REMEDIAL INVESTIGATION WORK PLAN

HAWKEYE TRADE CENTER & RESIDENCES
PARCEL 1B
1447 ST. PAUL STREET
ROCHESTER, NEW YORK 14650
NYSDEC SITE # C828203

Prepared for:

WBS Capital, Inc.
136-20 38th Avenue Suite 9J
Flushing, New York 11354

Prepared by:

1270 Niagara Street
Buffalo, New York 14213

Prepared By: Jason M. Brydges, PE	Signature:	Date: 10-17-19	Title: BE3 - PE
Reviewed By: John Berry, PE	Signatur	Date: 10-17-19	Title: BE3 - PE

October 2019

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

This document presents details of work activities designed to support a Remedial Investigation (RI) at the future Hawkeye Trade Center & Residences located at 1447 St. Paul Street (Parcel 1B) in Rochester, New York (See **Figure 1**). WBS Capital, Inc. has entered the Brownfield Cleanup Program (BCP), as the volunteer, to conduct an RI and remediate the site for redevelopment into a mixture of commercial/office space, flex space, and manufacturing. A BCP project schedule is provided in **Figure 2**. This Remedial Investigation Work Plan (RIWP) specifically relates to the investigation of Parcel1B (Site). The location of Parcel 1B as it relates to the total complex is shown on **Figure 3**.

Environmental assessments and investigations that have been completed on the overall site concluded that there is impacted groundwater, impacted structures, and potentially impacted soil due to the former use of the overall site as an industrial/manufacturing facility for over 110 years.

The purpose of the RI is to address the following activities and requirements:

- Obtain environmental data from the site under site specific quality assurance and quality control (QA/QC) for sampling, analyses, and data evaluation.
- Provide plans and approaches for health and safety and air monitoring for field activities.
- Summarize previous environmental assessments and investigations.
- Describe and illustrate the physical conditions of the site including wetlands, surface waterbodies, ecological receptors, and significant utility corridors.
- Tabulate and illustrate proposed sampling plan to include location, matrix, depth, analytes, methodologies, rationale, and QA/QC.
- Provide a schedule of activities and details of the proposed investigation team.
- Describe the areas of concern including impacted soils, fill material, groundwater, indoor air, surface waterbodies, and building conditions.
- Determine the necessity of a fish and wildlife impact analysis and, if required, gather data to evaluate impacts.
- Complete a qualitative exposure assessment for human health and fish/wildlife resources.
- Ensure (1) field work is sufficiently comprehensive to evaluate natural attenuation of groundwater, as applicable, and (2) all waste derived from the field work is managed per DER-10 Section 3.3(e).

1.1 SITE HISTORY AND DESCRIPTION

The overall site has been associated with industrial/manufacturing since the early 1900s.The overall site had multiple uses associated with transportation including the New York State Railway machine and repair shop in 1911 and Rochester Transit Corporation rail car maintenance in the late 1930's. Eastman Kodak Company purchased the site in 1942 when they began manufacturing optical lenses and equipment using thoriated glass along with photo processing operations. Parcel 1B encompasses a total of 2.295 acres. Buildings 12, 12A and 4 were historically associated with Kodaks photo processing operations and the buildings were also used for office space, non-hazardous and hazardous waste storage and laboratory use. A former photo-processing wastewater transfer station was located just north of Building 12.

Former thorium glass settling pits were located near the southwest exterior corner of Building 12 and near the southwest exterior corner of Building 12A.

Potential sources of contamination from all past uses on Site including from a machine shop, metal stamping and plating and photographic products production include heavy metals, solvents, kerosene, and petroleum related compounds.

Specific former Parcel 1B building uses include:

Building 4 - Powerhouse Building
Building 12 - Offices, clean room, maintenance/ fabrication shops, photo processing
Building 12A - Offices, clean room, maintenance/ fabrication shops, photo processing

The Site is currently vacant and is zoned for M-1 industrial use. The overall site is surrounded by additional industrial uses, and residential zones begin a few blocks to the south, east and northeast of the Site. A school exists to the immediate north of the property and Seneca park zoned O-S for open space exists to the west along the Genesee River. The property is in the City of Rochester but north of downtown approximately half of a mile south of State Route 104. The Site is located at the intersection of St. Paul Street and Avenue E within the Group 14261 Neighborhood Revitalization Plan BOA. The Site is also in an En-Zone. The Site is surrounded by other former Kodak buildings (i.e., Parcels 3 and 1A) along its east border and the Genesee River to the west. See **Figure 3** for details of major infrastructure, utilities, surface waterbodies, and buildings that currently exist at the Site.

There are no major changes of topography on the Site, which is generally flat with a gentle slope westward towards the river. Site soil has been generally classified as fine sand and fine to coarse gravel with some silt and clay at deeper depths of soil borings. Silt and clay have been noted at shallower depths towards western edge of the property and the Genesee River gorge. Groundwater flow direction has been determined to flow west towards the Genesee River with a depth to groundwater of approximately 8 to 10 feet bgs. Much of the site is covered by impervious features such as building and paved parking lots. Depths and characteristics of the fill and native subsurface material at the Site have yet to be determined. The River is the only surface waterbody or wetland area of significance near the Site, and the Site is not within a floodplain. No known drinking water wells exist in the vicinity. See **Figure 4** for more details on wetlands and surface waterbodies.

1.2 CONTEMPLATED USE OF THE SITE

The proposed project is a multiuse commercial development that will include modifying the former Kodak Parcel 1B buildings into a mixture of commercial, office, storage, and flex space to promote economic growth in the area. The concept is to incentivize a variety of different businesses into the region by creating a business park atmosphere into this section of the City of Rochester. The total square footage per use category and estimated value are unknown currently.

1.3 PROJECT ORGANIZATION

The following personnel constitute the primary members of the project team:

Project Manager – Jason M. Brydges, P.E.
Engineers – John Berry, P.E. and Jason M. Brydges, P.E.
Field Technicians – John Boyd and Cory Lauber
Health and Safety Officer – Peter J. Gorton, CHCM
QA/QC – John Berry, P.E.
Project Geologist – John Boyd
Attorney – FL Gorman, Harris Beach
Asbestos/lead/universal waste subcontractor – AMD Environmental
Drilling/Excavation subcontractors – to be determined
Analytical Laboratory – to be determined

2.0 GOALS AND OBJECTIVES

2.1 RI OBJECTIVES

In general, an RI has the following objectives as described in NYCRR Part 375-1.8(e):

- Delineation of the extent of the contamination at and emanating from all media at the Site and the nature of that contamination;
- Characterization of the surface and subsurface characteristics of the Site, including topography, surface drainage, stratigraphy, depth to groundwater, and any aquifers that have been impacted or have the potential to be impacted;
- Identification of the sources of contamination, the migration pathways, and actual or potential receptors of contaminants;
- Evaluation of actual and potential threats to public health and the environment; and,
- Production of data of sufficient quality and quantity to support the necessity for, and the proposed extent of, remediation and to support the evaluation of proposed alternatives.

2.2 SPECIFIC GOALS

Based on the data collected to date and history of the Site, RI activities have been developed that will allow for determining depth of fill material, depth of native soil, depth to bedrock, and depth to groundwater. Limited Site knowledge to date indicates that depth to groundwater is approximately 8' to 10' bgs, but it is unknown if groundwater resides in the native soils, urban fill, or potentially bedrock. Vapor impacts to existing structures has already been established; however, the exact source in the subsurface has not been identified. Specific goals for the RI are as follows:

- Perform enough soil borings or test pits across the Site in a quasi-grid pattern primarily focusing on areas not investigated during the Phase II. Borings and pits will better delineate contamination and confirm depth of fill, native soil, groundwater, and bedrock, if sufficiently shallow.
- Collect and analyze representative surface/subsurface soil samples to supplement samples collected in the Phase II and better characterize fill soils and native soils to quantify and assess contamination;
- Install and sample groundwater wells to assess known contamination and its sources (i.e., on or off-Site), direction of groundwater flow, and potential impacts to the

Genesee River and adjacent properties including the school located adjacent north of the site;
- Investigate soils beneath the three (3) Site buildings as a potential source of the known chlorinated solvents/heavy metals in groundwater;
- Conduct building environmental condition assessments within the three (3) Site buildings;
- Perform a hydraulic assessment of the groundwater in the subsurface using the installed wells; and
- Fill any data gaps resulting from previous assessments.

To the extent possible, RI field work will also include the identification of any significant structures, sensitive areas, or appurtenances that could have an impact on contaminant migration or remediation, such as, subsurface utilities, drains leading from the Site buildings and known outfalls from the parcel to the Genesee River.

2.3 CONTAMINANTS AND AREAS OF CONCERN

Based on the previous environmental investigations, the primary contaminants of concern at the Site are metals, SVOCs and VOCs. Chlorinated solvent and metal compounds were detected in groundwater above NYSDEC TOGs groundwater standards in Phase 2 ESA monitoring wells west of Building12 and south of Building 12A. Elevated metals and petroleum related VOC and SVOC compounds above TOGs standards were detected in the monitoring wells directly north of Building 4. Sub-slab vapor analyses indicated TCE was present in sub slab and indoor air samples in all of the Site buildings the at concentrations requiring mitigation (buildings 12 and 12A) or resample/mitigate (building 4). See **Figure 5** for details on exceedances and areas of concern.

Drains and sumps within the buildings are also potential areas of concern regarding contamination sources based upon past use of Parcel 1B. These areas could be the source of some of the TCE contamination observed in site groundwater and sub-slab soil vapor. Site buildings have also been assessed for thorium contamination, and an unrestricted use determination from the NYSDOH has been granted, though, the former thorium glass settling pits depicted in Figure 7 within Parcel 1B are still to be considered areas of concern. The PCB Release Outlet at the west property line is also to be considered an area of concern. Asbestos containing material (ACM), lead-based paint, PCBs, mercury, etc. has not yet been surveyed within the buildings; however, through various site visits, the Site is anticipated to contain various quantities of these materials. These contaminants will not be the subject of the RI but will be addressed during development activities and selective demolition.

3.0 PAST ENVIRONMENTAL CONDITIONS/INVESTIGATIONS

3.1 DECEMBER 2003 – PHASE I ESA

There were significant findings of environmental conditions at the Site, which has been used for industrial or commercial operations since the 1880's. Most notably, the Site was used for manufacturing of optical and photographic products, maintenance of railcars, a gasoline filling station, and tool and dye operations. The following are Recognized Environmental Conditions ("RECs") summarized from the Phase I ESA:

- The site of three former (removed) underground storage tanks ("USTs") at Building 4, used for fuel oil. Contaminated soil and groundwater were discovered at the Building 4 UST site in 1989 during the tank removals; however, due to the low levels of contamination, no remediation was required by the New York State Department of Environmental Conservation ("NYSDEC"). The current environmental quality conditions of soil and groundwater at the former UST site are undetermined.

- The presence of or potential presence of thorium residue in or on the following areas or features: drain pipes and sewers in and/or adjacent to Buildings 5, 11A, 12 and 12A; apparatus inside Shed 1 and the Generator Shed (both located in the Building 5/12A courtyard); Building 12A return-air duct (4th floor to 9th floor fan room); and Building 12A fan room (9th floor). Thorium assessment and remediation were performed at several of the Hawkeye buildings in the early 1990's. The New York State Department of Labor approved the remediation activities report and closed the site Radioactive Materials License; however, the report recognized that thorium residue remains in some inaccessible areas of the facility.

- Former (closed) thorium glass settling pits located at the following sites: west of Building 5; near the southwest exterior corner of Building 12; near the southwest exterior corner of Building 12A; and inside Building 11A (northwest corner). The current environmental quality conditions of soil and groundwater at the sites are undetermined.

- The site of a release at a former (inactive) photo processing wastewater transfer station located north of Building 12. The impact to the subsurface at the release site, if any, was not determined.

- The area formerly occupied by the Rochester Transit Corporation for use as an equipment repair shop (area currently below Buildings 5 and 12A), plus a coincidental area formerly occupied by a gasoline station (area currently below the southeast corner of Building 5). The impact from the operations, if any, is undetermined.

See **Figure 6** illustrating the proximity of various characteristics of the surrounding areas of the Site including sensitive receptors, sites logged in environmental databases, and floodplain areas.

3.2 JUNE 2005 – PHASE II ESA

The Phase II ESA was conducted to address the RECs established in the Phase I from 2003. Accordingly, soil and groundwater were investigated throughout the Site in areas known to contain previous manufacturing operations and commercial/industrial activities. See **Tables 1 and 2** for Phase II results from 2005. In summary, the investigation determined the following with respect to the Site and potential contaminants of concern:

- Some soil and groundwater samples collected within the Hawkeye manufacturing site indicate impacts of trichloroethylene and 1,2- dichloroethylene. 1,2-dichloroethylene may be a breakdown product of the trichloroethylene, but the absence of vinyl chloride, also a breakdown product of trichloroethylene, may indicate that trichloroethylene and 1,2-dichloroethylene have been used as industrial chemicals at the site by Kodak or previous property owners.

- The presence of TAL metals in soil and groundwater is ubiquitous across the project Site as anticipated. Common metals such as calcium, iron, magnesium, manganese and sodium were detected in the highest concentrations and widest ranges, but because they are common mineral-forming metals, their presence is not considered to be significant. Other metals concentrations in several samples exceed background levels.

- The analysis of a groundwater sample from the monitoring well just north of Building 4 included five VOCs that exceed the TOGS 1.1.1 levels: acetone, benzene, ethylbenzene, toluene and xylene. The detected VOCs are consistent with those chemicals in the related soil sample with the exception of carbon disulfide, which was not detected in the groundwater sample. The sample analysis detected the four SVOCs at concentrations that exceed TOGS 1.1.1 levels: acenaphthene; 2 methyl phenol; 3&4 methyl phenol; and phenol. Five TAL metals were detected at concentrations that exceed TOGS 1.1.1 levels: iron; magnesium; manganese; sodium; and thallium.

3.3 October 2017 – Phase II ESA

A second ESA was conducted in 2017 that included 31 soil borings, 13 overburden groundwater monitoring wells, 4 test pits, laboratory analysis of soil and groundwater samples, and a limited SVI assessment of Site buildings. This ESA was performed to further evaluate impacts identified in 2005, and results indicate potential impacts related to petroleum, chlorinated solvents, metals, PCBs, soil vapor, and thorium. Only two new monitoring wells were installed in Parcel 1B, however, both were dry at the time of sampling. Four (4) wells installed during the 2004 ESA were resampled and only acetone and Sodium were detected above TOGs standards.

IN parcels other than Parcel 1B, Chlorinated solvents were detected at low-levels in soil and groundwater at the Hawkeye Facility (i.e., proximate Site Buildings and not at adjacent parking lots). Chlorinated solvents were not detected in soil above Unrestricted Use SCOs; however, chlorinated solvents including TCE and cis-1,2-dichloroethene were detected in groundwater in several wells at the Hawkeye Facility slightly above NYSDEC Groundwater Standards. TCE was detected up to 15.4 ppb (MW-07) and cis-1,2-dichloroethene was detected up to 5.4 ppb (IB11AW). Refer Table 3 for historical testing data.

A specific source of the chlorinated solvent impacts identified in groundwater at the Site has not been identified; however, the low-level, wide-spread nature of these impacts may be indicative of multiple discrete sources (e.g., failed drains/piping, poor housekeeping, waste storage, etc.) from the prior historical uses of chlorinated solvents at the Site. SVI results (see below) indicate sources of the low-level concentrations of chlorinated solvents observed in groundwater may be present beneath building footprints.

