, and requested to locate underground installations. When excavations approach the estimated location of utilities, the exact location will be determined by careful probing or hand digging and when it is uncovered, proper supports will be provided.

OVERHEAD OBSTACLES

A minimum safe distance of 20 feet will be maintained when working around overhead high-voltage lines or the line will be de-energized following appropriate lock-out and tag-out procedures by qualified utility personnel.

ENTRY/EXIT ROUTES

Excavations five feet or more deep will require an adequate means of exit, such as a ladder, ramp, or steps and located so as to require no more than 25 feet of lateral travel. Under no circumstances will

personnel be raised.

VEHICLE CONTROL/SAFETY

Personnel working around heavy equipment, or who may be exposed to public vehicular traffic will wear a traffic warning vest consisting of at least 400 square inches of red or orange material. At night, at least 400 square inches of florescent or other reflective material will be worn.

For excavation work on or adjacent to highways or streets, signs, signals, and barricades that conform to the requirements of the current American National Standards Institute (ANSI) D6.1, Manual on Uniform Traffic Control Devices for Streets and Highways will be used to protect work areas. Signs, signals, and barricades will be adequately lighted at night. Flagmen will be provided when signs, signals and barricades do not provide adequate protection. Flagmen will use signals and procedures contained in the current issue of ANSI D6.1. At night, flagmen will be clearly illuminated so as to be easily seen by approaching traffic.

For mobile equipment operating next to or approaching the edge of an excavation, the operator will have a clear view of the edge of the excavation, or a warning system such as barricades, hand or mechanical signals, or stop logs will be used. If possible the surface grade will slope away from the excavation.

Personnel will be safely located in and around the trench and will not be permitted to work underneath loads handled by lifting or digging equipment. Personnel are required to stand away from vehicles being loaded and unloaded. Operators can remain in the cabs of vehicles being loaded or unloaded provided the vehicles are equipped to provide adequate protection to the operator.

HAZARDOUS ATMOSPHERES

Hazardous atmospheres, such as oxygen deficiency (atmospheres containing less than 19.5% oxygen), flammable gases or vapors (airborne concentrations greater than 20% of the lower explosive limit), and toxic gases or vapors (airborne concentrations above the OSHA Permissible Exposure Limit or other exposure limits) may occur in excavations, especially around landfills and hazardous waste sites.

In locations where oxygen deficiency or hazardous gaseous conditions are possible, the air in the excavation will be tested before personnel are permitted to enter an excavation deeper than 4 feet. When flammable gases are present, adequate ventilation will be provided and sources of ignition will be eliminated. Ventilation or respiratory protection will be provided to prevent personnel exposures to oxygen deficient or toxic atmospheres. Periodic retesting (at least each shift) of the excavation will be conducted to verify that the atmosphere is acceptable. A log or field book records will be maintained of all test results.

WATER ACCUMULATION HAZARDS

Personnel will not work in excavations that have accumulated water or where water is accumulating unless adequate precautions have been taken. These precautions can include special support or shield systems, water removal systems such as pumps, or safety harnesses and lifelines. Water removal systems will be operated and monitored by experienced personnel. Diversion ditches or dikes will be used to prevent surface water from entering the excavation and to provide adequate drainage of the area around the excavation. Adequate precautions, as described above, will be taken for excavating

subject to heavy rains.

STABILITY OF ADJACENT STRUCTURES

Support systems such as shoring, bracing, or underpinning will be provided to maintain the stability of adjoining buildings, walls, or other structures endangered by the excavation operations. Excavations below a foundation or retaining wall that could be reasonably expected to pose a hazard to personnel will not be permitted unless:

- a support system is provided
- The excavation is in stable rock; or
- A Registered Professional Engineer has determined that the structure will not be effected by the excavation activity or that the excavation work will pose a hazard to employees. The Professional Engineer is required to demonstrate how the above determination was made on the basis of appropriate calculations.

Sidewalks will not be undermined unless shored to protect from possible collapse.

PROTECTION FROM LOOSE ROCK, MATERIALS OR SPOILS

In excavations and trenches that personnel may be required to enter, loose rock, excavated or other material, and spoils will be effectively stored and retained at least two feet or more from the edge of the excavation.

As an alternative to the clearance prescribed above, barriers or other effective retaining devices may be used in order to prevent spoils or other materials from falling into the excavation.

Walkways, runways, and sidewalks will be kept clear of excavated material from other obstructions.

Scaling operations may be used to remove loose material and will be performed only by experienced crews under the direct supervision of a competent supervisor. The scalers will be provided with scaler=s lifelines, safety belts, boatswain chair, and other safety equipment necessary for their protection.

FALL PROTECTION

Walkways or bridges with standard guardrails that meet OSHA specifications will be provided where employees, the public, or equipment are required to cross over excavations.

Adequate barrier physical protection will be provided at all remotely located excavations. All excavations will be barricaded or covered.

EMERGENCY RESCUE

In the event of a cave-in, the Emergency Rescue Squad will be immediately notified. The caller should provide his name, location, nature of the accident (an excavation collapse), the dimensions of the excavation, and number of people trapped in the excavation. Personnel are not to enter a collapsed trench to attempt rescue. This may cause a further collapse of the trench. Under no circumstance is heavy equipment to be used to attempt rescue of personnel in a collapsed excavation; injury or decapitation could be the result. All heavy equipment and traffic in the area is to be shut down and

stopped to reduce vibration. Pumps should be started if water ensues.

INSPECTION PROGRAM

Safety personnel will conduct daily inspections of the excavation, the adjacent areas, and protective systems. Inspections will be conducted prior to the start of work and as needed throughout the work shift. Inspections will also be made after every rainstorm or other occurrence that increases the hazard of collapse (i.e., vibration from heavy equipment, freezing and thawing, etc.).

The excavation inspection will include a check for the following:

- Evidence if situations that could result in possible cave-in (i.e. soil crumbling or sloughing, water saturated soils, freezing and thawing, unusual vibrations such as from heavy equipment, heavy rains, surface run off entering trench, etc.);
- Indications of failure of protective systems;
- Hazardous atmosphere (oxygen deficiency, flammable and toxic gases and vapors);
- Condition and support of exposed underground installations;
- Adequate means of egress;
- Signs, signals, and barricades for work area protection;
- Precautionary measures to control water accumulation;
- Stability and support of adjacent structures; and
- Adequate protection from loose rock and soil.

PROTECTIVE SYSTEMS

Personnel working in excavations will be protected from cave-ins by sloping and/or benching of excavation walls, a shoring system or some other equivalent means except when:

- The excavation is made entirely in stable rock; or
- Excavations are less than five feet deep and safety personnel have determined that there is no indication of potential cave-in. Depending on site and soil conditions protective measures may be taken for the excavations less than five feet in depth.

The most important factor influencing the choice of protective systems is the soil type classification. Once the soil type has been classified, selection of the protective system, the determination of the angle of repose for sloping and benching, and the design of shoring systems will be made. Decisions will be based on careful evaluation of pertinent factors such as depth of cut; possible variation in water content of the material while the excavation is open; anticipated changes in materials from exposure to air, sun, water, or freezing; loading imposed structures equipment, overlying material, or stored material; and vibration from equipment, blasting traffic or other sources.

Soil Classification

Appendix A of the OSHA Excavation Standard describes a method to classify soils into four types:

1. **Stable Rock** - Solid mineral matter that can be excavated with vertical sides.
2. **Type A** - cohesive soils with an unconfined compressive strength of 1.5 ton per square foot (tsf) or greater. Examples include: clay; silty clay; sandy clay; clayey loam; and cemented soils such as caliche and hardpan. No soil is considered to be Type A if it is fissured, subject to vibration, previously disturbed, or part of a sloped, layered system.
3. **Type B** - cohesive soils with an unconfined compressive strength of greater than 0.5 tsf but less than 1.5 tsf. Examples include: angular gravel similar to crushed rock; silt; silty loam; and sandy loam; Type B soils also include : previously disturbed soils that are not type C; Type A soils that are fissured or subject to vibration; and dry rock that is not stable.
4. **Type C** - cohesive soils with an unconfined compressive strength of 0.5 tsf or less. Examples include: gravel; sand; loamy sand; submerged soil or soil from which water is seeping; submerged rock that is not stable.

The engineer, geologist, or safety personnel will conduct at least one visual and at least one manual test as described in the OSHA excavation standard in order to classify soils. Visual tests include looking for : particle size and soil cohesiveness (clumping); cracking in the excavation sides which suggests fissured material; underground installations and previously disturbed soils; layered soil systems that slope toward the excavation; evidence of surface water and water seeping from the sides of the excavation; and sources of vibration that may affect the excavation stability. Manual tests include: plasticity; dry strength; tumb penetration; drying test; and strength tests using a pocket penetrometer or hand-operated sheervane.

Sloping and Benching

One of the following options for sloping and benching systems described in section 1926.652(b) of the OSHA Excavation Standard will be used in excavations of .5 foot or deeper or at the discretion of the safety personnel:

- The walls of excavation will be sloped at an angle not steeper than one-and one-half horizontal to one vertical. Sloping configurations will follow the slopes shown for Type C soils in Appendix B of the OSHA Excavation Standard.
- Maximum allowable slopes and sloping and benching configurations will be determined according to soil type as described in Appendices A and B of the OSHA Excavation Standard.
- Use of other written tabulated data and designs, such as tables and charts, to design sloping and benching systems. A copy of the tabulated data must be approved by a registered Professional Engineer. A copy of the tabulated data must be kept at the job site.

Personnel are not allowed to work on the faces of sloped or benched excavations above other workers unless the workers at the lower levels are protected from falling material or equipment. Similar protection will be provided for personnel working in excavations below other workers.

Support Systems, Shield Systems, and Other Protective Devices

One of the following options described in OSHA (1926.652 (c)) will be followed.

- Timber shoring, designed according to the conditions and requirements of Appendix C of the OSHA Excavation Standard or aluminum hydraulic shoring designed according to manufacturers tabulated data or Appendix D of the OSHA Excavation Standard. In order to use the information in Appendices C or D, the soil type must first be determined using the classification system in Appendix A. For each soil type the size and spacing of the cross braces, uprights, and walls that comprise the shoring system are then selected based on the depth and width of the trench.
- Use of the manufacturer=s written tabulated to design support systems, shielded systems, and other protective devices. Any deviation from this tabulated data must be approved by the manufacturer. A copy of the tabulated data as well as any approvals to deviate from the tabulated data must be kept at the job site.
- Use of other written tabulated data to design support systems, shield systems, and other protective devices. The tabulated data must be approved by a Registered Professional Engineer. A copy of the tabulated data must be kept at the job site.
- Use of a written support system, shield system, and other protective device design that has been approved by a Registered Professional Engineer. A copy of the written design must be kept at the job site.

Installation and Removal of Support

Cross braces or trench jacks, uprights, and walls will be secured together to prevent sliding, falling or kickouts.

Additional precautions by way of shoring and bracing will be taken to prevent slides or cave-ins when excavations or trenches are made in locations adjacent to backfilled excavations, or where excavations are subjected to vibrations from railroad or highway traffic, the operation of machinery, or any other source.

If it is necessary to place or operate power shovels, derricks, trucks, materials, or other heavy objects on a level above or near any excavation, the side of the excavation will be sheetpiled, shored, and braced as necessary to resist the extra pressure due to such superimposed loads.

Backfilling and removal of trench supports will progress together from the bottom of the trench. Jacks or braces will be released slowly and , in unstable soil, ropes will be used to pull out the jacks or braces from above after employees have cleared the trench.

Shield Systems

Portable trench boxes or sliding trench shields may be used for protection of personnel in lieu of a shoring system or sloping. Where such trench boxes or shields are used, they will be designed, constructed and maintained in a manner which will provide protection equal to or greater than the sheeting or shoring required for the trench. Shields will be installed so as to restrict lateral or other hazardous movement. Personnel are not allowed inside shields when shields are being moved.