Urban fill material consisting of wood, glass and brick was observed in various parking lots throughout the entire Hawkeye facility at depths ranging from 0.5 to 4.0-ft bgs. Several metals were identified in soil and groundwater samples at concentrations exceeding SCOs, and these results are consistent with the 2005 Phase II (e.g., cadmium, lead, sodium magnesium, and iron). The presence of these metals in groundwater may be from naturally occurring conditions.

SVI sampling at the Hawkeye facility identified concentrations of TCE in sub-slab vapor and indoor air in 6 of the 8 buildings that warrant mitigation including Buildings 5, 10, 11, 11A, 12, and 12A. Although SVI testing did not result in mitigation for Buildings 4 and 6, additional monitoring and investigation in these buildings was recommended. Since the footprint of the entire complex includes approximately 120,000-square feet and only 9 locations were selected for SVI investigation, all buildings should be considered as candidates for installation for sub-slab depressurization systems. Lastly, thorium isotopes were detected in soil and groundwater, but at concentrations below applicable regulatory comparison criteria (i.e., concentrations in soil were compared to the General Soil Screening Levels for Radionuclides: Migration to Groundwater: 20DAF obtained from Appendix A of the USEPA's Soil Screening Guidance for Radionuclides, and concentrations in groundwater were compared to the Radionuclide Drinking Water Maximum Contaminant Levels obtained from the USEPA's Soil Screening Guidance for Radionuclides Technical Background Document). See **Tables 3-5** for Phase II results from 2017.

4.0 INTERIM REMEDIAL MEASURE (IRM)

A primary objective of remediation is to stabilize sources of contamination identified in media to reduce or eliminate receptor exposure to contaminants or to contain migration of contamination. IRMs are actions taken to mitigate exposures before the completion of the RI and remedial alternative selection. Examples of typical IRMs include the removal of source areas/hotspots/wastes, construction of collection or recovery systems, installation of engineered barriers and controls, and installation of vapor control systems.

If the need for implementing an IRM is determined, then the DEC must be notified and the IRM defined as emergency or non-emergency. Emergency IRMs are addressed as a spill response and are time-critical that are not subject to DER-10 (i.e., other guidance applies, such as CERCLA, spill response guidance manual, etc.). Non-emergency IRMs such as drum removals, construction of fencing, and posting of warning signs can be performed at any time during the BCP, but in response to existing or potential exposures at the Site. These are best utilized when it is cost effective to complete the IRM prior to the remedial investigation and remedy selection process. In these cases, DER-10 should be followed and include corresponding documentation and oversight/approval by DEC.

The most significant advantage to using IRMs is the reduction in schedule of any impending remedial activities since they may be conducted concurrently with sampling to delineate the contamination and to confirm contaminant removal. The entire Hawkeye facility possesses potential exposures from SVI and scheduling issues that require the use of an IRM. A comprehensive inspection, building design plan review, and sub slab vacuum analysis of the Hawkeye Facility has been performed. Based upon the data obtained, a Sub-Slab Depressurization System (SSDS) has been designed and installed in Buildings 12 and 12A to prevent suspect air contaminants from entering the building via soil vapor intrusion.

5.0 INVESTIGATION SCOPE OF WORK

5.1 INTRODUCTION

The investigation will include soil analyses, groundwater analyses, hydraulic assessment, and building assessments. Additional soil vapor assessment will not be required, as the proposed IRM (i.e., SSDS) as described above will be performed. All field work will be completed in accordance with the Health and Safety Plan (HASP) provided in **Appendix A**. Asbestos, lead based paint, mold, and universal waste will also be surveyed and provided to the NYSDEC upon completion. This survey and selective interior demolition anticipated for Site re-development will occur independently of the following RI work activities:

- Soil investigation (soil borings, test pits and sampling and analyses);
- Groundwater investigation (well installation, sampling, and analyses);
- Hazardous materials inspection (ACM, LBP, and universal waste);
- Building inventory assessment (as a supplement to SSDS installation);
- Outfall assessments and sampling; and,
- Hydraulic assessment of subsurface groundwater.

It is important to note that the soil investigation will address sampling and analyses beneath and in proximity to the Site buildings based on building access.

5.2 SURFACE AND SUBSURFACE SOIL

Soil borings will be completed across the Site with a focus on (1) previously identified impacted areas, (2) areas where no investigation has been performed, and (3) interior locations of potential sources of contamination, such as drains and sumps (See **Figure 7**). The precise sampling locations will be based on real-time field observations and will specifically target potential contaminant features while ensuring that areas of concern are examined (e.g., proximity to drains/sumps, soils/groundwater below buildings, etc.).

It is anticipated that approximately 21 soil borings will be completed within Parcel 1B. At least six (6) borings are proposed within the Three (3) buildings (two each Building) to better understand the nature and extent of soil impacts beneath the buildings, particularly the TCE exceedances in the sub-slab vapors noted in the SVI investigations. Three (3) soil borings are proposed at the former Thorium Glass Settling Pits (one (1) at each of the three (3) pits).

The primary purpose of the subsurface assessment is to visually inspect and characterize surface and subsurface soil conditions across the entire Site. Secondarily, the extent of known contamination should be quantified as data allows. The borings will be advanced to a depth of approximately 16 feet below ground surface (bgs) or to refusal using Geoprobe® direct push technology. Continuous soil sampling will be conducted using the Geoprobe® with a two-inch diameter sampler. At each boring location the following will be recorded:

- Thickness and characteristics of the cover/fill material;
- Depth to bedrock, if encountered;
- Depth to the water table, if encountered;

- Thickness and characteristics of the native soil, if encountered;
- Photoionization detector (PID) screening results; and
- Samples collected at an estimated depth.

A detailed log of these records will be maintained to assist field personnel in selecting most appropriate sample at each location, and to supplement future analytical results. An estimated 30 soil samples from the surface and subsurface will be collected for laboratory analyses. Surface samples will be collected from 0-2" in depth. Samples will be selected based upon (1) areas that appear to be impacted whether native or fill, (2) areas of natural soil at interface with fill material, and (3) known fill material that may or may not be impacted but believed to represent Site soils. Proposed soil samples to be collected are summarized in **Appendix B** – Quality Assurance/Quality Control Plan.

The soil samples will be analyzed by a NYSDOH environmental laboratory accreditation program (ELAP) certified laboratory that produces NYSDEC Category B data package deliverables. Data Usability Summary Reports (DUSRs) will be prepared for all samples. All samples will be analyzed for the full Part 375 Brownfields constituent list plus Tentatively Identified Compounds (TICs), and emerging contaminants which includes the following:

- VOCs (not for surface samples)
- SVOCs
- Metals
- PCBs
- Pesticides
- 1,4-dioxane
- PFOA/PFOS

In addition to soil sampling for the above constituent list at the three Former Thorium Glass Settling Pits soil samples will be collected at each pit and sent for alpha spectroscopy – isotopic thorium and gamma spectroscopy. Any subsurface disturbance, boring or test pit, will be performed at a minimum distance of 2.5 feet away from marked utilities to reduce the risk damaging an underground utility line. All boreholes will be filled with indigenous soil or clean sand prior to leaving each location. Field equipment will be operated in accordance with standard practices and in a safe and efficient manner as to minimize any hydraulic system leaks or lubricant and fuel leaks (See **Appendix A** – HASP for details).

Additional field activities performed by the geologist/technician include properly labeling, packaging, delivering samples to the laboratory; supervising field operations; and completing boring logs, which can be performed in the office after recording field notes. The geologist/technician will update the Project Manager at least daily on progress in the field and results of the subsurface investigation. No major changes in the subsurface investigations will occur unless approved by the Project Manager, who will also notify the Client and NYSDEC regarding project developments. A detailed description of the sampling methods is provided in the **Appendix C** – Field Sampling Plan.

5.3 GROUNDWATER

Seven (7) groundwater monitoring wells will be installed (see **Figure 7**) using a conventional truck mounted drill rig as accessibility allows. Groundwater was detected in the most recent Phase II ESA at approximately 6 feet bgs within the overburden; however, bedrock appears to be shallow as well at approximately 10 feet bgs. This is not unusual as the Site is in proximity to the Genesee River gorge and the presence of bedrock is evident within 100 yards to the west. Accordingly, it is anticipated that most of the groundwater wells will be installed into bedrock with a minimum quantity of three bedrock wells. The wells will have a 4-inch diameter PVC casing installed into overburden and bedrock materials. The casing will be allowed to set over night with the core approximately 10 feet into the observed groundwater table. The location of wells within the buildings will be subject to access conditions which may limit where a conventional drill rig may be used. Geoprobe installed wells within certain buildings maybe an alternative and will be discussed with NYSDEC after access is assessed.

The data obtained from the initial well installation, such as soil type and bedrock/groundwater depth, will be used to guide the installation of the remaining wells with the understanding that at least 3 wells will be installed into bedrock. In addition, the location of interior wells will consider the presence of drains or sumps within the building and information obtained from interior soil borings. Installation of wells will also adhere to the requirements provided in the Field Sampling Plan provided in **Appendix C**. Boring logs and well completion diagrams will be provided in the RI report. All field work will adhere to the HASP provided in **Appendix A**.

A minimum of 1 groundwater sample will be collected from each of the seven (7) wells. A second round of groundwater sampling will be determined, in consultation with the NYSDEC, to glean more physical and contamination data based upon the results of the first round of sampling (e.g., seasonal influences on water table, modification of analyte list, changes in number of wells, etc.). Well development and sampling will be in accordance with the **Appendix C** Field Sampling Plan. Sampling of emerging contaminates (PFAS) will follow the NYSDEC July 2018 Groundwater Sampling for Emerging Contaminates and its August 8,2018 revision provided in Attachment A of the **Appendix C** Field Sampling Plan. Groundwater samples will be submitted to the same New York State ELAP-certified laboratory and analyzed for the following Part 375 brownfield constituents and emerging contaminants:

- VOCs + TICs
- SVOCs + TICs
- Metals
- PCBs
- Pesticides
- 1,4-dioxane
- PFOA/PFOS

All sample analysis will be in accordance with ASP, Cat B requirements. QA/QC requirements for all sample analysis are provided in **Appendix B** QA/QC Plan that summarizes the number of Groundwater samples to be collected. All detected sample concentrations will be included in a table and compared to NYSDEC Groundwater Standards (TOGS).

5.4 SOIL VAPOR INTRUSION INVESTIGATION

The three (3) buildings on Site have already undergone a soil vapor intrusion investigation. The

2017 Phase II ESA results from the evaluation indicate concentrations of TCE in sub-slab vapor and indoor air that warrants mitigation in buildings 12 and 12A and resampling or mitigation in building 4 (see **Table 5**). As a result, the IRM described in Section 4 will be undertaken to remedy the elevated concentrations of TCE beneath and within the buildings. Therefore, no additional SVI investigation will be warranted during this RI effort. An inventory assessment of all buildings will be performed, however, to help identify any potential volatile contaminant sources originating from within the building that could impact the vapor exceedances.

5.5 Hazardous Materials Building Inspection

A building inspection will be performed to qualify and quantify, where possible, various hazardous materials such as asbestos containing materials (ACM), lead based paint, PCB containing materials, mercury, and other universal waste within all three (3) buildings. ACM sampling activities will be performed in accordance with guidelines and techniques identified in NY Code Rule 56. Bulk sample analyses will be performed via PLM / TEM according to EPA Method 198.4 with a 5 Day TAT upon receipt of samples. An inspection-specific Health and Safety Plan will be developed to comply with NYS HCR project requirements. Representative lead-based paint inspection services will be conducted for all renovations areas according to Title X chapter 7 of the HUD Guidelines. Lastly, representative PCB caulk sampling in accordance with EPA guidelines and regulations in representative locations throughout each building will also be conducted.

5.6 Outfall Investigation/Assessment

There are four (4) outfalls identified extending to the west from the Parcel 1B western property line. They are identified as 1 through 4 on Figure 8 and identified as below:

1 – Photo Process Waste Release Outfall
2 – PCB Release Outfall
3 – Thorium Settling Pit Outfall
4 – Thorium Settling Pit Outfall

With the use of a backhoe each outfall will be uncovered within the Parcel 1B property. Where possible sediment samples will be collected from the outfall pipes or uncovered basins within the property.

5.7 Groundwater Hydraulic Assessment

Hydraulic assessment includes the completion of hydraulic conductivity tests and the measurement of water levels in monitoring wells. Hydraulic conductivity testing will be performed on the newly installed monitoring wells using a variable head method. Variable head tests will be completed using a stainless steel or PVC slug to displace water within the well or by removing water from the well with a bailer or pump. The recovery of the initial water level is then measured with respect to time. Data obtained using this test procedures will be evaluated using procedures presented in "The Bouwer and Rice Slug Test - An Update", Bouwer, H., Groundwater Journal, Vol. 27, No. 3, May-June 1989, or similar method.

5.8 PERIMETER SOIL GAS INVESTIGATION

To evaluate the possibility of soil gas concerns at the northern off-site property perimeter a soil vapor sample will be collected along the Northern parcel 1B boundary. A single probe hole will be installed along the northern perimeter by use of a Geoprobe at the location shown on **Figure 7.** The Geoprobe will install a 2-inch diameter hole to the approximate top of groundwater level (6+/- feet below grade) or bedrock which ever encountered first. A stainless-steel vapor probe will be set at this level with ¼ inch tubing to the surface and connected with a Summa canister. The sample will be submitted to a NYSDEC certified contract laboratory and analyzed for TCL VOCs by EPA method TO-15.

5.9 SUPPLEMENTAL FIELD INVESTIGATIONS

As previously described in Sections 2 and 3, the Hawkeye facility has a history of producing thoriated glass using the thorium 232 isotope, and the facility was released for unrestricted use upon license termination in 1995. Despite past investigations, surveys, and remedial efforts for addressing thorium wastes, the areas and soils encountered during this investigation will be surveyed and documented. For example, the following standard radiological protocol will be utilized:

- Use of calibrated gamma radiation equipment,
- Source check gamma radiation equipment,
- Obtain daily gamma radiation background measurements,
- Survey surface area for intended well or boring,
- Record downhole measurements of gamma radiation,
- Survey spoils, as produced, from soil borings and well cuttings, and
- Document gamma radiation readings in counts per minute (cpm).

Additionally, with respect to gamma radiation protocol, samples collected for Part 375/BCP RI purposes in an area that exhibits gamma radiation in excess of twice background will be analyzed for alpha and gamma spectroscopy. This will be indicted by the field technician on the chain of custody.

Laboratory data generated from the RI activities described in Section 5 will be submitted to NYSDEC as electronic data deliverables (EDD) that comply with the State's Electronic Data Warehouse Standards. The data will be evaluated by NYSDEC to determine if additional investigation activities are needed beyond what is described herein. Additional assessment may include an additional subsurface boring or test trench and sample analysis limited to contaminants identified during the RI program. Should the site investigations indicate the likelihood of site contaminants leaching outside the Site boundary, additional assessment for potential off-site soil vapor intrusion may also be necessary.

6.0 QUALITATIVE EXPOSURE ASSESSMENT

Qualitative exposure assessments will be completed in accordance with DER-10 sections 3.3(c) 3 & 4. The assessments will include what impacts site contaminates and field activities may have, if any, on human health and fish and wildlife resources considering all media (ground/surface water, soil, soil vapor, ambient air and biota).

The qualitative human health exposure assessment will evaluate the five elements (DER-10 Appendix 3B) associated with exposure pathways and describe how each of these elements pertains to the Site. The exposure pathway elements that will be addressed include:

- A description of the contaminant source(s) including the location of the contaminant release to the environment (any waste disposal area or point of discharge) or if the original source is unknown, the contaminated environmental medium (soil, indoor or outdoor air, biota, water) at the point of exposure;
- An explanation of the contaminant release and transport mechanisms to the exposed population;
- Identification of all potential exposure point(s) where actual or potential human contact with a contaminated medium may occur;
- Description(s) of the route(s) of exposure (i.e., ingestion, inhalation, dermal absorption); and,
- A characterization of the receptor populations who may be exposed to contaminants at a point of exposure.

As called for in DER-10 for volunteers in the BCP, sufficient field information and sampling data will be provided to identify the presence of contamination, if any, that maybe leaving the Site to support qualitative off-site exposure assessments by others.

DER-10 section 3.10.1 and Appendix 3C provide guidance on determining if a fish and wildlife resource impact analysis (FWRIA) is necessary. After or during the RI field activities, the determination will be made regarding the process to perform an FWRIA Part 1, Part 2 or both. Should the decision key indicate a Part 1 impact analyses is required, resource characterization activities performed by a qualified individual per DER-10 section 1.5(a)3.ii will be implemented and include the following:

1. Identify all fish and wildlife resources based upon knowledge of the site and a search of DEC records and/or other sources
2. Describe the resources on the site and within one-quarter mile of the site
3. Identify contaminant migration pathways and any fish and wildlife exposure pathways
4. Identify contaminants of ecological concern
5. Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern, the FWRIA Part 1 should draw conclusions regarding the actual or potential adverse impacts to fish and wildlife resources

Documentation and results from the FWRIA Part 1 will be submitted to the NYSDEC, who will determine whether the fish and wildlife resources identified constitute an important component of the environment at or near the site; and whether there are actual or potential impacts to the resources. For sites where, further evaluation or definition of ecological impact is necessary, DEC will identify the need for a FWRIA Part 2 ecological impact assessment and request a work plan that includes provisions for gathering the necessary data to define and evaluate the adverse impacts to the resources. It should be noted that DEC's Division of Fish Wildlife and Marine Resources shall be contacted at least 7 calendar days prior to the initiation of any field work or biota sampling related to the FWRIA.

7.0 REPORTING

An RI report will be prepared in accordance with the applicable requirements of DER-10 and Part 375. A conceptual site model, as defined and in accordance with DER-10 Section 3.2.2 will be provided in the RI report. Pertinent field logs and forms generated during the remedial investigation activities are presented in **Appendix D**. A schedule of all BCP activities including the RI field work is provided in **Figure 2**. The RI report will be drafted soon after all work plan activities have been completed. It is anticipated that the RI report will include a corresponding alternatives analysis report (AAR) that (1) evaluates remedial alternatives based upon the data obtained in the RI, and (2) initiates the 45-day public comment period for the generation of the remedial action work plan (RAWP) and final decision document produced by the NYSDEC.

A Citizen Participation Plan (CPP) has been prepared for the Site in accordance with the requirements outlined in NYSDEC's DER- 23 Citizen Participation Handbook for Remedial Programs, issued January 2010, as amended. The CPP provides for issuance of fact sheets and public meetings at various stages in the investigation/remedial process. A fact sheet will be prepared by NYSDEC to announce the availability of the RIWP for review, followed by a 30-day comment period. A public meeting will be held, if requested, during the public comment period. A copy of this RIWP will be made available for public review at Lincoln Branch Library, and an announcement will be issued in the Environmental Notice Bulletin. The major components of the CPP are as follows:

- Names and addresses of the interested public as set forth on the Brownfield site contact list provided with the BCP application;
- Identification of major issues of public concern related to the site and that may be encountered during the remediation project;
- A description of citizens participation activities already performed and to be performed during remediation;
- Identification of document repositories for the project; and,
- A description and schedule of public participation activities that are either required by law or needed to address public concerns related to the Site.

Fact sheets documenting the goals and progress of the project will be prepared at key milestones during the project and distributed to those on the project mailing list. The distribution list is included in the CPP, which is provided in **Appendix E.**

8.0 WORK PLAN CERTIFICATION

John B. Berry and Jason M. Brydges certify that we are currently NYS registered professional engineers as defined in 6 NYCRR Part 375 and that this Remedial Investigation 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).

____

John B Berry, PE

____

Jason M. Brydges, PE

FIGURES

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY
1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

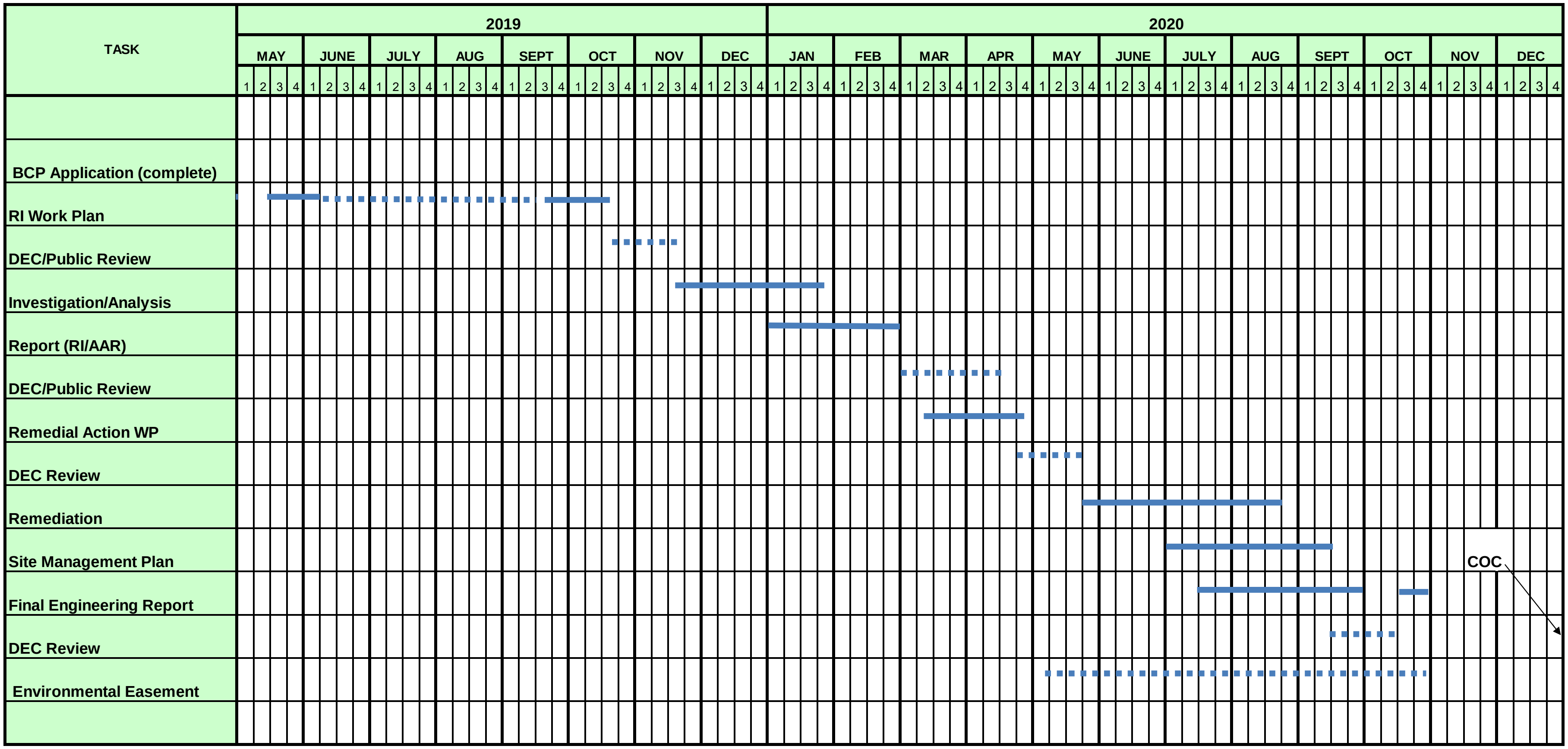
Figure 1: USGS Topo Map

1405 St. Paul Street	5/21/2019
Rochester, NY	WBS Capital, Inc.

FIGURE 2

BCP PROJECT SCHEDULE (1)   OCTOBER, 2019

HAWKEYE TRADE CENTER AND RESIDENCES- PARCEL 1B



(1) - Assumes a 2020 COC required

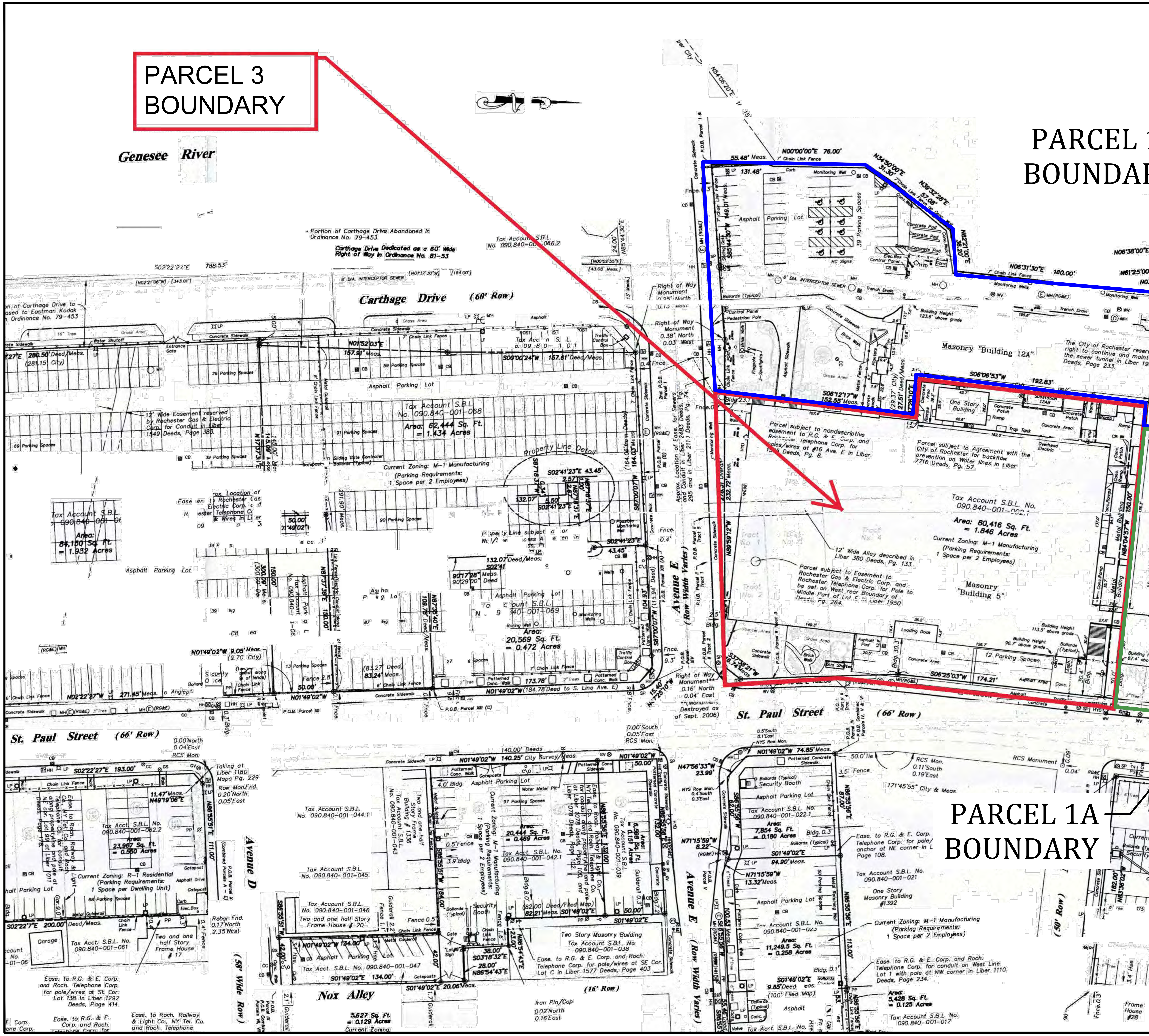


Figure 3
Site Survey Details

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY
1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

WBS Capital, INC.
Hawkeye Parcel 1A, 1B, 3 BCP Project
Rochester, New York

06-12-2019	SCALE: N/A	SHEET 1 OF 1

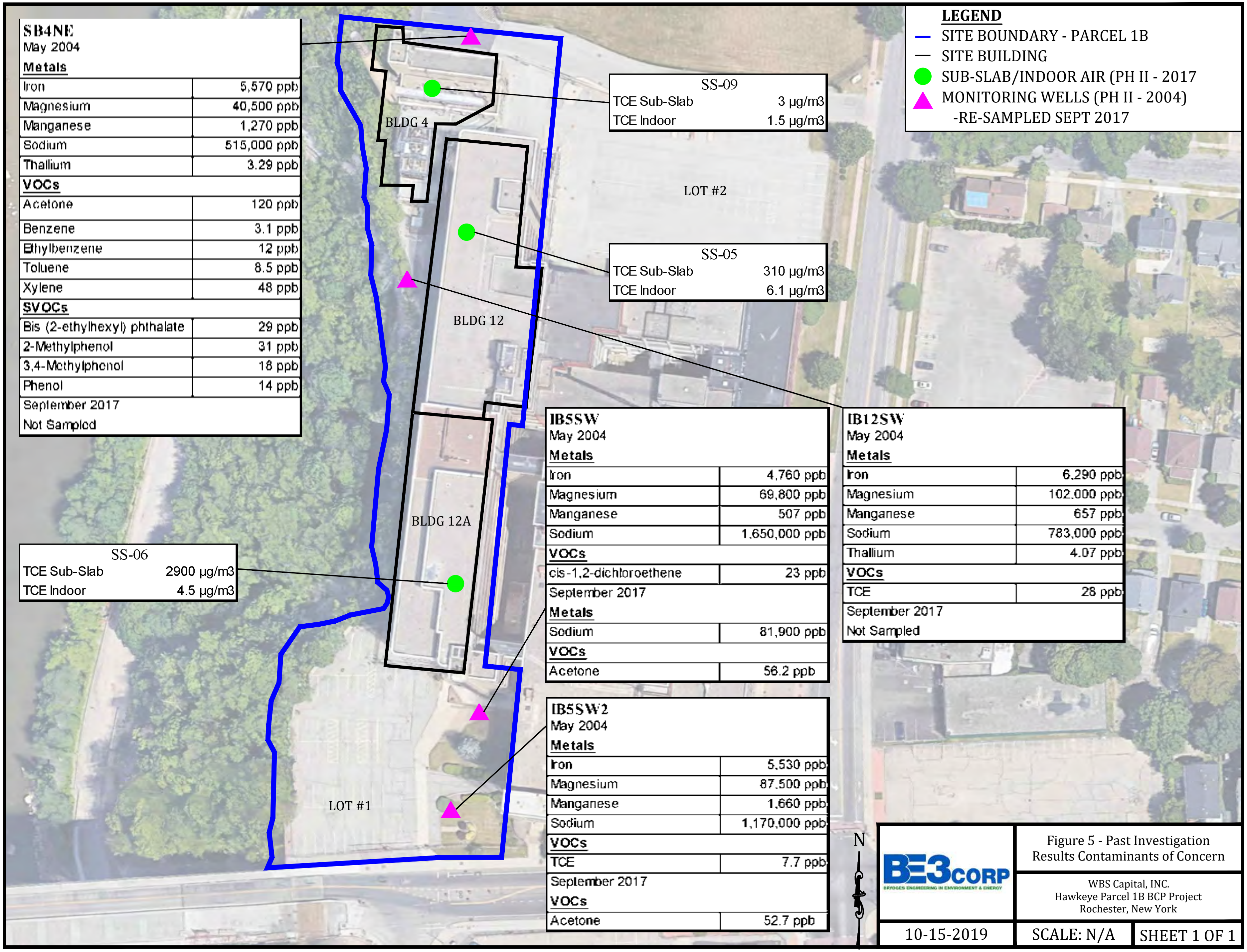
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY
1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