EXCAVATION SAFETY LIST

To be completed prior to each work shift, or prior to personnel entering a new trench for the first time, by the Site Safety Officer/Competent Person:

Project _____ Location _____

Job Number _____

Competent Person(CP)* _____ Date _____

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
1. Has the site been cleared for utilities and other underground obstructions?	_____	_____	_____
2. If on public property, has the regional utility locating service been notified?	_____	_____	_____
3. Has the excavation equipment been safety checked by the operator?	_____	_____	_____
4. Are copies of relevant OSHA excavation regulations available on site?	_____	_____	_____
5. Will the excavation be 5 feet or more in depth?	_____	_____	_____
6. If 4 is yes, will personnel enter the excavation at any time?	_____	_____	_____
7. If 4a is yes, have provisions been made for shoring, sloping, or benching the excavation? Describe: _____ _____ _____	_____	_____	_____
8. Has an inspection of the site and excavation been conducted by the SSO?	_____	_____	_____
9. Has the Competent Person conducted visual and manual tests to classify the soil?	_____	_____	_____

* According to Federal OSHA, A Competent Person is a person who is capable of identifying existing and predictable hazards in the surroundings; or working conditions which are unsanitary, hazardous, or dangerous to employees; and who has the authority to take prompt corrective measures to eliminate them.

- | | | | | | |
|-----|---|--|-------|-------|-------|
| 10. | G | Visual Test _____ (type) | | | |
| | G | Manual Test _____ (type) | | | |
| | G | Soil Classification _____ (type) | | | |
| 11. | | Are there any conditions that might expose employees to injury from possible moving ground? | _____ | _____ | _____ |
| 12. | | Is excavated material being placed at least 2 feet from the edge of the excavation? | _____ | _____ | _____ |
| 13. | | Is work in the excavation at all times under the immediate supervision of the SSO or other competent person? | _____ | _____ | _____ |
| 14. | | Is there a stairway, ladder, or ramp securely fastened in place to provide ingress and egress from the excavation? | _____ | _____ | _____ |
| 15. | | If the excavation is 4 feet or more in depth, are safe means of access (see 8) provided so as to require no more than 25 feet of lateral travel to reach them? | _____ | _____ | _____ |
| 16. | | If structural ramps are installed that are used for access/egress: were they designed by a qualified engineer? | _____ | _____ | _____ |
| 17. | | Do the structural ramps have appropriate means to prevent slipping and are the ramps uniform in thickness? | _____ | _____ | _____ |
| 18. | | Are walkways or bridges provided across the excavation to safe crossing? | _____ | _____ | _____ |
| 19. | | If excavations are 7 1/2 or more feet in depth, do the walkways have guardrails and toeboards? | _____ | _____ | _____ |
| 20. | | Are undermined structures adequately supported to safely carry all anticipated loads and protect workers? | _____ | _____ | _____ |
| 21. | | Are there adequate means provided to prevent mobile equipment from inadvertently entering the excavation? | _____ | _____ | _____ |
| 22. | | Is the excavation well marked and barricaded to prevent personnel from falling IN? | _____ | _____ | _____ |
| 23. | | Are means available to prevent surface water from entering the excavation and to provide | _____ | _____ | _____ |

adequate drainage of the area adjacent to the trench?

- | | | | | |
|------------|--|-----|-----|-----|
| 24. | Where it is reasonable to expect hazardous atmospheres, including oxygen deficiency, to exist in the excavation, is appropriate atmosphere testing equipment available. | ___ | ___ | ___ |
| 25. | Has the testing equipment been calibrated, and the calibrations recorded, today? | ___ | ___ | ___ |
| 26. | Are employees trained in proper use of this equipment? | ___ | ___ | ___ |
| 27. | Has a harness and lifeline been provided whenever an employee is required to enter a confined footing excavation? | ___ | ___ | ___ |
| 28. | Is appropriate personal protective equipment (hardhat, safety boots, eye protection, etc.) available and in use? | ___ | ___ | ___ |

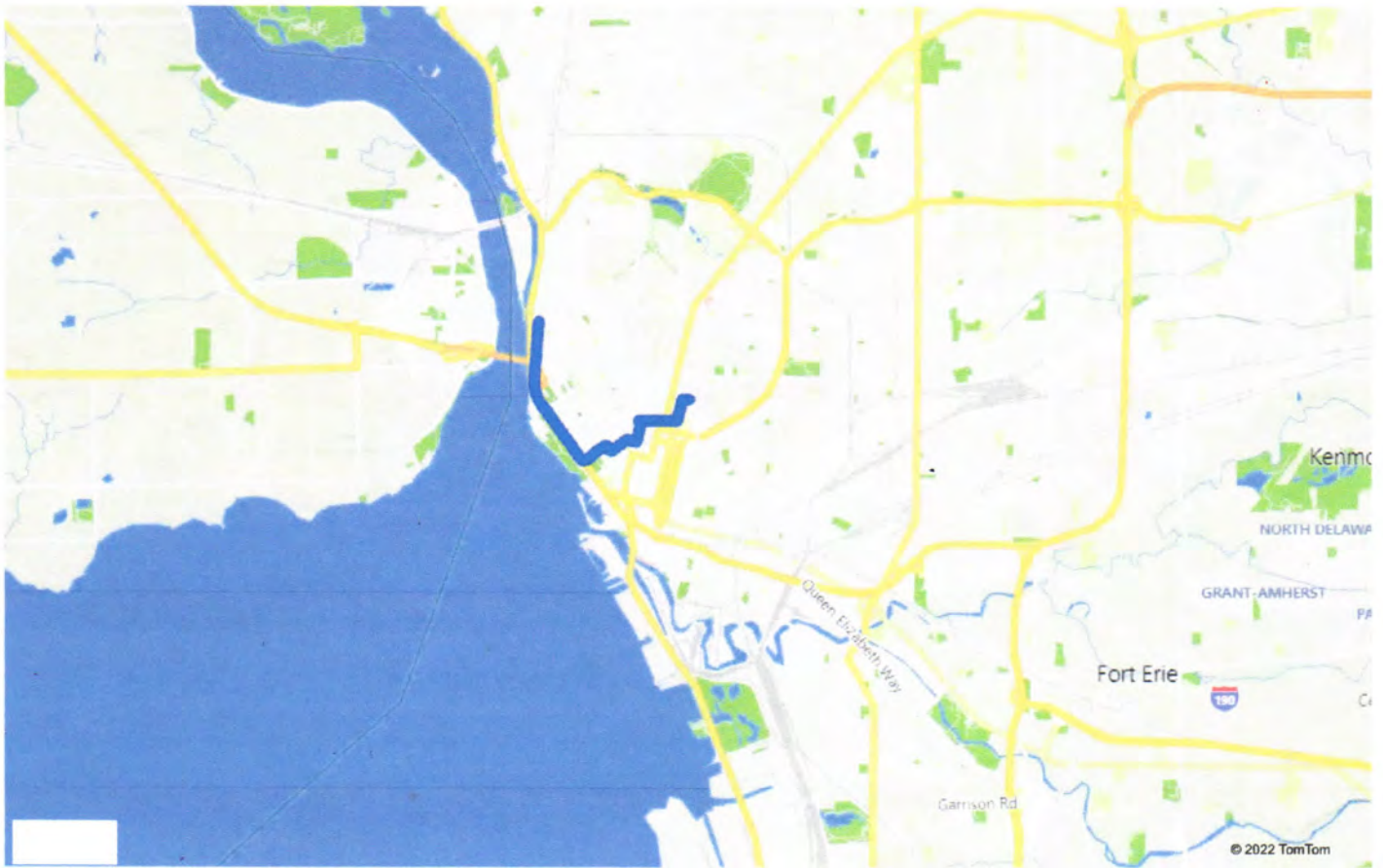
Notes: _____

CPs Name (Print)

Signature

ATTACHMENT 4

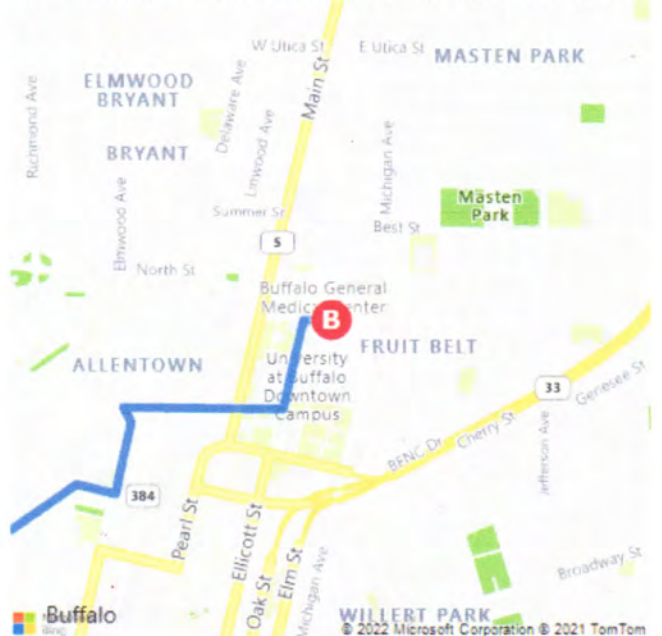
Map to Hospital



A 1100 Niagara St, Buffalo, NY 14213



B Buffalo General Medical Center, 100 High ...



These directions are subject to the Microsoft® Service Agreement and are for informational purposes only. No guarantee is made regarding their completeness or accuracy. Construction projects, traffic, or other events may cause actual conditions to differ from these results. Map and traffic data © 2022 TomTom.

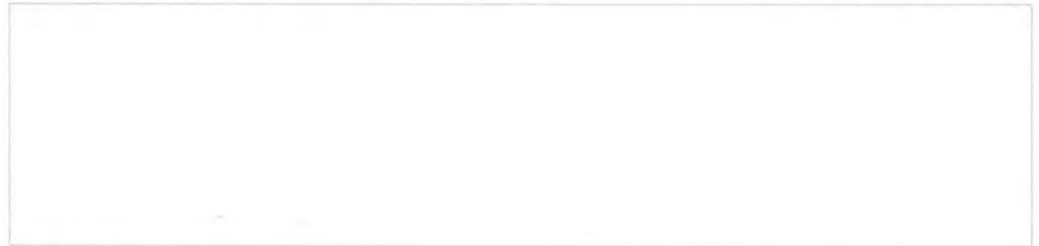
A 1100 Niagara St, Buffalo, NY 14213

B Buffalo General Medical Center, 100 High St, Buffalo, NY 14203

11 min , 3.5 miles

Light traffic (Leave at 5:44 PM)

Via I-190 S, Virginia St



A 1100 Niagara St, Buffalo, NY 14213

↑	1. Head south on NY-266 / Niagara St toward Albany St	0.2 mi
↑↑	2. Keep right to get onto Busti Ave Exxon on the corner	0.2 mi
	3. Take the ramp on the left for I-190 S ▲ <i>Minor Congestion</i>	1.1 mi
↘	4. At Exit 8 , head on the ramp right and follow signs for NY-266 South	0.5 mi
↘	5. Turn right onto NY-266 / Niagara St toward Niagara St S	495 ft
↙	6. Turn left onto Carolina St	0.2 mi
↗	7. Bear right onto Tracy St	0.1 mi
↙	8. Turn left onto S Elmwood Ave	0.3 mi
↘	9. Turn right onto Virginia St	0.4 mi
↙	10. Turn left onto Ellicott St	0.3 mi
↘	11. Turn right onto High St	407 ft
	12. Arrive at High St The last intersection before your destination is N Oak St If you reach Michigan Ave, you've gone too far	

B Buffalo General Medical Center

Appendix B

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

CURTISS MALT HOUSE PROJECT
1100 NIAGARA STREET
BUFFALO, NEW YORK 14213
NYSDEC SITE NO. C915382

Prepared for:

Jenesis Development LLC
One Robert Rich Way
Buffalo, New York 14213

Prepared by:



960 Busti Avenue
Suite B-150
Buffalo, New York 14213

April 2025

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Attachments

1- NYSDOH Generic CAMP and Fugitive Dust and Particulate Monitoring

1.0 COMMUNITY AIR MONITORING PROGRAM (CAMP)

A Community Air Monitoring Program (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the upwind and downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The program is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors and on-site workers not directly involved with work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. A NYSDOH generic CAMP obtained from NYSDEC DER-10 is presented in Attachment 1 that will be followed and adhered to for work activities that could release potential contaminants from an impacted area.

A program for suppressing fugitive dust and particulate matter monitoring will also be conducted in accordance NYSDEC DER-10 titled Appendix 1B Fugitive Dust and Particulate Monitoring, which is also provided in Attachment 1. The fugitive dust suppression and particulate monitoring program will be employed at the site during building demolition, site investigations/remediation and other intrusive activities which warrant its use.

Both the CAMP and the fugitive dust and particulate monitoring program will be administered by the environmental engineer/consultant. Monitoring results of the CAMP will be reported to the New York State Department of Health daily for review.

NYSDEC and NYSDOH are to be provided CAMP data on a daily basis when collected. When sample excursions occur, identify the reason for the excursions and measures to address the excursions.

ATTACHMENT 1

NYSDOH Generic CAMP and Fugitive Dust and Particulate Monitoring

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

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

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

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

Particulate Monitoring, Response Levels, and Actions

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

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \text{ mcg}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \text{ mcg}/\text{m}^3$ above the upwind 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 downwind PM-10 particulate concentration to within $150 \text{ mcg}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix 1B Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

- (a) Objects to be measured: Dust, mists or aerosols;
- (b) Measurement Ranges: 0.001 to 400 mg/m³ (1 to 400,000 µg/m³);
- (c) Precision (2-sigma) at constant temperature: +/- 10 µg/m³ for one second averaging; and +/- 1.5 g/m³ for sixty second averaging;
- (d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 µm, g= 2.5, as aerosolized);
- (e) Resolution: 0.1% of reading or 1 g/m³, whichever is larger;
- (f) Particle Size Range of Maximum Response: 0.1-10;
- (g) Total Number of Data Points in Memory: 10,000;
- (h) Logged Data: Each data point with average concentration, time/date and data point number
- (i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
- (j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
- (k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
- (l) Operating Temperature: -10 to 50° C (14 to 122° F);
- (m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 µg/m³ (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m³, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m³ above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m³ continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM₁₀ at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

- (a) Applying water on haul roads;
- (b) Wetting equipment and excavation faces;
- (c) Spraying water on buckets during excavation and dumping;
- (d) Hauling materials in properly tarped or watertight containers;
- (e) Restricting vehicle speeds to 10 mph;
- (f) Covering excavated areas and material after excavation activity ceases; and
- (g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m³ action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.
- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m³, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m³ or less at the monitoring point.
- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

Special Requirements for Indoor Work With Co-Located Residences or Facilities

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under “Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures” except that in this instance “nearby/occupied structures” would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evenings) when building occupancy is at a minimum.

Appendix C

Quality Assurance/Quality Control Plan

QUALITY ASSURANCE/QUALITY CONTROL PLAN

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1.0 INTRODUCTION

This Quality Assurance/Quality Control (QA/QC) Plan provides an overview of QA/QC procedures required for the project. It also provides methods for laboratory testing of environmental samples obtained from the Site, which helps to ensure the quality of the data produced. The organizational structure for this project is presented in the Work Plan, which identifies the names of key project personnel. The project manager is responsible for verifying that QA procedures are followed in the field so that quality, representative samples are collected. The Project Manager is in contact with the analytical laboratory to monitor laboratory activities so that holding times and other QA/QC requirements are met. The anticipated quantity of field samples collected, and corresponding analytical parameters/methods are provided below.

**TABLE 1
ANALYTICAL SUMMARY TABLE**

<u>PARAMETER</u>	<u>EPA METHOD</u>
Soil/Groundwater (GW)	
Part 375 VOCs + TICs	8260
Part 375 SVOCs + TICs	8270
Part 375 Metals	6010/7470/7471
Part 375 PCBs	8082
Part 375 Pesticides	8081
PFAS Contaminants	537.1
1,4 Dioxane	8270SIM
Air/Vapor	
VOCs (vapor)	TO-15

Holding Times: 8260-14 days and 8270, 8081, and 8082-7 days

Soil - 1 duplicate per approximately every 10 samples

GW - 1 trip blank per day

A complete analyte list is provided in **Table 2** and analytical methods and procedures are provided in **Table 3**. Both tables are located at the end of this document.

The analytical laboratory proposed for use for the analysis of samples will be a certified NYSDOH ELAP laboratory. The QA Manager of the laboratory will be responsible for performing project-specific audits and for overseeing the quality control data generated. The field geologist/technician coordinates all personnel involved with field sampling, verifies that all sampling is conducted per the FSP, and communicates regularly with the Project Manager. The ultimate responsibility for maintaining quality throughout the project rests with the Project Manager, including field and laboratory QA/QC.

PFAS sampling and analysis will be done in accordance with the NYSDEC document: "Sampling, Analysis, and Assessment of PFAS under NYSDEC's Part 375 Remedial Programs document, dated June 2021" or the latest guidance as of the date sampled.

2.0 DATA QUALITY OBJECTIVES

2.1 BACKGROUND

Data quality objectives (DQOs) are qualitative and quantitative statements, which specify the quality of data required supporting the investigation for the site. DQOs focus on the identification of the end use of the data to be collected. The project DQOs are achieved utilizing the definitive data category as outlined in *Guidance for the Data Quality Objectives Process*, EPA QA/G-4 (September 1994). All sample analyses will provide definitive data, which are generated using rigorous analytical methods such as reference methods approved by the United States Environmental Protection Agency (USEPA). The purpose of this investigation is to determine the nature and extent of contamination at the site.

Within the context of the purpose stated above, the project DQOs for data collected during this investigation are:

- To assess the nature and extent of contamination in soil, groundwater, and soil vapor
- To maintain the highest possible scientific/professional standards for each procedure
- To develop sufficient data to assess whether the levels of contaminants identified in the media sampled exceed regulatory guidelines

2.2 QA OBJECTIVES FOR CHEMICAL DATA MEASUREMENT

Sample analytical methodology for the media sampled and data deliverables are required to adhere to the requirements in NYSDEC Analytical Services Protocol. Laboratories are instructed to complete Sample Preparation and Analysis Summary forms and submit with the data packages. The laboratory is instructed that matrix interferences must be fixed to the extent practicable. To achieve the definitive data category described above, the data quality indicators of precision, accuracy, representativeness, comparability, and completeness are measured during analysis.

2.2.1 *Precision*

Precision examines the distribution of the reported values about their mean. The distribution of reported values refers to how different the individual reported values are from the average reported value. Precision may be affected by the natural variation of the matrix or contamination within that matrix and by errors made in field or laboratory handling procedures. Precision is evaluated using analyses of a laboratory matrix spike/matrix spike duplicate (for organics) and matrix duplicates (for inorganics), which indicate analytical precision through the reproducibility of the analytical results. Relative Percent Difference (RPD) is used to evaluate precision and it must meet the method requirements.

2.2.2 *Accuracy*

Accuracy measures the analytical bias in a measurement system. Sources of error are the sampling process, field contamination, preservation, handling, sample matrix, sample preparation, and analysis techniques. These data help to assess the potential concentration

contribution from various outside sources. The laboratory objective for accuracy is to equal or exceed the accuracy demonstrated for the applied analytical methods on samples of the same matrix. The percent recovery criterion is used to estimate accuracy based on recovery in the matrix spike/matrix spike duplicate and matrix spike blank samples. The spike and spike duplicate, which will give an indication of matrix effects that may be affecting target compounds is also a good gauge of method efficiency.

2.2.3 Representativeness

Representativeness expresses the degree to which the sample data accurately and precisely represent the characteristics of a population of samples, parameter variations at a sampling point, or environmental conditions. Representativeness is a qualitative parameter, which is most concerned with the proper design of the sampling program or sub-sampling of a given sample. Objectives for representativeness are defined for sampling and analysis tasks and are a function of the investigative objectives. The sampling procedures described in the Field Sampling Plan have been selected with the goal of obtaining representative samples for the media of concern.

2.2.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. A DQO for this program is to produce data with the greatest possible degree of comparability. This goal is achieved through using standard techniques to collect and analyze representative samples and reporting analytical results in appropriate units. Complete field documentation will support the assessment of comparability. Comparability is limited by the other parameters (e.g., precision, accuracy, representativeness, completeness, comparability), because only when precision and accuracy are known can data sets be compared with confidence. For data sets to be comparable, it is imperative that contract-required methods and procedures be explicitly followed.

2.2.5 Completeness

Completeness is defined as a measure of the amount of valid data obtainable from a measurement system compared to the amount that was expected to be obtained under normal conditions. It is important that appropriate QA procedures be maintained to verify that valid data are obtained to meet project needs. For the data generated, a goal of 90% is required for completeness (or usability) of the analytical data. If this goal is not met, then project personnel will determine whether the deviations might cause the data to be rejected.

3.0 SAMPLING LOCATIONS, CUSTODY, AND HOLDING TIMES

Sampling locations are discussed in Work Plan. Procedures addressing field and laboratory sample chain-of-custody and holding times details are presented in the Field Sampling Plan. The laboratory must meet the method required detection limits which are referenced within the methods.

4.0 CALIBRATION PROCEDURES AND FREQUENCY

To obtain a high level of precision and accuracy during sample processing procedures, laboratory instruments must be calibrated properly. Several analytical support areas must be considered so the integrity of standards and reagents is upheld prior to instrument calibration. The following sections describe the analytical support areas and laboratory instrument calibration procedures.

4.1 ANALYTICAL SUPPORT AREAS

Prior to generating quality data, several analytical support areas must be considered; these are detailed in the following paragraphs.

Standard/Reagent Preparation - Primary reference standards and secondary standard solutions shall be obtained from National Institute of Standards and Technology (NIST), or other reliable commercial sources to verify the highest purity possible. The preparation and maintenance of standards and reagents will be accomplished according to the methods referenced. All standards and standard solutions are to be formally documented (i.e., in a logbook) and should identify the supplier, lot number, purity/concentration, receipt/preparation date, preparers name, method of preparation, expiration date, and any other pertinent information. All standard solutions shall be validated prior to use. Care shall be exercised in the proper storage and handling of standard solutions (e.g., separating volatile standards from nonvolatile standards). The laboratory shall continually monitor the quality of the standards and reagents through well documented procedures.

Balances - The analytical balances shall be calibrated and maintained in accordance with manufacturer specifications. Calibration is conducted with two Class AS" weights that bracket the expected balance use range. The laboratory shall check the accuracy of the balances daily and they must be properly documented in permanently bound logbooks.

Refrigerators/Freezers - The temperature of the refrigerators and freezers within the laboratory shall be monitored and recorded daily. This will verify that the quality of the standards and reagents is not compromised, and the integrity of the analytical samples is upheld. Appropriate acceptance ranges (2 to 6°C for refrigerators) shall be clearly posted on each unit in service.

Water Supply System - The laboratory must maintain a sufficient water supply for all project needs. The grade of the water must be of the highest quality (analyte-free) to eliminate false-positives from the analytical results. Ultraviolet cartridges or carbon absorption treatments are recommended for organic analyses and ion-exchange treatment is recommended for inorganic tests. Appropriate documentation of the quality of the water supply system(s) will be performed on a regular basis.

4.2 LABORATORY INSTRUMENTS

Calibration of instruments is required to verify that the analytical system is operating properly and at the sensitivity necessary to meet established quantitation limits. Each instrument for organic and inorganic analyses shall be calibrated with standards appropriate to the type of

instrument and linear range established within the analytical method(s). Calibration of laboratory instruments will be performed according to specified methods.

In addition to the requirements stated within the analytical methods, the contract laboratory will be required to analyze an additional low-level standard at or near the detection limits. In general, standards will be used that bracket the expected concentration of the samples. This will require the use of different concentration levels, which are used to demonstrate the instrument's linear range of calibration.

Calibration of an instrument must be performed prior to the analysis of any samples and then at periodic intervals (continuing calibration) during the sample analysis to verify that the instrument is still calibrated. If the contract laboratory cannot meet the method required calibration requirements, corrective action shall be taken. All corrective action procedures taken by the contract laboratory are to be documented, summarized within the case narrative, and submitted with the analytical results.