Figure 4: Wetland and Surface Waterbodies

WBS Capital, INC.
Hawkeye Parcel 1A, 1B,3 BCP Project
Rochester, New York

06-05-2019	SCALE: N/A	SHEET 1 OF 1



LEGEND

- SITE BOUNDARY - PARCEL 1B
- SITE BUILDING
- SUB-SLAB/INDOOR AIR (PH II - 2017
- MONITORING WELLS (PH II - 2004) -RE-SAMPLED SEPT 2017

SB4NE
May 2004

Metals	
Iron	5,570 ppb
Magnesium	40,500 ppb
Manganese	1,270 ppb
Sodium	515,000 ppb
Thallium	3.29 ppb
VOCs	
Acetone	120 ppb
Benzene	3.1 ppb
Ethylbenzene	12 ppb
Toluene	8.5 ppb
Xylene	48 ppb
SVOCs	
Bis (2-ethylhexyl) phthalate	29 ppb
2-Methylphenol	31 ppb
3,4-Methylphenol	18 ppb
Phenol	14 ppb
September 2017	
Not Sampled	

SS-09

TCE Sub-Slab	3 µg/m3
TCE Indoor	1.5 µg/m3

SS-05

TCE Sub-Slab	310 µg/m3
TCE Indoor	6.1 µg/m3

SS-06

TCE Sub-Slab	2900 µg/m3
TCE Indoor	4.5 µg/m3

IB5SW
May 2004

Metals	
Iron	4,760 ppb
Magnesium	69,800 ppb
Manganese	507 ppb
Sodium	1,650,000 ppb
VOCs	
cis-1,2-dichloroethene	23 ppb
September 2017	
Metals	
Sodium	81,900 ppb
VOCs	
Acetone	56.2 ppb

IB12SW
May 2004

Metals	
Iron	6,290 ppb
Magnesium	102,000 ppb
Manganese	657 ppb
Sodium	783,000 ppb
Thallium	4.07 ppb
VOCs	
TCE	28 ppb
September 2017	
Not Sampled	

IB5SW2
May 2004

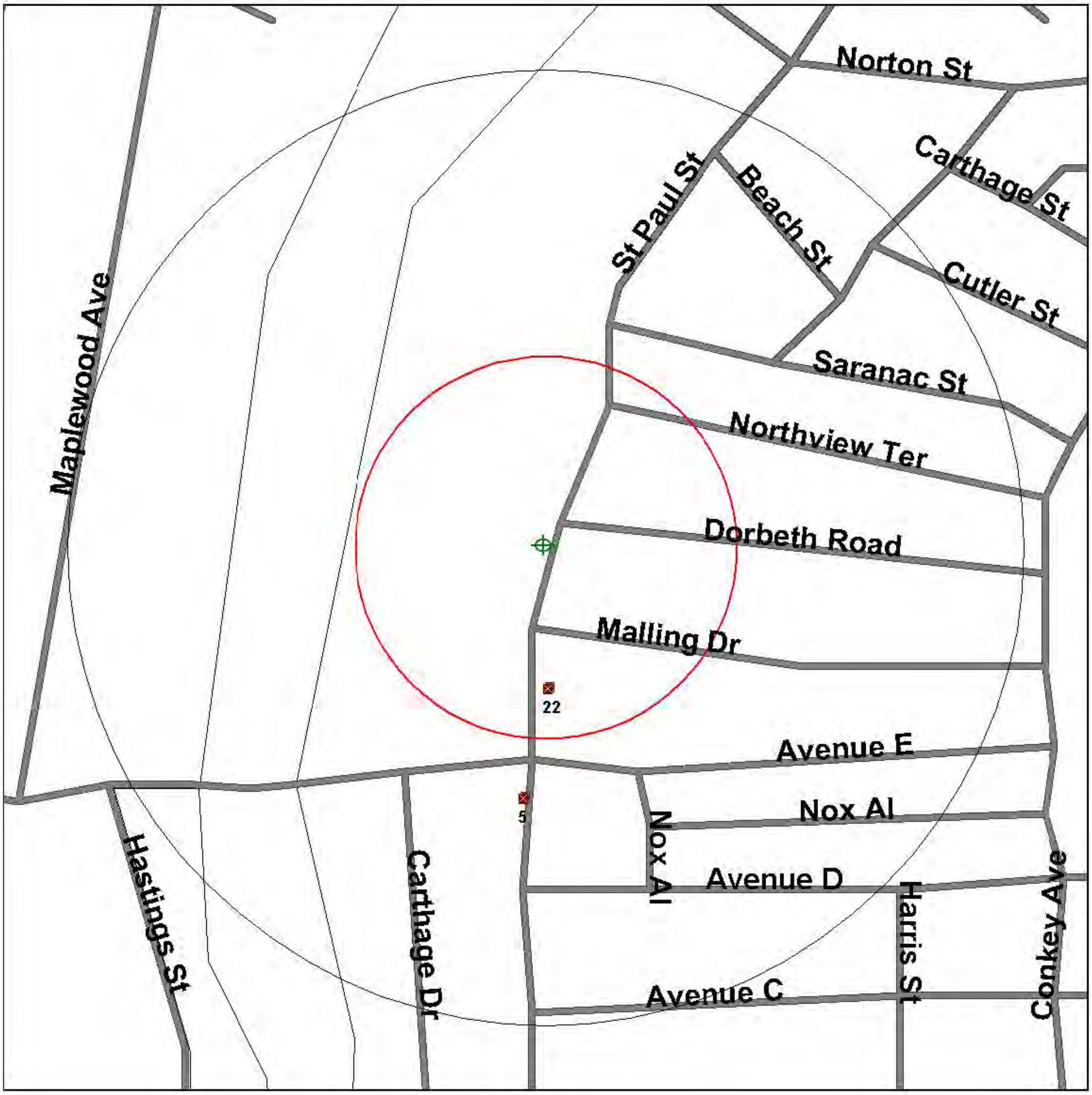
Metals	
Iron	5,530 ppb
Magnesium	87,500 ppb
Manganese	1,660 ppb
Sodium	1,170,000 ppb
VOCs	
TCE	7.7 ppb
September 2017	
VOCs	
Acetone	52.7 ppb

BE3CORP
BRYDGES ENGINEERING IN ENVIRONMENT & ENERGY

Figure 5 - Past Investigation Results Contaminants of Concern

WBS Capital, INC.
Hawkeye Parcel 1B BCP Project
Rochester, New York

10-15-2019	SCALE: N/A	SHEET 1 OF 1



Source: 1999 U.S. Census TIGER Files

Target Site (Latitude: 43.182788 Longitude: -77.625232) ....

Identified Site, Multiple Sites, Receptor ....

NPL, Solid Waste Landfill (SWL) or Hazardous Waste............................

Railroads ....

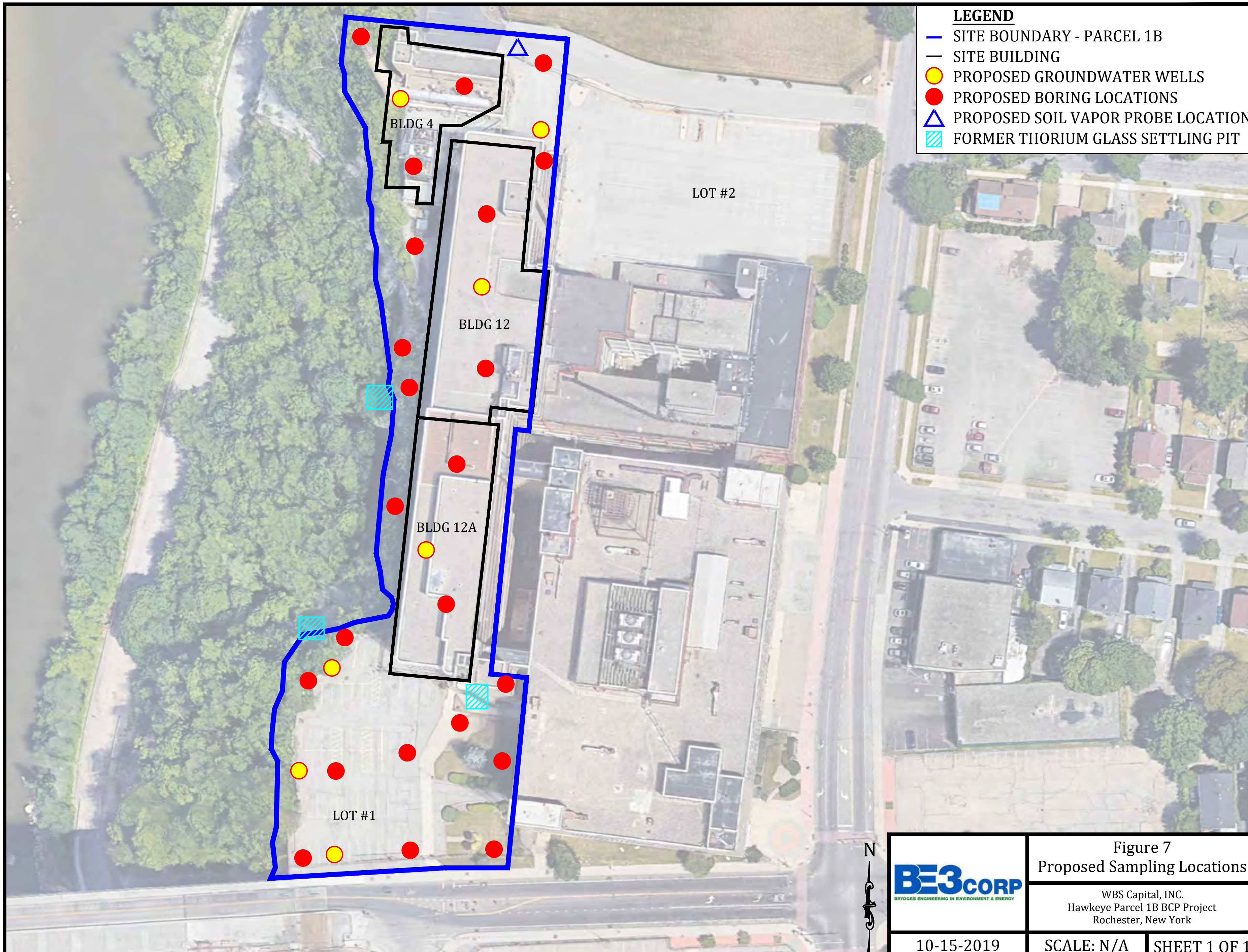
Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY
1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

Figure 6: Environmental Records Radius Map

Hawkeye Parcel 1B BCP
Project Rochester, New York
WBS Capital, Inc.

05-30-2019	SCALE: N/A	SHEET OF 1

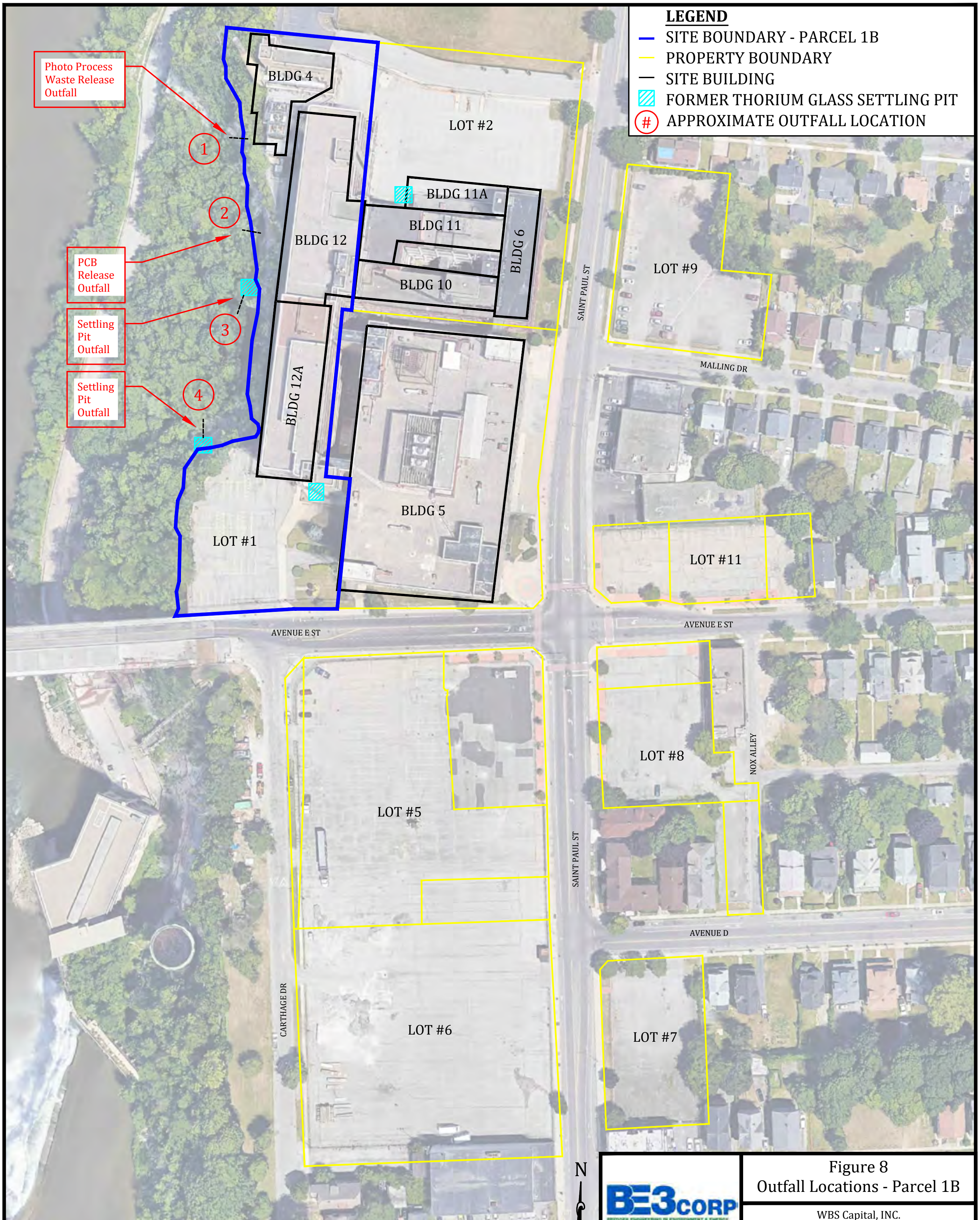


BE3 CORP

Figure 7
Proposed Sampling Locations

WBS Capital, INC.
Hawkeye Parcel 1B BCP Project
Rochester, New York

10-15-2019	SCALE: N/A	SHEET 1 OF 1



NOTES:
1)Property boundaries were obtained from Monroe County GIS and are considered approximate.
2) Aerial image obtained of City of Rochester and may not represent current conditions.

BE3CORP

Figure 8
Outfall Locations - Parcel 1B

WBS Capital, INC.
Hawkeye Parcel 1B BCP Project
Rochester, New York

10-15-2019	SCALE: N/A	SHEET 1 OF 1

TABLES

TABLE 1 - 2005 Phase II ESA (Page 1)

DETECTED SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS, SEMI-VOLATILE ORGANIC COMPOUNDS AND INORGANIC COMPOUNDS
HAWKEYE FACILITY, ROCHESTER, NEW YORK

Sample Location:	*Recommended*	*B01HEB4NE04212004*	*B01HEB5NE04152004*	*B01HEB5SW04192004*	*B01HEB5SW04202004*	*B01HEB12N04192004*	*B01HEB12SW04202004*	*B01HEB12W04212004*	*B01HEB12ASW04202004*		*B01HEPL204182004*	*B02HEPL204182004*
Sample Date:	*Soil Cleanup*	*4/21/2004*	*4/15/2004*	*4/19/2004*	*4/20/2004*	*4/19/2004*	*4/20/2004*	*4/21/2004*	*4/20/2004*		*4/18/2004*	*4/18/2004*
Sample ID:	*Objectives*	*L22483-3*	*L22455-1*	*L22477-4*	*L22480-2*	*L22477-3*	*L22480-5*	*L22483-2*	*L22480-3*	*L22480-4*	*L22468-1*	*L22468-2*
Sample Depth:	*TAGM 4046*	*11-12.3 ft*	*20-25 ft*	*6-7.5 ft*	*6-8 ft*	*6-7.9 ft*	*8-10 ft*	*5-7 ft*	*4-6 ft*	*8-9.2 ft*	*8-8.5 ft*	*4-6 ft*
Sample Matrix Code:	*(Jan. 24, 1994)*	*SO*	*SO*	*SO*	*SO*	*SO*	*SO*	*SO*	*SO*	*SO*	*SO*	*SO*
Class Code:		*Boring*	*Boring*	*Boring*	*Boring*	*Boring*	*Boring*	*Boring*	*Boring*	*Boring*	*Boring*	*Boring*
Volatiles												
ACETONE	0.2	--	NA	0.013	0.0087 J	0.012	0.01 J	0.0084 J	NA	--	--	0.0098 J
BUTANONE, 2- (MEK)	0.3	--	NA	--	--	--	--	--	NA	--	--	--
ETHYLBENZENE	5.5	--	NA	--	--	0.0021 SJ	--	--	NA	0.0022 IJ	--	--
METHYLENE CHLORIDE	0.1	0.014 DJ	NA	0.011	0.036	0.024	0.017	0.012	NA	0.016	--	--
TETRACHLOROETHYLENE	1.4	--	NA	--	--	0.0023 SJ	--	--	NA	--	--	--
TOLUENE	1.5	0.024 DJ	NA	0.0056	0.024	0.025	0.015	0.0094	NA	0.0043 IJ	0.0041 J	0.0036 J
TRICHLOROETHYLENE	0.7	--	NA	--	--	0.0034 J	--	--	NA	0.093 I	0.063	--
XYLENE (TOTAL)	1.2	--	NA	--	--	0.0018 SJ	--	--	NA	0.0025 IJ	--	--
Semi-Volatiles												
ACENAPHTHENE	50	1 DJ	NA	--	--	--	--	--	NA	--	--	--
ANTHRACENE	50	1.1 DJ	NA	--	--	--	--	--	NA	--	--	--
BENZO(A)ANTHRACENE	0.224 or MDL	3.2 DJ	NA	--	--	--	--	0.083 J	NA	--	--	--
BENZO(A)PYRENE	0.061 or MDL	2.6 DJ	NA	--	--	--	--	--	NA	--	--	--
BENZO(B)FLUORANTHENE	1.1	3.1 DJ	NA	--	--	--		--	NA	--	--	--
BENZO(G,H,I)PERYLENE	50	1.4 DJ	NA	--	--	--	--	--	NA	--	--	--
BENZO(K)FLUORANTHENE	1.1	1.2 DJ	NA	--	--	--	--	--	NA	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	50	0.48 DJ	NA	0.45 J	0.16 J	1.4	0.29 J	0.14 J	NA	1	0.095 J	--
CHRYSENE	0.4	3.7 DJ	NA	--	--	--	--	0.085 J	NA	--	--	--
DI-N-BUTYLPHTHALATE	8.1	--	NA	--	--	0.098 J	--	--	NA	--	--	--
FLUORANTHENE	50	5.1 DJ	NA	--	--	--	--	0.18 J	NA	--	--	--
FLUORENE	50	0.88 DJ	NA	--	--	--	--	--	NA	--	--	--
INDENO(1,2,3-CD)PYRENE	3.2	1.5 DJ	NA	--	--	--	--	--	NA	--	--	--
METHYLNAPHTHALENE, 2-	36.4	6.7 D	NA	--	--	--	--	--	NA	--	--	--
NAPHTHALENE	13.0	1.7 DJ	NA	--	--	--	--	--	NA	--	--	--
NITROSODIPHENYLAMINE, N-	NV	1.2 DJ	NA	--	--	--	--	--	NA	--	--	--
PHENANTHRENE	50	4.3 DJ	NA	--	--	--	--	0.11 J	NA	--	--	--
PYRENE	50	6.2 DJ	NA	--	--	--	--	0.17 J	NA	--	--	--
Metals												
ALUMINUM	SB	4980	NA	5540	3910	2890	3080	3730	NA	3030	6420	5720
ANTIMONY	SB	--	NA	--	--	1.8 NJ	--	1.84 NJ	NA	1.64 NJ	--	--
ARSENIC	7.5 or SB	3.71	NA	3.85	8.17	15.1	2.93	5.37	NA	5.77	4.76	4.65
BARIUM	300 or SB	29.4	NA	39.3	21.6 J	48.8	15.8 J	29.8	NA	14.1 J	88.5	28.8
BERYLLIUM	0.16 (HEAST) or SB	0.242 J	NA	0.261 J	0.325 J	0.374 J	0.155 J	0.231 J	NA	0.26 J	0.333 J	0.269 J
CADMIUM	1 or SB	--	NA	0.666 N*	--	--	--	--	NA	--	--	--
CALCIUM	SB	136000 D	NA	77000 D	154000 D	181000 D	9650	117000 D	NA	224000 D	180000 D	22000
CHROMIUM	10 or SB	7.91	NA	9.37	5.64	5.25	5.04	8.05	NA	4.86	9.42	15.5
COBALT	30 or SB	3.8 J	NA	3.43 J	4.77 J	9.76	3.66 J	4.5 J	NA	4.31 J	4.08 J	6.74
COPPER	25 or SB	14.5	NA	24.5	6.39	24.1	6.34	11.4	NA	8.83	14.1	38.3
IRON	2000 or SB	10100	NA	10800	11900	19900	8960	11300	NA	8910	10800	12300
LEAD	SB****	13.8 *	NA	29.8 *	15.4 *	41.3 *	5.25 *	16.1 *	NA	12.3 *	34.5 *	6.84 *
MAGNESIUM	SB	29500	NA	20700	19400	7060	6160	29000	NA	13700	21400	7700
MANGANESE	SB	363	NA	261	298	901	204	316	NA	343	367	570
MERCURY	0.1	0.046	NA	--	--	--	--	--	NA	--	--	--
NICKEL	13 or SB	11.5	NA	9.96	12.7	21.4	9.56	12.2	NA	12.3	11.9	134
POTASSIUM	SB	1840	NA	1220	3110	1780	506 J	1800	NA	2900	2370	1060
SELENIUM	2 or SB	0.23 J	NA	0.22 J	0.32 J	0.28 J	0.19 J	0.23 J	NA	0.21 J	0.25 J	0.28 J
SILVER	SB	5.64	NA	2.75	1.37	0.336 J	3.43	0.347 J	NA	0.854 J	12	0.625 J
SODIUM	SB	364 J	NA	345 J	644	1860	456 J	405 J	NA	581	905	439 J
VANADIUM	150 or SB	12.1	NA	16.1	7.09	12.7	8.02	9.27	NA	6.19	13.1	13.9
ZINC	20 or SB	44.9	NA	68.2	8.36	11.1	31.3	29.5	NA	37.7	73.8	124
Radiology												
THORIUM-228 (pCi/g)	NV	NA	0.37	0.33	NA	NA	0.29	NA	0.49	NA	NA	NA
THORIUM-230 (pCi/g)	NV	NA	0.42	0.22	NA	NA	0.29	NA	0.2	NA	NA	NA
THORIUM-232 (pCi/g)	NV	NA	0.45	0.3	NA	NA	0.26	NA	0.42	NA	NA	NA
General Chemistry												
pH (s.u.)	NV	NA	NA	NA	NA	8.7 H	NA	9.6 H	NA	NA	NA	NA
CYANIDE (TOTAL)	***	NA	NA	NA	NA	0.598	NA	0.382	NA	NA	NA	NA
NITRATE	NV	NA	NA	NA	NA	4.7 J	NA	7.7 J	NA	NA	NA	NA
SULFATE	NV	NA	NA	NA	NA	84	NA	83	NA	NA	NA	NA

Notes:
All results are reproted in milligrams per kilogram (mg/kg) unless otherwise noted.
Analytical qualifiers and other notes are presented on final page.
Highlighted cells indicate the concentration shown is above the cleanup guidance value.

TABLE 1 - 2005 Phase II ESA (Page 2)

DETECTED SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS, SEMI-VOLATILE ORGANIC COMPOUNDS AND INORGANIC COMPOUNDS
HAWKEYE FACILITY, ROCHESTER, NEW YORK

Sample Location:	*Recommended*	*B03HEPL204182004*	*B01HEPL504172004*	*B02HEPL504172004*	*B01HEPL604172004*	*B02HEPL604172004*	*B01HEPL1104182004*		*B01HEPL1104192004*
Sample Date:	*Soil Cleanup*	*4/18/2004*	*4/17/2004*	*4/17/2004*	*4/17/2004*	*4/17/2004*	*4/18/2004*		*4/19/2004*
Sample ID:	*Objectives*	*L22468-3*	*L22467-4*	*L22467-5*	*L22467-2*	*L22467-3*	*L22468-4*	*L22468-5*	*L22477-2*
Sample Depth:	*TAGM 4046*	*6-8 ft*	*10-12 ft*	*6-8 ft*	*4-6 ft*	*8-10 ft*	*4-6 ft*	*8-10 ft*	*6-8 ft*
Sample Matrix Code:	*(Jan. 24, 1994)*	*SO*	*SO*	*SO*	*SO*	*SO*	*SO*	*SO*	*SO*
Class Code:		*Boring*	*Boring*	*Boring*	*Boring*	*Boring*	*Boring*	*Boring*	*Boring*
Volatiles									
ACETONE	0.2	--	0.0098 J	--	0.033	--	0.065 D	0.015	--
BUTANONE, 2- (MEK)	0.3	--	--	--	0.011 J	--	--	0.0062 J	--
ETHYLBENZENE	5.5	--	--	--	0.036	--	0.046 D	0.0023 J	29 DJ
METHYLENE CHLORIDE	0.1	--	--	--	0.0016 J	--	0.017 DJ	0.0072	--
TETRACHLOROETHYLENE	1.4	0.015	--	--	--	--	--	--	--
TOLUENE	1.5	0.0041 J	0.004 J	0.0016 J	0.0069	--	0.011 DJ	0.0026 J	--
TRICHLOROETHYLENE	0.7	0.021	--	--	--	--	--	--	--
XYLENE (TOTAL)	1.2	--	--	--	0.35 DH	--	0.079 D	0.0073	27 DJ
Semi-Volatiles									
ACENAPHTHENE	50	--	--	--	--	--	--	--	0.095 J
ANTHRACENE	50	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	0.224 or MDL	--	--	--	0.1 J	--	--	--	--
BENZO(A)PYRENE	0.061 or MDL	--	--	--	0.13 J	--	--	--	--
BENZO(B)FLUORANTHENE	1.1	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	50	--	--	--	0.12 J	--	--	--	--
BENZO(K)FLUORANTHENE	1.1	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	50	1.3	--	--	--	--	0.1 J	0.099 J	20 D
CHRYSENE	0.4	--	--	--	0.12 J	--	--	--	--
DI-N-BUTYLPHTHALATE	8.1	0.12 J	--	--	--	0.096 J	--	--	0.12 J
FLUORANTHENE	50	--	--	--	0.2 J	--	--	--	--
FLUORENE	50	--	--	--	0.17 J	--	--	--	0.16 J
INDENO(1,2,3-CD)PYRENE	3.2	--	--	--	0.11 J	--	--	--	--
METHYLNAPHTHALENE, 2-	36.4	--	--	--	--	--	--	--	19 D
NAPHTHALENE	13.0	--	--	--	--	--	--	--	10
NITROSODIPHENYLAMINE, N-	NV	--	--	--	--	--	--	--	--
PHENANTHRENE	50	--	--	--	0.23 J	--	0.089 J	--	0.29 J
PYRENE	50	--	--	--	0.23 J	--	--	--	0.096 J
Metals									
ALUMINUM	SB	4500	3540	3340	5710	5980	3570	NA	3460
ANTIMONY	SB	2.04 NJ	--	--	--	--	--	NA	--
ARSENIC	7.5 or SB	8.09	4.13	3.1	5.58	6.92	2.23	NA	1.94
BARIUM	300 or SB	31.5	36.3	46.4	51.3	37.4	17.4 J	NA	15.9 J
BERYLLIUM	0.16 (HEAST) or SB	0.373 J	0.19 J	0.18 J	0.327 J	0.314 J	0.164 J	NA	0.155 J
CADMIUM	1 or SB	--	--	--	6.2 N*	--	--	NA	--
CALCIUM	SB	140000 D	92400 D	85500 D	18500	35100	38400	NA	29300
CHROMIUM	10 or SB	7.51	6.07	6.63	8.56	10.4	5.62	NA	6.11
COBALT	30 or SB	4.84 J	3.73 J	4.48 J	5.28 J	9.73	4.29 J	NA	3.69 J
COPPER	25 or SB	10.9	7.92	7.83	38.1	21.7	11.2	NA	7.41
IRON	2000 or SB	13600	9800	9650	11500	21700	9070	NA	8900
LEAD	SB****	22.3 *	4.53 *	7.03 *	1080 *	8.57 *	5.86 *	NA	4.94 *
MAGNESIUM	SB	17700	20500	12000	4880	4850	7840	NA	6370
MANGANESE	SB	360	488	333	259	441	480	NA	315
MERCURY	0.1	--	--	--	0.0559	--	--	NA	--
NICKEL	13 or SB	16.3	9.36	10.3	14.6	18.9	9.77	NA	8.73
POTASSIUM	SB	3190	1290	1430	942	1510	846	NA	723
SELENIUM	2 or SB	0.27 J	0.22 J	0.2 J	0.24 J	0.4 J	0.18 J	NA	0.19 J
SILVER	SB	0.323 J	--	--	--	--	--	NA	--
SODIUM	SB	1660	743	642	902	1250	1730	NA	1680
VANADIUM	150 or SB	9.15	11.9	10.7	14.3	22.1	10.3	NA	12.8
ZINC	20 or SB	10.5	18.7	24.1	244	36.7	46.7	NA	16.7
Radiology									
THORIUM-228 (pCi/g)	NV	NA	NA	NA	NA	NA	NA	NA	NA
THORIUM-230 (pCi/g)	NV	NA	NA	NA	NA	NA	NA	NA	NA
THORIUM-232 (pCi/g)	NV	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry									
pH (s.u.)	NV	NA	NA	NA	NA	NA	NA	NA	NA
CYANIDE (TOTAL)	***	NA	NA	NA	NA	NA	NA	NA	0.257 J
NITRATE	NV	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	NV	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
All results are reproted in milligrams per kilogram (mg/kg) unless otherwise noted.
Analytical qualifiers and other notes are presented on final page.
Highlighted cells indicate the concentration shown is above the cleanup guidance value.