5.0 INTERNAL QUALITY CONTROL CHECKS

Internal QC checks are used to determine if analytical operations at the laboratory are in control, as well as determining the effect sample matrix may have on data being generated. Two types of internal checks are performed and are described as batch QC and matrix-specific QC procedures. The type and frequency of specific QC samples performed by the contract laboratory will be according to the specified analytical method and project specific requirements. Acceptable criteria and target ranges for these QC samples are presented within the referenced analytical methods.

QC results which vary from acceptable ranges shall result in the implementation of appropriate corrective measures, potential application of qualifiers, and/or an assessment of the impact these corrective measures have on the established data quality objectives. Quality control samples including any project-specific QC will be analyzed are discussed below.

5.1 BATCH QC

Method Blanks - A method blank is defined as laboratory-distilled or deionized water that is carried through the entire analytical procedure. The method blank is used to determine the level of laboratory background contamination. Method blanks are analyzed at a frequency of one per analytical batch.

Matrix Spike Blank Samples - A matrix spike blank (MSB) sample is an aliquot of water spiked (fortified) with all the elements being analyzed for calculation of precision and accuracy to verify that the analysis that is being performed is in control. An MSB will be performed for each matrix and organic parameter only.

5.2 MATRIX-SPECIFIC QC

Matrix Spike Samples - An aliquot of a matrix is spiked with known concentrations of specific compounds as stipulated by the methodology. The matrix spike (MS) and matrix spike duplicate (MSD) are subjected to the entire analytical procedure to assess both accuracy and precision of the method for the matrix by measuring the percent recovery and relative percent difference of the two spiked samples. The samples are used to assess matrix interference effects on the method, as well as to evaluate instrument performance. MS/MSDs are analyzed at a frequency of one each per 20 samples per matrix.

Matrix Duplicates - The matrix duplicate (MD) is two representative aliquots of the same sample which are prepared and analyzed identically. Collection of duplicate samples provides for the evaluation of precision both in the field and at the laboratory by comparing the analytical results of two samples taken from the same location. Obtaining duplicate samples from a soil matrix requires homogenization (except for volatile organic compounds) of the sample aliquot prior to filling sample containers, to best achieve representative samples. Every effort will be made to obtain replicate samples; however, due to interferences, lack of homogeneity, and the nature of the soil samples, the analytical results are not always reproducible.

Rinsate (Equipment) Blanks - A rinsate blank is a sample of laboratory demonstrated analyte-free water passed through and over the cleaned sampling equipment. A rinsate blank is used to indicate potential contamination from ambient air and from sample instruments used to collect and transfer samples. This water must originate from one common source within the laboratory and must be the same water used by the laboratory performing the analysis. The rinsate blank should be collected, transported, and analyzed in the same manner as the samples acquired that day. Rinsate blanks for nonaqueous matrices should be performed at a rate of 10 percent of the total number of samples collected throughout the sampling event. Rinse blanks will not be performed on samples (i.e., groundwater) where dedicated disposable equipment is used.

Trip Blanks - Trip blanks are not required for nonaqueous matrices. Trip blanks are required for aqueous sampling events. They consist of a set of sample bottles filled at the laboratory with laboratory demonstrated analyte free water. These samples then accompany the bottles that are prepared at the lab into the field and back to the laboratory, along with the collected samples for analysis. These bottles are never opened in the field. Trip blanks must return to the lab with the same set of bottles they accompanied to the field. Trip blanks will be analyzed for volatile organic parameters. Trip blanks must be included at a rate of one per volatile sample shipment.

6.0 CALCULATION OF DATA QUALITY INDICATORS

6.1 PRECISION

Precision is evaluated using analyses of a field duplicate or a laboratory MS/MSD that indicate analytical precision through the reproducibility of the analytical results. RPD is used to evaluate precision by the following formula:

$$RPD = \frac{(X_1 - X_2)}{[(X_1 + X_2)/2]} \times 100\%$$

where:

X_1 = Measured value of sample or matrix spike

X_2 = Measured value of duplicate or matrix spike duplicate

Precision will be determined using MS/MSD (for organics) and matrix duplicates (for inorganics) analyses.

6.2 ACCURACY

Accuracy is defined as the degree of difference between the measured or calculated value and the true value. The closer the numerical value of the measurement comes to the true value or actual concentration, the more accurate the measurement is. Analytical accuracy is expressed as the percent recovery of a compound or element that has been added to the environmental sample at known concentrations before analysis. Analytical accuracy may be assessed using known and unknown QC samples and spiked samples. It is presented as percent recovery. Accuracy will be determined from matrix spike, matrix spike duplicate, and matrix spike blank samples, as well as from surrogate compounds added to organic fractions (i.e., volatiles, semivolatiles, PCB), and is calculated as follows:

$$\text{Accuracy (\%R)} = \frac{(X_s - X_u)}{K} \times 100\%$$

where:

X_s - Measured value of the spike sample

X_u - Measured value of the unspiked sample

K - Known amount of spike in the sample

6.3 COMPLETENESS

Completeness is calculated on a per matrix basis for the project and is calculated as follows:

$$\text{Completeness (\%C)} = \frac{(X_v - X_n)}{N} \times 100\%$$

where:

X_v - Number of valid measurements

X_n - Number of invalid measurements

N - Number of valid measurements expected to be obtained

7.0 CORRECTIVE ACTIONS

Laboratory corrective actions shall be implemented to resolve problems and restore proper functioning to the analytical system when errors, deficiencies, or out-of-control situations exist at the laboratory. Full documentation of the corrective action procedure needed to resolve the problem shall be filed in the project records, and the information summarized in the case

narrative. A discussion of the corrective actions to be taken is presented in the following sections.

7.1 INCOMING SAMPLES

Problems noted during sample receipt shall be documented by the laboratory. The Project Manager shall be contacted immediately for problem resolution. All corrective actions shall be documented thoroughly.

7.2 SAMPLE HOLDING TIMES

If any sample extraction or analyses exceed method holding time requirements, the Project Manager shall be notified immediately for problem resolution. All corrective actions shall be documented thoroughly.

7.3 INSTRUMENT CALIBRATION

Sample analysis shall not be allowed until all initial calibrations meet the appropriate requirements. All laboratory instrumentation must be calibrated in accordance with method requirements. If any initial/continuing calibration standards exceed method QC limits, recalibration must be performed and, if necessary, reanalysis of all samples affected back to the previous acceptable calibration check.

7.4 REPORTING LIMITS

The laboratory must meet the method required detection limits listed in NYSDEC ASP, 10/95 criteria. If difficulties arise in achieving these limits due to a sample matrix, the laboratory must notify PEI project personnel for problem resolution. To achieve those detection limits, the laboratory must utilize all appropriate cleanup procedures to retain the project required detection limits. When any sample requires a secondary dilution due to high levels of target analytes, the laboratory must document all initial analyses and secondary dilution results. Secondary dilution will be permitted only to bring target analytes within the linear range of calibration. If samples are analyzed at a secondary dilution with no target analytes detected, the Project Manager will be immediately notified so that appropriate corrective actions can be initiated.

7.5 METHOD QC

All QC method-specified QC samples shall meet the method requirements referenced in the analytical methods. Failure of method-required QC will result in the review and possible qualification of all affected data. If the laboratory cannot find any errors, the affected sample(s) shall be reanalyzed or re-extracted/redigested, then reanalyzed within method-required holding times to verify the presence or absence of matrix effects. If matrix effect is confirmed, the corresponding data shall be flagged accordingly using the flagging symbols and criteria. If matrix effect is not confirmed, then the entire batch of samples may have to be reanalyzed or re-extracted/redigested, then reanalyzed at no cost. Project Manager shall be notified as soon as possible to discuss possible corrective actions should unusually difficult sample matrices be encountered.

7.6 CALCULATION ERRORS

All analytical results must be reviewed systematically for accuracy prior to submittal. If upon data review calculation or reporting errors exist, the laboratory will be required to reissue the analytical data report with the corrective actions appropriately documented in the case narrative.

8.0 DATA REDUCTION, VALIDATION, AND USABILITY

8.1 DATA REDUCTION

Laboratory analytical data are first generated in raw form at the instrument. These data may be either in a graphic or printed tabular format. Specific data generation procedures and calculations are found in each of the referenced methods. Analytical results must be reported consistently. Identification of all analytes must be accomplished with an authentic standard of the analyte traceable to NIST or USEPA sources. Individuals experienced with an analysis and knowledgeable of requirements will perform data reduction.

8.2 DATA VALIDATION

Third party Data validation is required and is a systematic procedure of reviewing a body of data against a set of established criteria to provide a specified level of assurance of validity prior to its intended use. All analytical results from soil and groundwater samples will have ASP Category B deliverables and DUSRs. The data validation will be in accordance with DER-10 Section 2.2 with ASP - Category B data deliverables provided by the laboratory and a DUSR provided for validation. Where possible, discrepancies will be resolved by the project manager.

- Technical holding times will be in accordance with NYSDEC ASP, 7/2005 edition.
- Organic calibration and QC criteria will be in accordance with NYSDEC ASP, 7/2005 edition. Data will be qualified if it does not meet NYSDEC ASP, 7/2005 criteria.

9.0 REFERENCES

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Quality Assurance Manual, Final Copy, Revision I, October 1989.

National Enforcement Investigations Center of USEPA Office of Enforcement. *NEIC Policies and Procedures*. Washington: USEPA.

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Sampling, Analysis, and Assessment of PFAS under NYSDEC’s Part 375 Remedial Programs document, dated June 2021.

Part 375 Metals (ICP)

EPA 6010C

Analyte

Arsenic
Barium
Beryllium
Cadmium
Chromium
Copper
Lead
Manganese
Nickel
Selenium
Silver
Zinc
Mercury EPA 7471B
Cyanide, Total EPA 9014

PCBs EPA 7471B

PCB-1016
PCB-1221
PCB-1232
PCB-1242
PCB-1248

Chlorinated Pesticides

EPA 8081B/ Herbicides EPA 8151

4,4-DDD
4,4-DDE
4,4-DDT
Aldrin
alpha-BHC
beta-BHC
cis-Chlordane
delta-BHC
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan Sulfate
Endrin
Endrin Aldehyde
Endrin Ketone
gamma-BHC (Lindane)
Heptachlor
Heptachlor Epoxide
Methoxychlor
Toxaphene
trans-Chlordane
2,4,5-TP Acid (Silvex)

TABLE 2
ANALYTE LIST

Semi-Volatile Organics
(Acid/Base Neutrals)

EPA 8270D

1,1-Biphenyl
1,2,4,5-Tetrachlorobenzene
1,2,4-Trichlorobenzene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2,2-Oxybis (1-chloropropane)
2,3,4,6-Tetrachlorophenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
2-Chloronaphthalene
2-Chlorophenol
2-Methylnaphthalene
2-Methylphenol
2-Nitroaniline
2-Nitrophenol
3&4-Methylphenol
3,3'-Dichlorobenzidine
3-Nitroaniline
4,6-Dinitro-2-methylphenol
4-Bromophenyl phenyl
4-Chloro-3-methylphenol
4-Chloroaniline
4-Chlorophenyl phenyl ether
4-Nitroaniline
4-Nitrophenol
Acenaphthene
Acenaphthylene
Acetophenone
Anthracene
Atrazine
Benzaldehyde
Benzo (a) anthracene
Benzo (a) pyrene
Benzo (b) fluoranthene
Benzo (g,h,i) perylene
Benzo (k) fluoranthene
Bis (2-chloroethoxy) methane
Bis (2-chloroethyl) ether
Bis (2-ethylhexyl) phthalate
Butylbenzylphthalate
Caprolactam

QA/QC Plan

Carbazole
Chrysene
Dibenz (a,h) anthracene
Dibenzofuran
Diethyl phthalate
Dimethyl phthalate
Di-n-butyl phthalate
Di-n-octylphthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno (1,2,3-cd) pyrene
Isophorone
Naphthalene
Nitrobenzene
N-Nitroso-di-n-propylamine
N-Nitrosodiphenylamine
Pentachlorophenol
Phenanthrene
Phenol
Pyrene

Volatile Organics

EPA 8260C

1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-Chloropropane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,4-dioxane
2-Butanone
2-Hexanone
4-Methyl-2-pentanone
Acetone
Benzene
Bromochloromethane
Bromodichloromethane

TABLE 2 (Continued)

***Volatile Organics
(Continued)***

Bromomethane
Carbon disulfide
Carbon Tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Cyclohexane
Dibromochloromethane
Dichlorodifluoromethane
Ethylbenzene
Freon 113
Isopropylbenzene
m,p-Xylene
Methyl acetate
Methyl tert-butyl Ether
Methylcyclohexane
Methylene chloride
Naphthalene
n-Butylbenzene
n-Propylbenzene
o-Xylene
p-Isopropyltoluene
sec-Butylbenzene
Styrene
tert-Butylbenzene
Tetrachloroethene
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Trichlorofluoromethane
Vinyl chloride

Volatiles-Air - TO-15

Acetone
Benzene
Carbon disulfide
Chloromethane
Dichlorodifluoromethane
Ethanol
Ethylbenzene
Ethyl Acetate
4-Ethyltoluene
Heptane
Hexane
Isopropyl Alcohol
Methylene chloride
Methyl ethyl ketone
Propylene
1,1,1-Trichloroethane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
2,2,4-Trimethylpentane
Tertiary Butyl Alcohol
Tetrachloroethylene
Toluene
Trichloroethylene
Trichlorofluoromethane
m,p-Xylene
o-Xylene
Xylenes (total)
Acetone
Benzene
Carbon disulfide
Chloromethane
Dichlorodifluoromethane
Ethanol
Ethylbenzene
Ethyl Acetate
4-Ethyltoluene
Heptane
Hexane
Isopropyl Alcohol
Methylene
Methyl ethyl ketone
Propylene
1,1,1-Trichloroethane

PFAS ANALYTE LIST

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	Perfluorobutanesulfonic acid	PFBS	375-73-5
	Perfluorohexanesulfonic acid	PFHxS	355-46-4
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanesulfonic acid	PFOS	1763-23-1
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	PFHpA	375-85-9
	Perfluorooctanoic acid	PFOA	335-67-1
	Perfluorononanoic acid	PFNA	375-95-1
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7	
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluorooctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

TABLE 3 - ANALYTICAL METHODS & PROCEDURES SUMMARY

Groundwaters

Analyte(s)	Method	Preservation	Holding Time	Container
Volatile Organics	8260	HCl to pH <2, cool to ≤6°C	14 days	2 - 40 ml septum sealed vials
Semivolatile Organics	8270	cool to ≤6°C	Samples extracted within 7 days and extracts analyzed within 40 days following extraction	1 liter amber with Teflon lined cap
Organochlorine Pesticides	8081	cool to ≤6°C		1 liter amber with Teflon lined cap
Chlorinated Herbicides (silvex)	8151	cool to ≤6°C		1 liter amber with Teflon lined cap
PCBs	8082	cool to ≤6°C		1 liter amber with Teflon lined cap
ICP Metals	6010	HNO3 to pH <2	6 months	250 ml. plastic
Mercury	7470	HNO3 to pH <2	28 days	250 ml. plastic
Hexavalent Chromium	7196	cool to ≤6°C	24 hours	125 ml. plastic
Cyanide, Total	9010	NaOH to pH >12, cool to ≤6°C	14 days	250 ml. plastic
PFAS	537M	cool to ≤6°C	Samples extracted within 14 days and extracts analyzed within 28 days following extraction	250 ml. HDPE
1,4-Dioxane	8270 SIM	cool to ≤6°C	Samples extracted within 7 days and extracts analyzed within 40 days following extraction	1 liter amber with Teflon lined cap

Soils

Analyte(s)	Method	Preservation	Holding Time	Container
Volatile Organics	8260	cool to ≤6°C	14 days	4 oz. widemouth glass with Teflon lined cap
Semivolatile Organics	8270	cool to ≤6°C	Samples extracted within 14 days and extracts analyzed within 40 days following extraction	4 oz. widemouth glass with Teflon lined cap
Organochlorine Pesticides	8081	cool to ≤6°C		4 oz. widemouth glass with Teflon lined cap
Chlorinated Herbicides (silvex)	8151	cool to ≤6°C		4 oz. widemouth glass with Teflon lined cap
PCBs	8082	cool to ≤6°C		4 oz. widemouth glass with Teflon lined cap
ICP Metals	6010	none	6 months	4 oz. widemouth glass with Teflon lined cap
Mercury	7471	cool to ≤6°C	28 days	4 oz. widemouth glass with Teflon lined cap
Hexavalent Chromium	3060/7196	cool to ≤6°C	30 days to extraction 7 days from extraction to analysis	4 oz. widemouth glass with Teflon lined cap
Cyanide, Total	9012	cool to ≤6°C	14 days	4 oz. widemouth glass with Teflon lined cap
PFAS	537M	cool to ≤6°C	Samples extracted within 14 days and extracts analyzed within 40 days following extraction	250 ml. HDPE
1,4-Dioxane	8270 SIM	cool to ≤6°C	Samples extracted within 7 days and extracts analyzed within 40 days following extraction	4 oz. widemouth glass with Teflon lined cap

Appendix D

Field Sampling Plan

FIELD SAMPLING PLAN

CURTISS MALT HOUSE PROJECT
1100 NIAGARA STREET
BUFFALO, NEW YORK 14213
NYSDEC SITE NO. C915382

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April 2025

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1.0 INTRODUCTION

This Field Sampling Plan (FSP) provides procedures for the field activities designed in the Work Plan where soil, groundwater, and vapor sampling are required at the Site. The field procedures presented in this manual should be followed by all field personnel, as adherence can help to ensure the quality and usability of the data collected. The FSP should be used collectively with and comply with the following documents:

- The HASP.
- The QA/QC Plan.
- The RI Work Plan.

PFAS sampling and analysis should be done in accordance with the NYSDEC document: “Sampling, Analysis, and Assessment of PFAS under NYSDEC’s Part 375 Remedial Programs document, dated October 2020.” This document is to be used with both soil and groundwater samples.

All field equipment requiring calibration will be calibrated per, and at the frequency, recommended by the equipment manufacturer.

2.0 SOIL SAMPLING

Soil samples are obtained as outlined in the Work Plan, considering the following general protocol:

1. Inspect newly created test pit or boring core stratigraphy once obtained in/from the subsurface.
2. Sample soil, and record depth and any physical characteristics (e.g., contamination, odor, discoloration, debris, etc.) in the logbook.
3. Quickly place the calibrated PID into the exposed soil and record the instrument readings in the logbook.
4. Samples should be collected at locations and frequency per the Work Plan and QA/QC Plan.
5. Decontaminate sampling implements after use and between sample locations. In most cases, dedicated sampling equipment is utilized thereby eliminating equipment decontamination. If dedicated equipment is not used, “dry” decontamination will be applied and “wet” as necessary.
6. Label each sample container with the appropriate sample identification and place the sample in a cooler (cooled to 4 degrees C.) for shipment to the laboratory.
7. Initiate chain-of-custody procedures.

2.1 TEST PIT PROCEDURES

Test pit sampling is a standard method of soil sampling to obtain representative samples for identification as well as to serve as a means of obtaining a significant information about the subsurface. The following steps describe the procedures for test pit operations.

2.1.1 *Field Preparation*

1. Verify underground utilities have been found.



2. Review scope of work, safety procedures and communication signals with site personnel.
3. Pre-clean the sampling equipment prior to use, as necessary.
4. Mark and review trench locations. Specific locations are determined in the field and are selected based on areas of visible or potential surface contamination or debris, pre-determined locations representing specific Site areas, and field obstructions.

2.1.2 *Excavation and Sample Collection*

1. Position backhoe/equipment into appropriate area considering direction of excavation, obstructions, safety concerns, etc.
2. Commence excavation with the backhoe upwind of the excavation, as possible.
3. Ensure continuous air monitoring has been activated.
4. Screen soil regularly for VOCs as excavation progresses and soil is stockpiled.
5. As directed by field technician for each test trench, topsoil, or cover soil (if any) is excavated and placed on poly/plastic sheeting.
6. Soil/material below the topsoil is excavated to the depth as directed by field technician and placed on poly/plastic sheeting separate from the topsoil/cover soil.
7. Segregate 'clean' material from impacted material, as possible, using visual observations and PID screening.
8. Record geologic log as trenches are excavated visually inspecting subsurface material for discoloration or staining and documenting pit/trench with photos. The following information will be recorded for each test pit log:
 - Depth, length, and width of the excavation.
 - Description of each lithological unit including depth and thickness of distinct soil, fill, or rock layers.
 - Description of any man-made impacts or apparent contamination.
 - Depth to groundwater and bedrock, if encountered.
9. Collect soil samples using dedicated stainless-steel spoons directly from the bucket of the backhoe at ground surface. No personnel shall enter the excavation to collect samples unless provisions in the HASP have been addressed for entering an excavation.
10. Place each soil sample directly into appropriate sample bottles/jars.
11. Clearly label the sample bottles and jars.
12. Place each jar in an ice-filled cooler.
13. Ship samples to the laboratory as soon as possible, but no later than 24 hours after collection.
14. Document the types and numbers of samples collected on Chain-of-Custody.
15. Record time and date of sample collection and a description of the sample and any associated air monitoring measurements in the field logbook.
16. After sampling, backfill and compact (e.g., bucket and equipment tracks/wheels) the excavated material from each trench or pit prior to moving to the next location.
17. Backfill with indigenous soil in the order in which the material was removed with the topsoil/cover soil placed last to cover the trench, placing impacted material at bottom of pit/trench and covering with 'clean' material.
18. Decontaminate sampling and excavation equipment between sampling locations (i.e., if not dedicated) and at completion over top of excavation area using dry methods initially and steam cleaning, as needed.

2.2 GEOPROBE PROCEDURES

Geoprobe direct push sampling is a standard method of soil sampling to obtain representative samples from the subsurface. Field preparation, sample collection, and data logging activities for Geoprobe sampling are identical to that of test pitting/trenching listed above. The following procedures detail activities, as directed by the field technician, for the execution of Macro Core drilling operations after rig is in a downwind position and continuous air monitoring and VOC screening activities have commenced:

1. Startup drill rig and raise mast.
2. Use star bit with rig in rotary setting to penetrate pavement (if applicable).
3. Excavate a hole large enough to set a road box before you advance the borehole (if applicable).
4. Unthread the shoe from the bottom of the sample tube and inset a sample liner and rethread the shoe on the bottom of the sample tube.
5. Thread the drive cap on the top of the sample tube.
6. Align the sample tube so it is plumb in both directions to ensure a straight borehole is drilled.
7. Drive the top of the sample tube into the ground surface.
8. Unthread the drive cap from the top of the sample tube and thread the pull cap in its place.
9. Pull the sample tube from the ground using caution to not pinch your hand between the drill rods, pull cap, or rig.
10. Unthread the cutting shoe and pull the sample liner from the bottom of the sample tube. Use pliers to reach in the sample tube and grab the liner, if needed.
11. Cut the sample liner lengthwise in two places and present the sample on a table or plastic sheeting (or similar) to ensure all sample material is contained.
12. Insert a new liner and thread on the cutting shoe and repeat steps from #4 to #11 with the addition of a 4-foot long drill rod onto the top of the sample tube to advance a second 4-foot interval.
13. Proceed with this procedure until the desired depth or refusal is reached.
14. Upon completion of probing, decontaminate all equipment in contact with the soil/fill in a decontamination area using Alconox and water.
15. Fill used to backfill boreholes for the native soil portion will consist of bentonite pellets or chips. Sand may be used for backfill of the fill layer. Alternatively, the entire core hole may be backfilled with bentonite.

Reference: American Society for Testing Material (ASTM), 1992, ASTM D1586-84, Standard Method for Penetration Test and Split Barrel Sampling of Soils.

2.3 HOLLOW-STEM AUGER PROCEDURES

As a prelude to and throughout the drilling process, stabilize the drill rig and raise the drill rig mast. Attach an initial assembly of hollow-auger components to the rotary drive of the drill rig.