TABLE 2 - 2005 Phase II ESA

DETECTED GROUNDWATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS, SEMI-VOLATILE ORGANIC COMPOUNDS AND INORGANIC COMPOUNDS
HAWKEYE FACILITY, ROCHESTER, NEW YORK

Well ID:	*NYS Ambient*	*SB4NE*	*SB4NE*	*IB5NE*	*IB5SW*	*IB5SW2*	*IB6NE*	*IB11AW*	*IB12SW*	*IL2NE*	*SL6SE*	*SL11W*
Loc Group:	*Water Quality*	*B4NE*	*B4NE*	*B5NE*	*B5SW*	*B5SW2*	*B6NE*	*B11AW*	*B12SW*	*L2NE*	*L6SE*	*L11W*
Flow Zone:	*Standards*	*OVR/TOR*	*OVR/TOR*	*OVR/TOR*	*OVR/TOR*	*OVR/TOR*	*OVR/TOR*	*OVR/TOR*	*OVR/TOR*	*OVR/TOR*	*OVR*	*OVR*
Sample ID:	*Guidance Values*	*L22580-4*	*L22591-6*	*L22591-4*	*L22580-6*	*L22580-7*	*L22591-3*	*L22580-2*	*L22580-3*	*L22580-5*	*L22591-2*	*L22591-5*
Sample Type:	*(TOGs 1.1.1)*	*N*	*N*	*N*	*N*	*N*	*N*	*N*	*N*	*N*	*N*	*N*
Sample Date:	*(June 1998)*	*5/6/2004*	*5/7/2004*	*5/7/2004*	*5/6/2004*	*5/6/2004*	*5/7/2004*	*5/6/2004*	*5/6/2004*	*5/6/2004*	*5/7/2004*	*5/7/2004*
Volatile Organics												
ACETONE	0.050	0.12 P	NA	--	--	--	--	--	--	--	--	--
BENZENE	0.001	0.0031 JP	NA	--	--	--	--	--	--	--	--	0.029 DJ
BUTANONE, 2- (MEK)	0.050	0.018 P	NA	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	NV	0.0055 P	NA	--	--	0.0031 JP	--	--	0.0028 JP	--	--	--
DICHLOROETHYLENE, 1,2- (TOTAL)	0.005	--	NA	--	0.023	0.0035 JP	--	0.012	--	--	--	--
ETHYLBENZENE	0.005	0.012 P	NA	--	--	--	--	--	--	--	--	0.87 D
TOLUENE	0.005	0.0085 P	NA	--	--	--	--	--	0.0015 JP	--	--	0.38 D
TRICHLOROETHYLENE	0.005	--	NA	--	0.0048 J	0.0077 P	--	0.016	0.028 P	0.0039 J	--	--
XYLENE (TOTAL)	0.005	0.048 P	NA	--	--	--	--	--	--	--	0.13 D	1.7 D
TOTAL VOCs	NV	0.2151	NA	0	0.0278	0.0143	0	0.028	0.0323	0.0039	0.13	2.979
Semi-Volatiles												
ACENAPHTHENE	0.020	NA	0.0059 DJ	--	--	--	--	--	--	--	--	--
BENZOIC ACID	NV	NA	0.042 DJ	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	0.005	NA	0.029 D	0.0071 J	--	--	0.0027 J	--	0.0031 J	--	0.003 J	0.011 DJ
FLUORENE	0.050	NA	0.0046 DJ	--	--	--	--	--	--	--	--	--
METHYLNAPHTHALENE, 2-	NV	NA	0.02 D	--	--	--	--	--	--	--	0.016	0.056 D
METHYLPHENOL, 2-	0.001	NA	0.031 D	--	--	--	--	--	--	--	--	--
METHYLPHENOL, 3&4-	0.001	NA	0.018 D	--	--	--	--	--	--	--	--	--
NAPHTHALENE	0.010	NA	0.0047 DJ	--	--	--	--	--	--	--	0.018	0.31 D
PHENANTHRENE	0.050	NA	0.013 DJ	--	--	--	--	--	--	--	--	--
PHENOL	0.001	NA	0.014 DJ	--	--	--	--	--	--	--	--	--
PYRENE	0.050	NA	0.0057 DJ	--	--	--	--	--	--	--	--	--
Metals												
ALUMINUM	NV	7.16	NA	2.43	1.71	0.499	0.437	2.1	0.827	2.11	0.611	5.12
ARSENIC	0.025	0.0108	NA	0.00549 J	--	--	--	--	0.00683 J	--	0.0047 J	0.00323 J
BARIUM	1	0.168 J	NA	0.173 J	0.343	0.135 J	0.296	0.253	0.107 J	0.127 J	2.49	0.796
CALCIUM	NV	1450 D	NA	761 D	447	1400 D	1220 D	408	363	481	1370 D	1050 D
CHROMIUM	0.050	0.00646 J	NA	0.00351 J	0.00524 J	--	--	0.0039 J	0.00256 J	0.00851 J	--	0.0104
COBALT	NV	--	NA	--	--	0.0341 J	--	--	0.0133 J	--	--	--
COPPER	0.2	0.00955 J	NA	0.0165 J	0.0073 J	--	--	--	0.00961 J	0.00809 J	--	0.0307
IRON	0.3	5.57	NA	7.1	4.76	5.53	6.19	4.93	6.29	6.87	20.4	13.7
LEAD	0.025	0.00921	NA	0.0219	0.0164	0.00144 J	0.00286 J	0.012	0.018	0.0185	0.00519	0.0349
MAGNESIUM	35	40.5	NA	203	69.8	87.5	82.2	92.2	102	78.4	101	98.5
MANGANESE	0.3	1.27	NA	1.34	0.507	1.66	2.04	0.464	0.657	0.612	1.31	4.11
NICKEL	0.1	0.0293 J	NA	0.0108 J	0.00931 J	0.0404	0.0187 J	0.00754 J	0.0306 J	0.0241 J	0.0113 J	0.0101 J
POTASSIUM	NV	159 D	NA	32.8	31	54.3 D	15.9	16	44.9	20.5	17.8	80.6 D
SELENIUM	0.010	0.00179 J	NA	0.0014 J	0.00144 J	0.00157 J	0.00168 J	0.00144 J	0.00139 J	0.00141 J	0.0018 J	0.00194 J
SILVER	0.050	0.00865 J	NA	0.00543 J	0.00267 J	0.00784 J	0.00757 J	--	--	0.00361 J	0.00847 J	0.00576 J
SODIUM	20	515	NA	3150 D	1650 D	1170 D	362	367	783	1300 D	3640 D	11700 D
THALLIUM	0.0005	0.00329 J	NA	--	--	--	--	0.00452 J	0.00407 J	0.00439 J	0.00795 J	--
ZINC	2	0.0375 B	NA	0.0277 B	0.0175 J	0.015 JB	0.0226 B	0.0365 B	0.0368 B	0.0305 B	0.0329 B	0.0632 B
Radiology												
THORIUM-228 (pCi/L)	NV	NA	NA	NA	--	NA	NA	0.58	0.53	1.1	NA	NA
THORIUM-230 (pCi/L)	NV	NA	NA	NA	--	NA	NA	1.3	2.1	2.1	NA	NA
THORIUM-232 (pCi/L)	NV	NA	NA	NA	3.7	NA	NA	0.54	0.46	1.1	NA	NA

Notes:
All results are reported in milligrams per liter (mg/L) unless otherwise noted.
Qualifiers are presented on final page.
Highlighted cells indicate the concentration shown is above the guidance value.

Phase II ESA
Eastman Kodak Company
Hawkeye Facility
St. Paul Street
Rochester, New York

Table 3 - 2017 Phase II ESA (Page 1)

Summary of Detected Compounds in Soil

Sample ID	Units	NYCRR Part 375 Unrestricted Use SCOs	NYCRR Part 375 Restricted Residential Use SCOs	NYCRR Part 375 Commercial Use SCOs	TP-1B	TP-4	SB-01	SB-02	SB-10	SB-10	SB-11	SB-13	SB-13	SB-13	SB-13	SB-14	SB-15	SB-16	SB-17	SB-18	SB-18
Sample Depth (ft bgs)					5-6	5-6	11-13	8-10	9-10	10-11	11-12	6-8	7-10	8-11	11-11.8	1.9-2.4	4-6	4-9.8	0.5-2.3	0.4-1.7	4-5
Sample Date					9/14/2017	9/14/2017	8/30/2017	8/30/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017
Metals																					
Aluminum	mg/kg	NL	NL	NL			3470					3780					8350	4240	4310	5700	
Antimony	mg/kg	NL	NL	NL			<3.4					<3.3					<3.9	<3.8	<3.2	<3.1	
Arsenic	mg/kg	13	16	16			4.6					6.6					**14.3**	7.0	6.2	5.2	
Barium	mg/kg	350	400	400			36.5					25.5					83.1	22.7	26.5	75.2	
Beryllium	mg/kg	7.2	72	590			0.21 J					0.28					0.35	0.22 J	0.28	0.10 J	
Cadmium	mg/kg	2.5	4.3	9.3			0.25					0.31					0.50	1.6	0.33	0.52	
Calcium	mg/kg	NL	NL	NL			157000					134000					14000	119000	137000	145000	
Chromium	mg/kg	30	180	1500			2.0					2.0					5.3	3.3	2.8	8.0	
Cobalt	mg/kg	NL	NL	NL			3.2					3.4					6.9	4.1	3.1	3.0	
Copper	mg/kg	50	270	270			14.1					17.3					25.8	**53.8**	10.4	12.6	
Iron	mg/kg	NL	NL	NL			9210					10300					22100	11000	10400	9480	
Lead	mg/kg	63	400	1000	NA	NA	16.6	NA	NA	NA	NA	15.7	NA	NA	NA	NA	16.6	18.8	20.6	21.2	NA
Magnesium	mg/kg	NL	NL	NL			14800					21900					4570	18200	22100	48800	
Manganese	mg/kg	1600	2000	10000			342					334					898	367	277	319	
Nickel	mg/kg	30	310	310			8.2					7.1					16.8	**95.5**	8.4	7.9	
Potassium	mg/kg	NL	NL	NL			1930					2330					1580	1870	2550	1420	
Selenium	mg/kg	3.9	180	1500			<0.57					<5.5					<0.66	<6.3	<5.3	<5.2	
Silver	mg/kg	2	180	1500			<0.57					<0.55					1.2	1.5	1.3	**2.3**	
Sodium	mg/kg	NL	NL	NL			2240					1890					1720	2040	2680	2760	
Thallium	mg/kg	NL	NL	NL			<0.57					0.34 J					0.97	<0.63	0.30 J	<0.52	
Vanadium	mg/kg	NL	NL	NL			6.7					6.7					16.6	8.0	6.9	13.0	
Zinc	mg/kg	109	10000	10000			16.8					43.1					62.3	91.7	59.7	80.2	
Mercury	mg/kg	0.18	0.81	2.8			0.13					0.057					0.13	**0.29**	0.052	0.091	
PCBs																					
PCB-1242	mg/kg	0.1	1	1	NA	NA	NA	NA	<0.0364	NA	<0.0386	NA	<0.0371	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	mg/kg	0.1	1	1					ND		ND		ND								
VOCs																					
2-Butanone (MEK)	mg/kg	0.12	100	500	NA	NA	<0.0027	<0.121		<0.0023	<0.0023				<0.0021	0.0035					<0.0025
Acetone	mg/kg	0.05	100	500	NA	NA	<0.0027	<0.121		0.0069	0.0012 J				0.0036	0.0114					0.0131
Cyclohexane	mg/kg	NL	NL	NL	NA	NA	<0.0027	1.7		<0.0023	<0.0023				<0.0021	<0.0026					<0.0025
Ethylbenzene	mg/kg	1	41	390	0.913	**115**	<0.0027	0.100 J		<0.0023	<0.0023				<0.0021	<0.0026					<0.0025
Isopropylbenzene (Cumene)	mg/kg	NL	NL	NL	1.41	23.3	<0.0027	0.255		<0.0023	<0.0023				<0.0021	<0.0026					<0.0025
Methylcyclohexane	mg/kg	NL	NL	NL	NA	NA	<0.0027	8.31		<0.0023	<0.0023				<0.0021	<0.0026					<0.0025
Methylene Chloride	mg/kg	0.05	100	500	NA	NA	0.0024 J	<0.121		0.0018 J	0.0016 J				0.0016 J	0.0014 J					<0.0025
Tetrachloroethene	mg/kg	1.3	19	150	NA	NA	<0.0027	<0.121		<0.0023	<0.0023				<0.0021	0.008					<0.0025
Trichloroethene	mg/kg	0.47	21	200	NA	NA	<0.0027	<0.121		<0.0023	0.0012 J				<0.0021	0.0436					0.0017 J
Xylene (Total)	mg/kg	0.26	100	500	<0.5	**134**	<0.0055	0.120 J		<0.0047	<0.0046				<0.0043	<0.0052					<0.0049
cis-1,2-Dichloroethene	mg/kg	0.25	100	500	NA	NA	<0.0027	<0.121	NA	<0.0023	<0.0023	NA	NA	NA	<0.0021	0.0014 J	NA	NA	NA	NA	<0.0025
n-Butylbenzene	mg/kg	12	NL	NL	9.38	**52.5**	<0.0027	NA		NA	NA				NA	NA					NA
sec-Butylbenzene	mg/kg	11	100	500	4.43	<2.82	<0.0027	NA		NA	NA				NA	NA					NA
tert-Butylbenzene	mg/kg	5.9	100	500	<0.25	<2.82	<0.0027	NA		NA	NA				NA	NA					NA
p-Isopropyltoluene	mg/kg	NL	NL	NL	0.983	9.6	<0.0027	NA		NA	NA				NA	NA					NA
Methyl tert-butyl ether	mg/kg	0.93	100	500	<0.25	<2.82	<0.0027	<0.121		<0.0023	<0.0023				<0.0021	0.0014 J					<0.0025
Naphthalene	mg/kg	12	100	500	0.365	**28.3**	<0.0027	NA		NA	NA				NA	NA					NA
n-Propylbenzene	mg/kg	3.9	100	500	**8.02**	**97.4**	<0.0027	NA		NA	NA				NA	NA					NA
Toluene	mg/kg	0.7	100	500	<0.25	<2.82	<0.0027	<0.121		<0.0023	<0.0023				<0.0021	0.0014 J					<0.0025
1,2,4-trimethylbenzene	mg/kg	3.6	52	190	<0.25	**585**	<0.0027	NA		NA	NA				NA	NA					NA
1,3,5-trimethylbenzene	mg/kg	8.4	52	190	<0.25	**63.5**	<0.0027	NA		NA	NA				NA	NA					NA
SVOCs																					
2-Methylnaphthalene	mg/kg	NL	NL	NL	NA	NA	<0.0800							<0.0751		<0.0822					
Naphthalene	mg/kg	12	100	500	<0.0817	7.05	<0.0800	NA	NA	NA	NA	NA	NA	<0.0751	NA	<0.0822	NA	NA	NA	NA	NA
Phenanthrene	mg/kg	100	100	500	<0.0817	0.0925	<0.0800							<0.0751		<0.0822					
Thorium																					
Thorium-228	pCi/g	6.06[A]	6.06[A]	6.06[A]																	
Thorium-230	pCi/g	6.06[A]	6.06[A]	6.06[A]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-232	pCi/g	6.06[A]	6.06[A]	6.06[A]																	

NOTES:
"<" indicates compound not detected above laboratory method detection limit (MDL) with the limit shown
Thorium data displayed as "Activity (± Uncertainty - 95% Confidence Interval)".
[A] Part 375 comparison criteria not listed for radionuclides. Values shown are the "General Soil Screening Levels for Radionuclides: Migration to Groundwater: 20DAF" obtained from Appendix A of the USEPA's Soil Screening Guidance for Radionuclides Technical Background Document.
"20 DAF" indicates a dilution factor of 20 to account for natural processes that reduce contaminant concentrations in the subsurface.
VOCs analyzed by USEPA Method 8260
SVOCs analyzed by USEPA Method 8270
Metals analyzed by USEPA Method 6010/7470
PCBs analyzed by USEPA Method 8082
Thorium Isotopes analyzed by USEPA Method HSL 300
Bold font indicates value above NYCRR Part 375 6-8 (a) Unrestricted Use SCOs
Yellow highlighted cells indicates value above NYCRR Part 375 6-8 (b) Restricted Residential Use SCOs
Red font indicates value above NYCRR Part 375-6.8(b) Commercial Use SCOs
NL indicates Not Listed
NA indicates Not Analyzed
ND indiates non-detect
J indicates an estimated value
* indicates data not yet received from laboratory.