***NOTE 1**—The drill rig, drilling and sampling tools, the rotary gear or chain case, the spindle, and components of the rotary drive above the auger column should be cleaned and decontaminated prior to drilling. Lubricated rotary gear or chain cases should be monitored for leaks during drilling. Lubricants used should be documented. Lubricants with organic or metallic constituents that could be interpreted as contaminants if detected in a soil or water sample should not be used on auger couplings. Instances of potential contamination should be documented.*

Push the auger-column assembly below the ground surface and initiate rotation at a low velocity.

NOTE 2—*If surface contamination is suspected, special drilling procedures may be needed to deter transport of contaminated materials downhole. For example, the augers and auger head may be removed and cleaned following drilling of the initial increments. Complete removal of the augers from a boring may allow caving and cross contamination of materials (especially below the water table). When augers are reinserted, attempts should be made to note if caving or sloughing, or both, has occurred in the borehole and the information documented.*

Continue drilling, usually at a rotary velocity of about 50 to 100 r/min, and to a depth where intermittent sampling or in situ testing is needed, or until the drive assembly is advanced to within about 0.15 to 0.45 m [6 to 18 in.] of the ground surface. Soil/sediment sampling is usually accomplished by either of two methods: (1) removing the pilot assembly, if being used, and inserting and driving a sampler through the hollow-stem of the auger column, or (2) using a continuous sampling device within the lead auger section. In the latter case, the sampler barrel fills with material as the hollow-auger column is advanced. It should be noted that the pilot assembly and sampling devices should be cleaned and decontaminated after each use and prior to reinsertion in the hollow-auger column. Water sampling can also be done through the hollow-stem augers when using augers with watertight connections to prevent fluid leakage from occurring at the connections: (1) by allowing the auger column to fill with water through the use of a screened lead auger section; (2) by allowing the auger column to fill from the bottom; (3) by using a soil-penetrating water sampling device that can be lowered into the hollow-auger column and either driven, rotated, or pushed out through the bottom or lead auger into the undisturbed material below the auger head.

NOTE 3—*Under some circumstances it may be effective to drill without using a pilot assembly. If a pilot assembly is not used, however, and water is not injected into the auger column simultaneously with advancement, material will often enter the hollow-stem of the auger column. The addition of water to the auger column during drilling may deter material entrance but, on the other hand, may also affect both the mechanical and chemical characteristics of soil/sediment samples and the quality of water samples. Therefore, if water is added and the chemistry determined, the approximate volume(s) added over specific intervals and the water chemistry should be documented.*

Accomplish drilling at greater depths by attaching additional hollow-auger sections to the top of the previously advanced hollow-auger column assembly.

NOTE 4—*Cuttings are removed periodically from around the top of the auger column. Soil cuttings above the groundwater may be representative of geologic materials being penetrated if proper cuttings-return rates are maintained. Cuttings from below the groundwater surface are likely to be mixed from varying formations in the hole and are usually not representative of deposits at the end of the auger. If cuttings are sampled for classification and relation to lithology report and document the intervals sampled. If drilling is performed in contaminated soil/sediment and cuttings control is needed, drilling through a hole in a sheet of plywood or similar material held securely above the borehole by the stabilizing jacks of the drill rig will usually facilitate cuttings control. Containment and disposal of contaminated and potentially contaminated drilling fluids and associated cuttings should be in accordance with applicable regulations.*

When drilling must progress through geologic materials suspected of being contaminated, installation of single or multiple (nested) casings may be needed to isolate zones of suspected contamination. Install isolation casings in a pre-drilled borehole or by using a casing

advancement method. However, when attempting to auger inside the casing, the column of cuttings return may cause the augers to bind in the casing. Then install a grout seal usually by applying the grout at the bottom of the annulus with the aid of a tremie pipe, and a grout shoe or a grout packer. Allow the grout to set before drilling activities are continued.

Reference: American Society for Testing Material (ASTM), ASTM D5784, Standard Guide for Use of Hollow-Stem Augers for Geoenvironmental Exploration and the Installation of Subsurface Water Quality Monitoring Devices

3.0 GROUNDWATER SAMPLING

3.1 WELL INSTALLATION PROCEDURES

The following procedure outlines a NYSDEC-approved method of constructing groundwater wells within unconsolidated material to monitor groundwater elevation and acquiring groundwater samples for laboratory testing. The well screen is 4" Schedule 40 pipe with 0.010 slot size. The following is a step-by-step method for the open-hole method of installing a groundwater well once a boring or augured hole has been drilled to a desired depth within the subsurface:

1. Thread a cap on the bottom section of the well screen. If more than one section of the well screen is required, thread the last section.
2. Lower the screen into the borehole with the riser section ready.
3. Add the riser sections to the screen. Do not drop the screen in the borehole.
4. Add riser sections as required until the bottom screen section touches the bottom of the borehole.
5. If completing the well with a road box, mark the riser two inches below the lid of the road box and then cut the riser.
6. Place a slip cap over the top of the rise section.
7. Place sand in the space between the borehole and the PVC screen and riser to the required depth. Place the sand in very slowly so it does not bridge in the well bore.
8. Place bentonite and cement above the sand-pack.
9. Grout in the road box with concrete mix.

3.2 WELL DEVELOPMENT PROCEDURES

At least 24 hours after completion of drilling and installation, well development is completed through pumping or bailing until the discharged water is relatively sediment free and the indicator parameters (e.g., pH, temperature, specific conductivity, etc.) have reached steady-state. Development removes sediment and can improve the hydraulic properties of the sand pack. The effectiveness of this process is monitored to minimize the volume of discharged waters to obtain sediment-free samples. As approved by the regulatory agency, well development water can be discharged onto the ground surface downgradient of the well. Otherwise, this water must be containerized and sampled prior to discharge or disposal.

1. Select an appropriate well development method based upon water depth, well productivity, and sediment content of the water. Well development options include: (a) bailing; (b) manual pumping; and (c) submersible pumps. These options are utilized with surging of the well screen using an appropriately sized surge block.

2. Decontaminate, as needed, and assemble equipment in the monitoring well based upon the method selected. Care should be taken not to introduce contaminants into the equipment or well during installation.
3. Proceed with development by repeated removal of water from the well until the discharged water is relatively sediment-free (i.e., < 50 NTUs). Volume of water removed pH and conductivity measurements are recorded on the Well Development/Purging Logs.

3.3 WELL PURGING PROCEDURES

To collect representative samples, groundwater wells must be adequately purged prior to sampling. Purging will require removing three to five volumes of standing water in rapidly recharging wells and at least one volume from wells with slow recharge rates. Sampling should commence as soon as adequate recharge has occurred. Although not required, it is recommended that purging and sampling occur at least 24 hours after development.

1. Remove well cover ensuring no foreign material enters the well.
2. Monitor the interior of the riser pipe for organic vapors using a PID. If a reading of greater than 5 ppm is recorded, the well will be vented until levels are below 5 ppm before pumping is started.
3. Measure the water level below top of casing using an electronic water level indicator.
4. Determine the volume of water within the well by knowing the total depth of the well.
5. Wash the end of the probe with soap and rinse with deionized water between wells.
6. Utilize dedicated, new polyethylene discharge and intake tubing (preferably ½ inch diameter HDPE and cannot use LDPE for emerging contaminants) for each well.
7. Purge using bailers until the required volume is removed. If the well purges to dryness and recharges within 15 minutes, water can be removed as it recharges. If the well purges to dryness and is greater than 15 minutes, purging is terminated.
8. Purge until at least 1 volume of water is removed, but 3-5 volumes of water is preferred if recharge is sufficiently fast.
9. Calculate well volumes and record measurements for pH, temperature, turbidity, and conductivity during the purging along with physical observations.

3.4 WELL SAMPLING PROCEDURES

1. Perform well sampling within 24 hours of purging if well has recovered sufficiently to sample. If sufficient volume for analytical testing cannot be obtained from a well or if recharge exceeds 24 hours, then DEC should be consulted on analytical priorities and validity of the sample.
2. Collect sample using bailers into appropriate containers.
3. Label sample bottles using a waterproof permanent marker per procedures outlined below.
4. Use verifiably clean sample bottles (containing required preservatives) and place samples on ice in coolers for transport to the analytical laboratory, who will certify bottles are analyte-free.
5. Initiate chain-of-custody.
6. Collect separate sample into a 120 milliliter (mL) plastic container to measure pH, conductivity, turbidity, and temperature in the field.
7. Record well sampling data field notebook and on the Well Development/Purging Log.

4.0 SAMPLE DOCUMENTATION

Each soil and groundwater sample is logged in a bound field notebook by the technician or geologist. Field notes should include, but are not limited to the following:

- descriptions of subsurface material encountered during sampling,
- sample numbers and types of samples recovered, and
- date and time of sampling event.

The technician or geologist also completes a daily drilling or sampling record and chains-of-custody for all samples collected that are being transported to the laboratory. Once the sampling program is complete, the geologist or technician transfers field notes/logs onto standard forms (e.g., boring logs, sampling logs, daily reports, etc.) to be included with the formal investigation report.

5.0 SAMPLING CONTAINER SELECTION

The selection of sample containers is based on the media being sampled and the required analysis. Container selection should be completed in advance of mobilizing into the field with close communications with the laboratory.

6.0 SAMPLE LABELING

The following procedure helps to prevent misidentification of samples and to clarify the location and purpose of environmental samples collected during the investigation:

1. Fix a non-removable (when wet) label to each container.
2. Wrap each sample bottle within 2-inch cellophane tape.
3. Write the following information with permanent marker on each label:
 - A. Site name
 - B. Sample identification
 - C. Project number
 - D. Date/time
 - E. Sampler's initials
 - F. Sample preservation
 - G. Analysis required

Each sample is assigned a unique identification alpha-numeric code, such as RR-ss1 or WS- TP1 (2-3'), where the abbreviations represent RR – River Road (site), surface sample 1 and Waste Site, test pit 1, obtained at 2-3' bgs. Other common abbreviations include the following:

- BH = Geoprobe Borehole
- SW = Surface Water
- SED = Sediment
- SB = Soil Boring
- MSB = Matrix Spike Blank
- NSS = Near Surface Soil (1' - 2' depth)
- EB = Equipment Rinse Blank

- HW = Hydrant Water (Decon/Drilling Water)
- GW = Groundwater
- TB = Trip Blank
- RB = Rinse Blank
- MS/MSD =Matrix Spike/Matrix Spike Duplicate

7.0 SAMPLE SHIPPING

Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody procedures. Chain-of-custody procedures are essential for (1) presenting analytical results in a legal or regulatory forum (e.g., evidence in litigation or administrative hearings), (2) minimizing loss or misidentification of samples, and (3) ensuring that unauthorized persons do not tamper with collected samples.

The following chain-of-custody guidelines should be utilized during sample collection as outlined in and prepared by the National Enforcement Investigations Center (NEIC) Policies and Procedures of the USEPA Office of Enforcement:

- 1) Complete chain-of-custody record with all relevant information.
- 2) Send original chain with the samples in a sealed, waterproof bag taped inside the sample cooler.
- 3) Place adequate inert cushioning material (e.g., corrugated plastic, polypropylene foam wrap, etc.) in bottom of cooler.
- 4) Place bottles in cooler so they do not touch (use cushioning material for dividers).
- 5) Place VOA vials in sealed/waterproof bags in the center of the cooler.
- 6) Pack cooler with ice in sealed/waterproof plastic bags.
- 7) Pack the cooler with cushioning material.
- 8) Place any additional paperwork in sealed bag with original chain.
- 9) Tape cooler drain shut.
- 10) Wrap cooler with packing tape at two locations to secure lid. Do not cover labels.
- 11) Place lab address on top of cooler.
- 12) Ship samples via overnight carrier the same day that they are collected.
- 13) Label cooler with "This side up" on all sides and "Fragile" on at least two sides.
- 14) Fix custody seals on front right and left of cooler and cover with packaging tape.

8.0 SOIL VAPOR INTRUSION SAMPLING

Soil vapor intrusion (SVI) investigation consist of sampling contaminant vapors that may exist beneath the building slabs, inside the buildings, and outside the buildings. Sample collection includes the following procedures per New York State Department of Health *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*.

8.1 SUB-SLAB AIR SAMPLING PROCEDURES

8.1.1 Sampling Locations

Select the sub-slab sample collection points by observing the condition of the building floor slab for apparent penetrations such as concrete floor cracks, floor drains, or sump holes. The floor conditions will be noted, and potential locations of subsurface probes will be selected. The locations will ideally be away from the foundation walls, apparent penetrations, and buried pipes.

8.1.2 Sampling Probes

Construct a sampling probe using a ¼-inch Swagelok union connected to a short length of ¼-inch diameter stainless steel tubing. Select a length of stainless-steel tubing so that the bottom of the probe is close to but does not extend below the bottom of the slab (typically a 4-inch probe for a 6-inch thick (slab).

Attach a 2 ft. length of Teflon or polyethylene tubing to the other end of the union using a ¼-inch Swagelok nut and ferrules. Plug up the other end of the tubing with a small piece of modeling clay to seal the system and prevent air flow in or out of the sub slab while the probe and tubing sits idle.

8.1.3 Installation of the Sampling Probe

Drill through and about 1 inch below the concrete slab using a portable coring drill and 2-inch diameter core drill bit. Record the thickness of the concrete slab. When installing the probe, first put a few inches of driller's sand at the bottom of the cored hole so that the grout will sit on top of the sand and not go all the way to the bottom of the hole and plug the probe inlet.

Install the probe into the hole, with the tubing already attached. Use the tubing to hold the union at the correct height in the hole (just below the top). Mix hydraulic cement and water in a ziplock bag. Cut a hole in one corner of the bag and use it like a pastry chef's bag to grout the probe in place. Use a small rod to push/tap in the grout. Leave the top 1-inch or so of the hole unfilled, being sure that the threaded top of the union (where the tubing attaches) is above the cement. Allow the probe to sit in place for at least one hour to allow the cement to set. If possible, install the probe one day and allow it to sit overnight.

8.1.4 Helium Tracer Gas Testing

Place a 2-quart (or similar size) bucket over the sample probe after threading the Teflon sample tube through a hole in the top of the bucket. Seal the tube to the bucket with clay. The bucket should also have another hole drilled in the top for the injection of helium, and a hole in the side near the floor for the measurement of helium gas concentrations.

Connect helium (99.999% pure) cylinder tubing to the top port of bucket enclosure and seal with clay or other sealing material. Insert a helium detector probe in the bottom port of the bucket. Release enough helium to displace any ambient air in the bucket until the concentration of helium reaches a minimum of 90%. Maintain this minimum concentration by testing with a helium detector. The Helium cylinder should be open during the purge time to cause a slight positive pressure within the enclosure.

Connect the sample tubing to a GilAir vacuum pump or equivalent using 3/8-inch O.D. silicone tubing. Connect a 1-liter Tedlar bag to the outlet of the pump using silicone tubing and collect a

1-liter sample. Purging flow rates must not exceed 0.2 liters per minute (L/min). Analyze the Tedlar bag for helium using a helium detector and record the results on the Summa Canister Data Sheet. A concentration of helium 10% or greater indicates a poor seal of the sample probe and it must be reinstalled and retested. After purging, remove the bucket enclosure from over the sample probe.

8.1.5 Sample Collection

Assign sample identification to the Summa canister sample identification tag and record on chain of custody (COC), and the Summa Canister Data Sheet. Also record the Summa canister and flow controller (regulator) serial numbers on the COC and Summa Canister Data Sheet. Attach a pre-calibrated/certified 24-hour flow controller, and particulate filter to the Summa canister. Attach the sample tube to the Summa canister using a ¼-inch Swagelok nut with appropriate ferrules, to the end of the flow controller/particulate filter assembly. The sampling period will be 24 hours for mixed use residential/commercial.

Open canister valve to initiate sample collection and record sample start time, date, and initial canister vacuum on the canister identification tag and on the Summa Canister Data Sheet. If the canister does not show sufficient vacuum (generally less than 25"Hg), do not use. Take a digital photograph of canister setup and surrounding area. Include in the photograph a dry erase board or similar display which presents sample ID, location, and date.

After 24 hours, record sample end time and canister pressure on the Summa Canister Data Sheet, and close valve. Disconnect the Teflon tubing and remove flow controller/particulate filter assembly from canister. Seal canister with laboratory supplied brass plug. Ship the samples, with COCs, overnight, to the selected laboratory for standard TO-15 analysis.

8.1.6 Removing the Sample Probe

If the probe is to be reused, remove the ¼-inch tubing, and place a Swagelok cap on the exposed part of the union. The cap should be flush or below the level of the floor. If the probe is not to be reused, remove the probe by drilling around the probe with a hammer drill and a ¼ or 3/8-inch drill bit until loose. Keep the tubing attached to the implant to aid in its removal. Fill the core hole with hydraulic cement.

8.2 INDOOR/OUTDOOR AIR SAMPLING PROCEDURES

Place the indoor air Summa canister/flow controller inlet at breathing height in the approximate center of the space being sampled, or, for the outdoor air sample, elevated on a table or other object in a location upwind of the building being sampled. The breathing height is defined as four to six feet above the floor or ground. As an option, a length of Teflon tubing can be attached to the Summa canister/flow controller inlet and raised to breathing zone height.

Record the canister and flow controller serial numbers on the canister identification tag, COC and the Summa Canister Data Sheet. Assign sample identification to the canister identification tag, and record on the COC and the Summa Canister Data Sheet. Remove brass plug from canister fitting and save.

Attach a pre-calibrated/certified 24-hour flow controller and particulate filter to the Summa canister. For the outside air sample, also connect the laboratory supplied “candy cane” fitting to the flow controller. Open canister valve to initiate sample collection and record start time, date, and gauge vacuum reading on the canister identification tag and on the Summa Canister Data Sheet. Take a photograph of canister setup and surrounding area.

After 24 hours, record the gauge vacuum reading, close the Summa canister valve completely and record the end time on the Summa Canister Data Sheet. There should still be a slight vacuum in the Summa canister. If no vacuum remains in the canister, or the canister does not show a significant net loss in vacuum after sampling, the sample should be re-collected using a new Summa canister and flow controller. Disconnect any tubing and candy cane fittings from the Summa canister and remove the flow controller. Replace the brass plug on the canister. Ship canister, with COCs, overnight, to the selected laboratory

8.3 QUALITY CONTROL

The number of Quality Control samples (duplicates) to be taken during sub-slab sampling may be found in the QA/QC Plan. The duplicate sample rate is usually 10 percent. Field duplicates for sub-slab, indoor air and outdoor air samples will be collected by attaching the T-fitting supplied by the laboratory to two Summa canisters with attached regulators. For sub-slab samples, the inlet of the T-fitting will then be attached to the sub-slab sample tubing using a Swagelok fitting. For indoor and outdoor air samples, any tubing used to raise the sampling height will also be attached to the inlet of the T fitting. For sampling, both Summa canister valves are opened and closed simultaneously.

8.4 SAMPLE LABELING

Each sub-slab sample should have the following information at a minimum placed on the laboratory supplied sample label:

- Site name
- Sample identification – see below
- Date/time
- Sampler's initials
- Analysis required – **TO-15**

The serial number of the canister and regulator used during sampling is also noted on the Summa canister identification tag and on the COC. Each sub-slab, indoor air and outdoor air sample will be assigned a unique alpha-numeric code. An example of this code and a description of its components are presented below. Field duplicate samples will be assigned a unique identification alphanumeric code that specifies the date of collection, the letters FD (for field duplicate) and an ascending number that records the number of duplicate samples collected that day. For example, the first field duplicate collected on February 22, 2009 would be assigned the sample number in the format YYYYMMDD-FD-1 = 20090222-FD-1.

Subsequent duplicates collected on the same day will be assigned FD-2, FD-3 etc. Field sampling crew will record the duplicate sample information on the Summa Canister Data Sheets and in the field book.

8.5 FIELD DOCUMENTATION

Field notebooks are used during all on-site work. A dedicated field notebook is maintained by the field technician overseeing the site activities. Sub-slab sampling procedures should be photo-documented. The field sampling team will maintain sampling records that include the following data:

- Sample Identification
- Date and time of sample collection
- Identity of samplers
- Sampling methods and devices
- Purge volumes (soil vapor)
- Volume of soil vapor sample extracted
- The Summa canister vacuum before and after samples collected
- Chain of Custody and shipping information

The proper completion of the following forms/logs is considered correct procedure for documentation during the indoor air-sampling program:

1. Field Logbook - weather-proof hand-bound field book
2. Summa Canister Data Sheet
3. Chain of Custody Form

8.6 SAMPLE SHIPPING

Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody procedures. Chain-of-custody procedures are essential for presentation of sample analytical chemistry results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The following chain-of-custody guidelines should be utilized during sample collection as outlined in and prepared by the National Enforcement Investigations Center (NEIC) Policies and Procedures of the USEPA Office of Enforcement:

- Complete the chain-of-custody (COC) record with all relevant information.
- Ship original COC with the samples in a sealed waterproof plastic bag and place inside the box containing a Summa canister.
- Retain a copy of the COC for field records.
- Ship Summa canisters in the same boxes the laboratory used for shipping.
- Place the lab address on top of sample box/cooler.
- Fix numbered custody seals across box lid flaps and cooler lid.
- Cover seals with wide, clear tape.
- Ship samples via overnight carrier within three days of sample collection if possible.

9.0 Handling of Investigation Derived waste

Investigation derived waste (IDW) including drill cuttings/cores, well development/purge water, PPE and miscellaneous solid/liquid waste generated on site during the investigation phase that may be

impacted will be containerized on site in approved 55-gallon drums or approved equivalent. All containers will be properly managed, sampled (as necessary), labeled and disposed offsite per regulations. All containerized IDW as described above will be disposed offsite at a NYSDEC approved disposal and/or recycling facility. Miscellaneous non-impacted solid waste will be disposed of in an on-site dumpster.

Appendix E

DER-10 Imported Fill Requirements

5.4 Remedial Action Implementation Compliance

(e) Compliance for soil which exists at or is imported to a site. Soil which exists at, or is imported to, a site which is used to construct a soil cover, site cap system or as excavation backfill must meet the requirements of 6 NYCRR 375-6.7(d) and;

1. Soil imported to a site for use in a soil cap, soil cover or as backfill will:
 - i. comply with any RAOs which may be identified for a soil cover or the soil comprising a cap, by a remedy selected pursuant to Chapter 4.

- ii. be free of extraneous debris or solid waste;
- iii. be recognizable soil or other unregulated material as set forth in 6 NYCRR Part 360 and materials for which DEC has issued a beneficial use determination, which comply with the requirements of paragraph 2 below;
- iv. not exceed the allowable constituent levels for imported fill or soil as described in paragraph 2 below, unless a site-specific exemption is provided by DER in accordance with paragraph 8 below; and
- v. be tested as described in paragraph 3 below.

2. The fill material should not exceed the allowable constituent levels for imported fill or soil for the use of the site which are provided in Appendix 5, taking consideration that where the protection of ecological resources SCO is required for the site, the protection of ecological resources SCO must also be considered in selecting the lowest of the applicable SCGs. Where a compound is detected which is not on the Appendix 5 table the remedial party should:

- i. determine if the constituent of concern is included on the supplemental soil cleanup objective tables in CP-Soil and if so use the CP-Soil values as the allowable constituent level; or
- ii. consult with DER to determine an allowable constituent level.

3. Sampling is required for all imported soil for use as backfill or cover material. Sampling frequency of the material will be determined by the remedial design or remedial action work plan:

- i. considering Table 5.4(e)10 and paragraph 10 below, and sampling will be performed consistent with sections 2.1 through 2.3;
- ii. with a minimum one sample analyzed from every new source, at the following sampling frequency for:
 - (1) soil or sand imported from a virgin mine/pit, at least one round of characterization samples for the initial 100 cubic yards of material, in accordance with Table 5.4(e)10 below;
 - (2) material sources other than a virgin mine/pit (e.g., a former manufacturing site), in accordance with Table 5.4(e)10; or
 - (3) sites where large amounts of cover material/backfill are required, the sampling frequency can be reduced from that specified in Table 5.4(e)10 once a trend of compliance is established; and
- iii. the DER project manager may modify the number of samples required by subparagraph ii above based on the site being remediated and the source of the material, in accordance with the modification provisions set forth in section 1.6.