Phase II ESA
Eastman Kodak Company
Hawkeye Facility
St. Paul Street
Rochester, New York

Table 3 - 2017 Phase II ESA (Page 2)

Summary of Detected Compounds in Soil

Sample ID	Units	NYCRR Part 375 Unrestricted Use SCOs	NYCRR Part 375 Restricted Residential Use SCOs	NYCRR Part 375 Commercial Use SCOs	SB-22	SB-24	SB-26	SB-27	SB-29	SB-29	SB-29	SB-30	SB-31	BLIND DUP 1 (SB-10)	BLIND DUP 1 (SB-10)	BLIND DUP 2 (SB-13)	BLIND DUP 3 (SB-15)	BLIND DUP-4 (SB-26)	BLIND DUP-5 (SB-27)	BLIND DUP-6 (SB-29)	BLIND DUP-6 (SB-29)	BLIND DUP-7 (SB-30)
Sample Depth (ft bgs)					8-10	6-9	6.5-10	7-10	4-4.8	6-8	8-8.4	6-8.6	3-6	9-10	10-11	8-11	4-6	6.5-10	7-10	8-8.4	6-8	6-8.6
Sample Date					9/1/2017	9/1/2017	9/1/2017	9/1/2017	9/6/2017	9/6/2017	9/6/2017	9/6/2017	9/6/2017	8/31/2017	8/31/2017	8/31/2017	8/31/2017	9/1/2017	9/1/2017	9/6/2017	9/6/2017	9/6/2017
Metals																						
Aluminum	mg/kg	NL	NL	NL	3530	NA	3870	NA	NA	NA	NA	3500	NA	NA	NA	NA	10000	6500	NA	NA	NA	6120
Antimony	mg/kg	NL	NL	NL	<3.5	NA	<3.7	NA	NA	NA	NA	<3.2	NA	NA	NA	NA	<4.0	<3.5	NA	NA	NA	<3.7
Arsenic	mg/kg	13	16	16	2.7	NA	4.3	NA	NA	NA	NA	8.1	NA	NA	NA	NA	11.5	8.0	NA	NA	NA	8.1
Barium	mg/kg	350	400	400	43.1	NA	36.3	NA	NA	NA	NA	44.9	NA	NA	NA	NA	93.3	47.1	NA	NA	NA	37
Beryllium	mg/kg	7.2	72	590	<0.29	NA	0.058 J	NA	NA	NA	NA	0.20 J	NA	NA	NA	NA	0.47	0.14 J	NA	NA	NA	0.26 J
Cadmium	mg/kg	2.5	4.3	9.3	0.19	NA	0.24	NA	NA	NA	NA	0.37	NA	NA	NA	NA	0.71	0.42	NA	NA	NA	0.36
Calcium	mg/kg	NL	NL	NL	27800	NA	42400	NA	NA	NA	NA	156000	NA	NA	NA	NA	33700	99700	NA	NA	NA	14400
Chromium	mg/kg	30	180	1500	3.0	NA	6.1	NA	NA	NA	NA	2.2	NA	NA	NA	NA	9.3	8.3	NA	NA	NA	4.5
Cobalt	mg/kg	NL	NL	NL	3.7	NA	4.1	NA	NA	NA	NA	4.5	NA	NA	NA	NA	8.2	6.3	NA	NA	NA	7.6
Copper	mg/kg	50	270	270	9.6	NA	13.9	NA	NA	NA	NA	12.5	NA	NA	NA	NA	40.8	19.8	NA	NA	NA	15.9
Iron	mg/kg	NL	NL	NL	9320	NA	9690	NA	NA	NA	NA	11600	NA	NA	NA	NA	21100	14900	NA	NA	NA	16100
Lead	mg/kg	63	400	1000	1.9	NA	7.2	NA	NA	NA	NA	9.6	NA	NA	NA	NA	40.1	10.8	NA	NA	NA	12.7
Magnesium	mg/kg	NL	NL	NL	6060	NA	10500	NA	NA	NA	NA	7630	NA	NA	NA	NA	13600	13800	NA	NA	NA	6250
Manganese	mg/kg	1600	2000	10000	311	NA	350	NA	NA	NA	NA	862	NA	NA	NA	NA	1030	778	NA	NA	NA	630
Nickel	mg/kg	30	310	310	7.6	NA	8.7	NA	NA	NA	NA	9.1	NA	NA	NA	NA	25.4	13.3	NA	NA	NA	16.5
Potassium	mg/kg	NL	NL	NL	698	NA	1060	NA	NA	NA	NA	1230	NA	NA	NA	NA	2330	1770	NA	NA	NA	986
Selenium	mg/kg	3.9	180	1500	<0.58	NA	<0.62	NA	NA	NA	NA	<0.53	NA	NA	NA	NA	<6.7	<0.59	NA	NA	NA	<6.2
Silver	mg/kg	2	180	1500	<0.58	NA	<0.62	NA	NA	NA	NA	<0.53	NA	NA	NA	NA	**3.6**	<0.59	NA	NA	NA	<0.62
Sodium	mg/kg	NL	NL	NL	814	NA	1330	NA	NA	NA	NA	1290	NA	NA	NA	NA	2380	1840	NA	NA	NA	<312
Thallium	mg/kg	NL	NL	NL	0.22 J	NA	0.26 J	NA	NA	NA	NA	0.49 J	NA	NA	NA	NA	0.98	0.79	NA	NA	NA	0.31 J
Vanadium	mg/kg	NL	NL	NL	11.8	NA	11.5	NA	NA	NA	NA	6.7	NA	NA	NA	NA	20.1	15.5	NA	NA	NA	11.6
Zinc	mg/kg	109	10000	10000	18.2	NA	53.3	NA	NA	NA	NA	37.1	NA	NA	NA	NA	90.4	47.5	NA	NA	NA	45.9
Mercury	mg/kg	0.18	0.81	2.8	0.029 J	NA	0.045	NA	NA	NA	NA	0.057	NA	NA	NA	NA	**0.21**	0.043	NA	NA	NA	0.06
PCBs																						
PCB-1242	mg/kg	0.1	1	1	NA	NA	NA	NA	NA	0.0647	NA	<0.0370	NA	<0.0398	NA	NA	NA	NA	NA	NA	<0.0398	NA
Total PCBs	mg/kg	0.1	1	1	NA	NA	NA	NA	NA	0.0647	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	ND	NA
VOCs																						
2-Butanone (MEK)	mg/kg	0.12	100	500	<0.0024	**0.141**	<0.124	0.105	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	0.0977	NA	<0.0023	NA	NA
Acetone	mg/kg	0.05	100	500	<0.0024	<0.111	<0.124	<0.0852	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	<0.0824	NA	<0.0023	NA	NA
Cyclohexane	mg/kg	NL	NL	NL	<0.0024	<0.111	<0.124	<0.0852	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	<0.0824	NA	<0.0023	NA	NA
Ethylbenzene	mg/kg	1	41	390	<0.0024	<0.111	0.143	0.221	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	0.856	NA	<0.0023	NA	NA
Isopropylbenzene (Cumene)	mg/kg	NL	NL	NL	<0.0024	<0.111	<0.124	0.180	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	0.349	NA	<0.0023	NA	NA
Methylcyclohexane	mg/kg	NL	NL	NL	<0.0024	<0.111	<0.124	<0.0852	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	<0.0824	NA	<0.0023	NA	NA
Methylene Chloride	mg/kg	0.05	100	500	0.0021 J	<0.111	<0.124	<0.0852	NA	NA	<0.0026	NA	NA	NA	0.0019 J	NA	NA	<0.0824	NA	<0.0023	NA	NA
Tetrachloroethene	mg/kg	1.3	19	150	<0.0024	<0.111	<0.124	<0.0852	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	<0.0824	NA	<0.0023	NA	NA
Trichloroethene	mg/kg	0.47	21	200	<0.0024	<0.111	<0.124	<0.0852	NA	NA	0.0121	NA	NA	NA	<0.0023	NA	NA	<0.0824	NA	<0.0023	NA	NA
Xylene (Total)	mg/kg	0.26	100	500	<0.0047	<0.223	<0.248	0.114 J	NA	NA	<0.0052	NA	NA	NA	<0.0046	NA	NA	0.115 J	NA	<0.0045	NA	NA
cis-1,2-Dichloroethene	mg/kg	0.25	100	500	<0.0024	<0.111	<0.124	<0.0852	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	<0.0824	NA	<0.0023	NA	NA
n-Butylbenzene	mg/kg	12	NL	NL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	mg/kg	11	100	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	mg/kg	5.9	100	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene	mg/kg	NL	NL	NL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	mg/kg	0.93	100	500	<0.0024	<0.111	<0.124	<0.0852	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	<0.0824	NA	<0.0023	NA	NA
Naphthalene	mg/kg	12	100	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	mg/kg	3.9	100	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	mg/kg	0.7	100	500	<0.0024	<0.111	<0.124	<0.0852	NA	NA	<0.0026	NA	NA	NA	<0.0023	NA	NA	<0.0824	NA	<0.0023	NA	NA
1,2,4-trimethylbenzene	mg/kg	3.6	52	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-trimethylbenzene	mg/kg	8.4	52	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs																						
2-Methylnaphthalene	mg/kg	NL	NL	NL	NA	NA	NA	1.430	NA	NA	NA	NA	NA	NA	NA	<0.0747	NA	NA	0.194	NA	NA	NA
Naphthalene	mg/kg	12	100	500	NA	NA	NA	1.240	NA	NA	NA	NA	NA	NA	NA	<0.0747	NA	NA	0.139	NA	NA	NA
Phenanthrene	mg/kg	100	100	500	NA	NA	NA	<0.0857	NA	NA	NA	NA	NA	NA	NA	<0.0747	NA	NA	<0.0745	NA	NA	NA
Thorium																						
Thorium-228	pCi/g	6.06[A]	6.06[A]	6.06[A]	NA	NA	NA	NA	0.560 (±0.212)	NA	NA	NA	0.443 (±0.222)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-230	pCi/g	6.06[A]	6.06[A]	6.06[A]	NA	NA	NA	NA	0.473 (±0.184)	NA	NA	NA	0.415 (±0.196)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium-232	pCi/g	6.06[A]	6.06[A]	6.06[A]	NA	NA	NA	NA	0.742 (±0.239)	NA	NA	NA	0.478 (±0.212)	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
"<" indicates compound not detected above laboratory method detection limit (MDL) with the lin
Thorium data displayed as "Activity (± Uncertainty - 95% Confidence Interval)".
[A]Part 375 comparison criteria not listed for radionuclides. Values shown are the "General Soil S
"20 DAF" indicates a dilution factor of 20 to account for natural processes that reduce contamina
VOCs analyzed by USEPA Method 8260
SVOCs analyzed by USEPA Method 8270
Metals analyzed by USEPA Method 6010/7470
PCBs analyzed by USEPA Method 8082
Thorium Isotopes analyzed by USEPA Method HSL 300
Bold font indicates value above NYCRR Part 375 6-8 (a) Unrestricted Use SCOs
Yellow highlighted cells indicates value above NYCRR Part 375 6-8 (b) Restricted Residential Use
Red font indicates value above NYCRR Part 375-6.8(b) Commercial Use SCOs
NL indicates Not Listed
NA indicates Not Analyzed
ND indiates non-detect
J indicates an estimated value
* indicates data not yet received from laboratory.

Phase II ESA
Eastman Kodak Company
Hawkeye Facility
St. Paul Street
Rochester, New York

On-Site Monitoring Well

Table 4 - 2017 Phase II ESA (Page 1)

Summary of Detected Compounds in Groundwater

Sample ID	Units	NYSDEC Groundwater Quality Standards	MW-01	MW-02	MW-03	MW-04	MW-07	MW-08	MW-09	MW-10	MW-11	MW-12
Screened Interval (ft bgs)			5-10	7-12	4-9	3.5-8.5	4.5-9.5	8.3-18.3	10.8-15.8	8.5-13.5	2.5-12.5	3.6-8.6
Sample Date			9/6/2017	9/6/2017	9/6/2017	9/6/2017	9/6/2017	9/7/2017	9/6/2017	9/7/2017	9/7/2017	9/7/2017
Metals												
Aluminum	ug/L	NL										
Arsenic	ug/L	25										
Barium	ug/L	1,000										
Cadmium	ug/L	5										
Calcium	ug/L	NL										
Chromium	ug/L	50										
Cobalt	ug/L	NL										
Copper	ug/L	200										
Iron	ug/L	300										
Lead	ug/L	25										
Magnesium	ug/L	35,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	ug/L	300										
Nickel	ug/L	100										
Potassium	ug/L	NL										
Selenium	ug/L	10										
Silver	ug/L	50										
Sodium	ug/L	20,000										
Thallium	ug/L	0.5										
Vanadium	ug/L	NL										
Zinc	ug/L	2,000										
Mercury	ug/L	0.7										
VOCs												
2-Butanone (MEK)	ug/L	50	<5.0	1.5 J	1.8 J	<5.0	<5.0	<5.0	1.8 J	<5.0	1.7 J	3.1 J
2-Hexanone	ug/L	50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.8 J
Acetone	ug/L	50	45.2	69	73.5	40.9	50.1	40.8	34.7	57.4	31.3	15.9
Benzene	ug/L	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.72 J
Carbon disulfide	ug/L	60	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2
Ethylbenzene	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0
Isopropylbenzene (Cumene)	ug/L	5	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	8.3	<1.0	<1.0
Methyl acetate	ug/L	NL	<1.0	<1.0	5.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl-tert-butyl ether	ug/L	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylcyclohexane	ug/L	NL	<1.0	<1.0	<1.0	3.9	1.2	<1.0	<1.0	<1.0	<1.0	1.3
Tetrachloroethene	ug/L	5	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	ug/L	5	<1.0	<1.0	1.1	1.5	1.3	<1.0	<1.0	<1.0	<1.0	1.9
Trichloroethene	ug/L	5	<1.0	<1.0	<1.0	<1.0	15.4	<1.0	<1.0	<1.0	<1.0	13.6
Xylene (Total)	ug/L	5	<2.0	<2.0	<2.0	1.3 J	1.0 J	<2.0	<2.0	3.0	<2.0	1.5 J
cis-1,2-Dichloroethene	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethylene (Total)	ug/L	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs												
2-Methylnaphthalene	ug/L	NL		<5.0							<5.0	
Acenaphthene	ug/L	20		<5.0							<5.0	
Benzoic Acid	ug/L	NL		NA							NA	
Bis(2-ethylhexyl)phthalate	ug/L	5		NA							NA	
Fluorene	ug/L	50		<5.0							<5.0	
2-Methylphenol	ug/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,4-Methylphenol	ug/L	1		NA							NA	
Phenanthrene	ug/L	50		<5.0							<5.0	
Phenol	ug/L	1		NA							NA	
Pyrene	ug/L	50		<5.0							<5.0	
Naphthalene	ug/L	10		<5.0							<5.0	
Cyanide												
Cyanide	ug/L	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thorium												
Thorium-228	pCi/L	15[(A)]									0.020 (±0.119)	0.098 (±0.231)
Thorium-230	pCi/L	15[(A)]	NA	NA	NA	NA	NA	NA	NA	NA	0.045 (±0.088)	0.040 (±0.111)
Thorium-232	pCi/L	15[(A)]									0.024 (±0.088)	0.009 (±0.111)