4. Reuse of soil from the site. Soil originating on the site may be reused on the site or exported for reuse provided sampling demonstrates compliance with SCGs as detailed in Table 5.4(e)4. Soil which is not going off-site for reuse will be disposed in a permitted treatment, storage or disposal facility, unless paragraph 10 below provides for such export.

Table 5.4(e)4 Reuse of Soil [for Paragraph 5.4(e)4]

Soil on the Site Meets:	Reuse on the Site:	Off-site Export & Reuse:
Unrestricted Soil SCGs	Without restrictions	Without restrictions
Meets the Applicable Use-based and Groundwater Protection SCG and where Appropriate Protection of Ecological Resources Soil SCGs for a Site w/ an IC & SMP.	In the soil cover/cap or as backfill within the area of the site subject to the IC.	Not Allowed, unless going to a site with IC subject to a 6 NYCRR Part 360 Beneficial Use Determination (BUD).
Meets Site-Specific Background Soil Levels.	Without restrictions. (Does not apply to sites in the BCP.)	Not Allowed, unless going to a site with IC subject to a 6 NYCRR Part 360 BUD.
Site-specific cleanup goals for subsurface soil	Placement below the soil cover/cap within the area of the site subject to the IC.	Not Allowed, unless going to a site with IC subject to a 6 NYCRR Part 360 BUD.

5. Material other than soil imported to a site. The following material may be imported, without chemical testing, to be used as backfill beneath pavement, buildings or as part of the final site cover, provided that it contains less than 10% by weight material which would pass through a size 80 sieve and consists of:

- i. gravel, rock or stone, consisting of virgin material from a permitted mine or quarry;
- or
- ii. recycled concrete or brick from a DEC registered construction and demolition debris processing facility if the material conforms to the requirements of Section 304 of the New York State Department of Transportation *Standard Specifications Construction and Materials Volume 1* (2002).

6. The remedial party must provide documentation of the source of fill to DER for approval of the source of the material before it is used on the site, which should include:

- i. the name of the person providing the documentation and relationship to the source of the fill;
- ii. the location where the fill was obtained;
- iii. identification of any state or local approvals as a fill source; and
- iv. if no prior approval is available for the source, a brief history of the use of the property which is the source of the fill.

7. Bills of lading should be provided to DER to document that the fill delivered was from a DER-approved source(s).

8. For all remedial programs except those developed pursuant to the BCP, DEC may issue a

site-specific exemption for one or more of the requirements set forth in this section, based upon site-specific conditions, such as:

- i. use and redevelopment of the site;
- ii. depth of the placement of the backfill material relative to the surface or subsurface structures;
- iii. depth of the placement of the backfill material relative to groundwater;
- iv. volume of backfill material;
- v. potential for odor from the backfill material;
- vi. presence of historic fill in the vicinity of the site;
- vii. DEC-issued beneficial use determination, pursuant to 6 NYCRR Part 360; or
- viii. background levels of contamination in areas surrounding the site.

9. For remedial programs pursuant to the BCP, DEC can only provide a site-specific exemption for backfill consistent with the provisions of paragraph 8 above as follows:

- i. for Track 2 and Track 3 cleanups, for soils greater than 15 feet below ground surface; or
- ii. for Track 4 cleanups, for soils beneath buildings, pavement and other improvements or for soils beneath the soil cover system or soil cap over exposed surface soils.

10. Sampling fill imported to or exported from a site. The remedial party will sample and analyze the fill being imported to the site in accordance with this subdivision and Table 5.4(e)10. Samples of the fill will be collected based on the soil quantity and type of constituents identified in the table and will be a combination of discrete and composite samples, handled as follows:

- i. for VOCs only, grab samples are allowed. These grab samples are one or more discrete samples taken from the fill, with the number as specified in the volatile column of Table 5.4(e)10 for the soil quantity in question, and analyzed for the VOCs identified in Appendix 5; or
- ii. for SVOCs, inorganics and PCBs/pesticides:
 - (1) one or more composite samples are collected from the volume of soil identified in Table 5.4(e)10 for analysis, with each composite from a different location in the fill volume;
 - (2) each composite is prepared by collecting discrete samples from 3 to 5 random locations from the volume of soil to be tested; and
 - (3) the discrete samples are mixed, and after mixing, a sample of the mixture is analyzed for the SVOCs, inorganic and PCBs/pesticide constituents identified in Appendix 5.

Table 5.4(e)10			
Recommended Number of Soil Samples for Soil Imported To or Exported From a Site			
Contaminant	VOCs	SVOCs, Inorganics & PCBs/Pesticides	
Soil Quantity (cubic yards)	Discrete Samples	Composite	Discrete Samples/Composite
0-50	1	1	3-5 discrete samples from different locations in the fill being provided will comprise a composite sample for analysis
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
➤ 1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with DER		

(f) Compliance for soil exported from a site for reuse. For soil that is being exported from a site to locations other than permitted disposal facilities, the handling requirements are set forth in this subdivision and in paragraph 5.4(e)4.

1. Levels of contamination must not exceed the lower of the groundwater and residential use levels as shown in Appendix 5, absent a beneficial use determination issued by DEC. DER will coordinate with the Division of Solid & Hazardous Materials (DSHM), prior to the start of the remedial action, relative to whether the exported soil can be used beneficially in accordance with 6 NYCRR 360-1. The sampling and analysis requirements are set forth in paragraph 5.4(e)10.

2. The number of required samples are specified in Table 5.4(e)10 and paragraph (e)10 above, which may be modified by the DER project manager based on various factors, including the location of the site receiving the soil.

(g) Compliance for the decommissioning of monitoring wells. All monitoring wells not required for site management should be decommissioned in accordance with paragraph (d)6 above prior to DER approval of the FER.

Appendix 5
Allowable Constituent Levels for Imported Fill or Soil
Subdivision 5.4(e)

Source: This table is derived from soil cleanup objective (SCO) tables in 6 NYCRR 375. Table 375-6.8(a) is the source for unrestricted use and Table 375-6.8(b) is the source for restricted use.

Note: For constituents not included in this table, refer to the contaminant for supplemental soil cleanup objectives (SSCOs) in the Commissioner Policy on [Soil Cleanup Guidance](#). If an SSCO is not provided for a constituent, contact the DER PM to determine a site-specific level.

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Metals					
Arsenic	13	16	16	16	13
Barium	350	350	400	400	433
Beryllium	7.2	14	47	47	10
Cadmium	2.5	2.5	4.3	7.5	4
Chromium, Hexavalent ¹	1 ³	19	19	19	1 ³
Chromium, Trivalent ¹	30	36	180	1500	41
Copper	50	270	270	270	50
Cyanide	27	27	27	27	NS
Lead	63	400	400	450	63
Manganese	1600	2000	2000	2000	1600
Mercury (total)	0.18	0.73	0.73	0.73	0.18
Nickel	30	130	130	130	30
Selenium	3.9	4	4	4	3.9
Silver	2	8.3	8.3	8.3	2
Zinc	109	2200	2480	2480	109
PCBs/Pesticides					
2,4,5-TP Acid (Silvex)	3.8	3.8	3.8	3.8	NS
4,4'-DDE	0.0033 ³	1.8	8.9	17	0.0033 ³
4,4'-DDT	0.0033 ³	1.7	7.9	47	0.0033 ³
4,4'-DDD	0.0033 ³	2.6	13	14	0.0033 ³
Aldrin	0.005	0.019	0.097	0.19	0.14
Alpha-BHC	0.02	0.02	0.02	0.02	0.04 ⁴
Beta-BHC	0.036	0.072	0.09	0.09	0.6
Chlordane (alpha)	0.094	0.91	2.9	2.9	1.3
Delta-BHC	0.04	0.25	0.25	0.25	0.04 ⁴
Dibenzofuran	7	14	59	210	NS
Dieldrin	0.005	0.039	0.1	0.1	0.006
Endosulfan I	2.4 ²	4.8	24	102	NS
Endosulfan II	2.4 ²	4.8	24	102	NS
Endosulfan sulfate	2.4 ²	4.8	24	200	NS
Endrin	0.014	0.06	0.06	0.06	0.014
Heptachlor	0.042	0.38	0.38	0.38	0.14
Lindane	0.1	0.1	0.1	0.1	6
Polychlorinated biphenyls	0.1	1	1	1	1

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Semi-volatile Organic Compounds					
Acenaphthene	20	98	98	98	20
Acenaphthylene	100	100	100	107	NS
Anthracene	100	100	100	500	NS
Benzo(a)anthracene	1	1	1	1	NS
Benzo(a)pyrene	1	1	1	1	2.6
Benzo(b)fluoranthene	1	1	1	1.7	NS
Benzo(g,h,i)perylene	100	100	100	500	NS
Benzo(k)fluoranthene	0.8	1	1.7	1.7	NS
Chrysene	1	1	1	1	NS
Dibenz(a,h)anthracene	0.33 ³	0.33 ³	0.33 ³	0.56	NS
Fluoranthene	100	100	100	500	NS
Fluorene	30	100	100	386	30
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5	5.6	NS
m-Cresol(s)	0.33 ³	0.33 ³	0.33 ³	0.33 ³	NS
Naphthalene	12	12	12	12	NS
o-Cresol(s)	0.33 ³	0.33 ³	0.33 ³	0.33 ³	NS
p-Cresol(s)	0.33	0.33	0.33	0.33	NS
Pentachlorophenol	0.8 ³	0.8 ³	0.8 ³	0.8 ³	0.8 ³
Phenanthrene	100	100	100	500	NS
Phenol	0.33 ³	0.33 ³	0.33 ³	0.33 ³	30
Pyrene	100	100	100	500	NS
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.68	0.68	0.68	0.68	NS
1,1-Dichloroethane	0.27	0.27	0.27	0.27	NS
1,1-Dichloroethene	0.33	0.33	0.33	0.33	NS
1,2-Dichlorobenzene	1.1	1.1	1.1	1.1	NS
1,2-Dichloroethane	0.02	0.02	0.02	0.02	10
1,2-Dichloroethene(cis)	0.25	0.25	0.25	0.25	NS
1,2-Dichloroethene(trans)	0.19	0.19	0.19	0.19	NS
1,3-Dichlorobenzene	2.4	2.4	2.4	2.4	NS
1,4-Dichlorobenzene	1.8	1.8	1.8	1.8	20
1,4-Dioxane	0.1 ³	0.1 ³	0.1 ³	0.1 ³	0.1
Acetone	0.05	0.05	0.05	0.05	2.2
Benzene	0.06	0.06	0.06	0.06	70
Butylbenzene	12	12	12	12	NS
Carbon tetrachloride	0.76	0.76	0.76	0.76	NS
Chlorobenzene	1.1	1.1	1.1	1.1	40
Chloroform	0.37	0.37	0.37	0.37	12
Ethylbenzene	1	1	1	1	NS
Hexachlorobenzene	0.33 ³	0.33 ³	1.2	3.2	NS
Methyl ethyl ketone	0.12	0.12	0.12	0.12	100
Methyl tert-butyl ether	0.93	0.93	0.93	0.93	NS
Methylene chloride	0.05	0.05	0.05	0.05	12

Volatile Organic Compounds (continued)					
Propylbenzene-n	3.9	3.9	3.9	3.9	NS
Sec-Butylbenzene	11	11	11	11	NS
Tert-Butylbenzene	5.9	5.9	5.9	5.9	NS
Tetrachloroethene	1.3	1.3	1.3	1.3	2
Toluene	0.7	0.7	0.7	0.7	36
Trichloroethene	0.47	0.47	0.47	0.47	2
Trimethylbenzene-1,2,4	3.6	3.6	3.6	3.6	NS
Trimethylbenzene-1,3,5	8.4	8.4	8.4	8.4	NS
Vinyl chloride	0.02	0.02	0.02	0.02	NS
Xylene (mixed)	0.26	1.6	1.6	1.6	0.26

All concentrations are in parts per million (ppm)

NS = Not Specified

Footnotes:

¹ The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

² The SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

³ For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

⁴ This SCO is derived from data on mixed isomers of BHC.