NOTES:
"<" indicates compound not detected above laboratory method detection limit (MDL) with the limit shown
Thorium data displayed as "Activity (± Uncertainty - 95% Confidence Interval)".
[(A)]NYCRR Part 703 Groundwater Quality Standard not listed. Values shown are the "Radionuclide Drinking Water Maximum Contaminant Levels" obtained from the USEPA's Soil Screening Guidance for Radionuclides Technical Background Document.
VOCs analyzed by USEPA Method 8260
SVOCs analyzed by USEPA Method 8270
Metals analyzed by USEPA Method 6010/7470
Cyanide analzyed by USEPA Method 9012
Thorium Isotopes analyzed by USEPA Method HSL 300
Yellow highlighted cells indicates value above NYSDEC NYCRR Part 703 Groundwater Quality Standards
NL indicates Not Listed
NA indicates Not Analyzed
2004 samples collected by Leader and the data was obtained from the 2005 Phase II ESA Report by Leader. ND indicates compound not detected
J indicates an estimated value
D indicates result is from a dilution
P indicates preservation
B indicates analyte detected in a blank
* indicates data not yet received from laboratory.

Table 4 - 2017 Phase II ESA (Page 2)

Summary of Detected Compounds in Groundwater

Sample ID	Units	NYSDEC Groundwater Quality Standards	IB5NE		IB5SW		IB5SW2		IB6NE		IB11AW		IB12SW		IL2NE		SL6SE		SL11W	SB4NE
Screened Interval (ft bgs)			19.8-29.8		5-15		4.5-19.5		14.5-24.5		13-23		5-15		14-24		5.5-14.5		8.5-22.5	5.6-13.6
Sample Date			5/7/2004	9/7/2017	5/6/2004	9/6-7/2017	5/6/2004	9/6-7/2017	5/7/2004	9/7/2017	5/6/2004	9/7/2017	5/6/2004	9/6-7/2017	5/6/2004	9/7/2017	5/7/2004	9/6-7/2017	5/7/2004	5/6-7/2004
Metals																				
Aluminum	ug/L	NL	2430		1710	97.0 J	499		437		2,100	<200	827		2,110		611	<200	5120	7160
Arsenic	ug/L	25	5.49 J		ND	<10.0	ND		ND		ND	<10.0	6.83 J		ND		4.7 J	<10.0	3.23 J	10.8
Barium	ug/L	1,000	173 J		343	14.2 J	135 J		296		253	122 J	107 J		127 J		2490	63.2 J	796	168 J
Cadmium	ug/L	5	ND		ND	0.19 J	ND		ND		ND	<2.5	ND		ND		ND	<2.5	ND	ND
Calcium	ug/L	NL	761,000 D		447,000	21,800	1,400,000 D		1,220,000 D		408	166,000	363,000		481,000		1,370,000 D	14,400	1,050,000 D	1,450 D
Chromium	ug/L	50	3.51 J		5.24 J	<10.0	ND		ND		3.9 J	<10.0	2.56 J		8.51 J		ND	<10.0	10.4	6.46 J
Cobalt	ug/L	NL	ND		ND	<50.0	34.1 J		ND		ND	1.1 J	13.3 J		ND		ND	<50.0	ND	ND
Copper	ug/L	200	16.5 J		7.3 J	<25.0	ND		ND		ND	<25.0	9.61 J		8.09 J		ND	<25.0	30.7	9.55 J
Iron	ug/L	300	7100		4760	131	5530		6190		4,930	<200	6290		6870		20,400	1,290	13,700	5570
Lead	ug/L	25	21.9		16.4	1.6 J	1.44 J		2.86 J		12	2.3 J	18		18.5		5.19	<5.0	34.9	9.21
Magnesium	ug/L	35,000	203,000	NA	69,800	6,800	87,500	NA	82,200	NA	92,200	63,700	102,000	NA	78,400	NA	101,000	2,210	98,500	40500
Manganese	ug/L	300	1340		507	2.3 J	1660		2040		464	44.2	657		612		1,310	6.2 J	4110	1270
Nickel	ug/L	100	10.8 J		9.31 J	<40.0	40.4		18.7 J		7.54 J	2.1 J	30.6 J		24.1 J		11.3 J	<40.0	10.1 J	29.3 J
Potassium	ug/L	NL	32,800		31,000	2,710 J	54300		15,900		16,000	9,100	44,900		20,500		17,800	2,400 J	80600 D	159,000 D
Selenium	ug/L	10	1.4 J		1.44 J	<10.0	1.57 J		1.68 J		1.44 J	<10.0	1.39 J		1.41 J		1.8 J	<10.0	1.94 J	1.79 J
Silver	ug/L	50	5.43 J		2.67 J	<10.0	7.84 J		7.57 J		ND	<10.0	ND		3.61 J		8.47 J	<10.0	5.76 J	8.65 J
Sodium	ug/L	20,000	3,150,000		1,650,000	81,900	1,170,000 D		362,000		367,000	648,000	783,000		1,300,000 D		3,640,000	498,000	11,700,000 D	515000
Thallium	ug/L	0.5	ND		ND	<10.0	ND		ND		4.52 J	<10.0	4.07 J		4.39 J		7.95 J	<10.0	ND	3.29 J
Vanadium	ug/L	NL	ND		ND	1.4 J	ND		ND		ND	1.0 J	ND		ND		ND	1.9 J	ND	ND
Zinc	ug/L	2,000	27.7 B		17.5 J	<20.0	15 JB		22.6 B		36.5 B	21.5	36.8 B		30.5 B		32.9 B	<20.0	63.2 B	37.5 B
Mercury	ug/L	0.7	ND		ND	0.066 J	ND		ND		ND	<0.20	ND		ND		ND	0.056 J	ND	ND
VOCs																				
2-Butanone (MEK)	ug/L	50	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	18 P
2-Hexanone	ug/L	50	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	<5.0	ND	ND
Acetone	ug/L	50	ND	22.8	ND	56.2	ND	52.7	ND	10.9	ND	16.2	ND	41.2	ND	19	ND	34.4	ND	120 J
Benzene	ug/L	1	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	29 DJ	3.1 JP
Carbon disulfide	ug/L	60	ND	<1.0	ND	<1.0	3.1 JP	<1.0	ND	<1.0	ND	<1.0	2.8 JP	<1.0	ND	<1.0	ND	<1.0	ND	5.5 P
Ethylbenzene	ug/L	5	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	2.0	870 D	12
Isopropylbenzene (Cumene)	ug/L	5	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	14.8	ND	ND
Methyl acetate	ug/L	NL	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	ND
Methyl-tert-butyl ether	ug/L	10	ND	<1.0	ND	<1.0	ND	<1.0	ND	3.1	ND	4.8	ND	<1.0	ND	<1.0	ND	<1.0	ND	ND
Methylcyclohexane	ug/L	NL	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	16.2	ND	ND
Tetrachloroethene	ug/L	5	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	2.2	ND	<1.0	ND	ND
Toluene	ug/L	5	ND	<1.0	ND	<1.0	ND	<1.0	ND	1.0	ND	<1.0	1.5 JP	<1.0	ND	<1.0	ND	<1.0	380 D	8.5 P
Trichloroethene	ug/L	5	ND	<1.0	4.8 J	<1.0	7.7 P	2.1	ND	<1.0	16	13.9	28 P	<1.0	3.9 J	8.1	ND	<1.0	ND	ND
Xylene (Total)	ug/L	5	ND	<2.0	ND	<2.0	ND	<2.0	ND	<2.0	ND	<2.0	ND	<2.0	ND	<2.0	130 D	21.9	1700 D	48 P
cis-1,2-Dichloroethene	ug/L	5	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	5.4	NA	1.6	NA	<1.0	NA	<1.0	NA	NA
trans-1,2-Dichloroethene	ug/L	5	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	<1.0	NA	1.3	NA	<1.0	NA	<1.0	NA	NA
1,2-Dichloroethylene (Total)	ug/L	5	ND	NA	23	NA	3.5 JP	NA	ND	NA	12	NA	ND	NA	ND	NA	ND	NA	ND	ND
SVOCs																				
2-Methylnaphthalene	ug/L	NL	ND		ND		ND		ND		ND		ND		ND		16	2.2 J	56 D	20 D
Acenaphthene	ug/L	20	ND		ND		ND		ND		ND		ND		ND		ND	<5.0	<5.0	5.9 DJ
Benzoic Acid	ug/L	NL	ND		ND		ND		ND		ND		ND		ND		ND	NA	ND	42 DJ
Bis(2-ethylhexyl)phthalate	ug/L	5	7.1 J		ND		ND		2.7 J		ND		3.1 J		ND		3 J	NA	11 DJ	29 D
Fluorene	ug/L	50	ND		ND		ND		ND		ND		ND		ND		ND	<5.0	ND	4.6 DJ
2-Methylphenol	ug/L	1	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	31 D
3,4-Methylphenol	ug/L	1	ND		ND		ND		ND		ND		ND		ND		ND	NA	ND	18 D
Phenanthrene	ug/L	50	ND		ND		ND		ND		ND		ND		ND		ND	<5.0	ND	13 DJ
Phenol	ug/L	1	ND		ND		ND		ND		ND		ND		ND		ND	NA	ND	14 DJ
Pyrene	ug/L	50	ND		ND		ND		ND		ND		ND		ND		ND	<5.0	ND	5.7 DJ
Naphthalene	ug/L	10	ND		ND		ND		ND		ND		ND		ND		18	9.4	310 D	4.7 DJ
Cyanide																				
Cyanide	ug/L	200	NA	NA	NA	<10.0	NA	NA	NA	NA	NA	NA	NA	<10.0	NA	NA	NA	NA	NA	NA
Thorium																				
Thorium-228	pCi/L	15[A]			ND	0.029 (±0.141)		0.117 (±0.166)		0.004 (±0.401)	0.58	1.30 (±0.458)	0.53	0.185 (±0.191)	1.1					
Thorium-230	pCi/L	15[A]	NA	NA	ND	-0.007 (±0.110)	NA	-0.022 (±0.108)	NA	-0.061 (±0.115)	1.3	0.061 (±0.122)	2.1	0.061 (±0.110)	2.1	NA	NA	NA	NA	NA
Thorium-232	pCi/L	15[A]			3.7	-0.007 (±0.110)		-0.007 (±0.108)		-0.008 (±0.114)	0.54	0.522 (±0.258)	0.46	0.030 (±0.109)	1.1					

NOTES:
"<" indicates compound not detected above laboratory method detection limit (MDL) with the limit shown
Thorium data displayed as "Activity (± Uncertainty - 95% Confidence Interval)".
[A]NYCRR Part 703 Groundwater Quality Standard not listed. Values shown are the "Radionuclide Drinking Water Maximum Contaminant Levels" obtained from the USEPA's Soil Screening Guidance for Radionuclides Technical Background Document.
VOCs analyzed by USEPA Method 8260
SVOCs analyzed by USEPA Method 8270
Metals analyzed by USEPA Method 6010/7470
Cyanide analzyed by USEPA Method 9012
Thorium Isotopes analyzed by USEPA Method HASL 300
Yellow highlighted cells indicates value above NYSDEC NYCRR Part 703 Groundwater Quality Standards
NL indicates Not Listed
NA indicates Not Analyzed
2004 samples collected by Leader and the data was obtained from the 2005 Phase II ESA Report by Leader. ND indicates compound not detected
J indicates an estimated value
D indicates result is from a dilution
P indicates preservation
B indicates analyte detected in a blank
* indicates data not yet received from laboratory.

Phase II ESA
Eastman Kodak Company
Hawkeye Facility
St. Paul Street
Rochester, New York

Table 4 - 2017 Phase II ESA (Page 3)

Summary of Detected Compounds in Groundwater

Sample ID	Units	NYSDEC Groundwater Quality Standards	BLIND DUPLICATE (SL6SE)	BLIND DUPLICATE 2 (IB5SW)	BLIND DUPLICATE 3 (IB5SW)	BLIND DUPLICATE 4 (IB12SW)	TRIP BLANK 1	TRIP BLANK 2
Screened Interval (ft bgs)			5.5-14.5	5-15	5-15	5-15	NA	NA
Sample Date			9/7/2017	9/6/2017	9/6/2017	9/6/2017	9/7/2017	9/7/2017
Metals								
Aluminum	ug/L	NL		129 J				
Arsenic	ug/L	25		<10.0				
Barium	ug/L	1,000		14.8 J				
Cadmium	ug/L	5		0.20 J				
Calcium	ug/L	NL		22,000				
Chromium	ug/L	50		1.6 J				
Cobalt	ug/L	NL		<50.0				
Copper	ug/L	200		<25.0				
Iron	ug/L	300		146				
Lead	ug/L	25		<5.0				
Magnesium	ug/L	35,000	NA	6,960	NA	NA	NA	NA
Manganese	ug/L	300		2.6 J				
Nickel	ug/L	100		1.2 J				
Potassium	ug/L	NL		2,640 J				
Selenium	ug/L	10		<10.0				
Silver	ug/L	50		<10.0				
Sodium	ug/L	20,000		82,600				
Thallium	ug/L	0.5		<10.0				
Vanadium	ug/L	NL		2.4 J				
Zinc	ug/L	2,000		<20.0				
Mercury	ug/L	0.7		0.046 J				
VOCs								
2-Butanone (MEK)	ug/L	50				<5.0	<5.0	<5.0
2-Hexanone	ug/L	50				<5.0	<5.0	<5.0
Acetone	ug/L	50				66.9	27.9	46.1
Benzene	ug/L	1				<1.0	<1.0	<1.0
Carbon disulfide	ug/L	60				<1.0	<1.0	<1.0
Ethylbenzene	ug/L	5				<1.0	<1.0	<1.0
Isopropylbenzene (Cumene)	ug/L	5				<1.0	<1.0	<1.0
Methyl acetate	ug/L	NL	NA	NA	NA	<1.0	<1.0	<1.0
Methyl-tert-butyl ether	ug/L	10				<1.0	<1.0	<1.0
Methylcyclohexane	ug/L	NL				<1.0	<1.0	<1.0
Tetrachloroethene	ug/L	5				<1.0	<1.0	<1.0
Toluene	ug/L	5				<1.0	<1.0	<1.0
Trichloroethene	ug/L	5				<1.0	<1.0	<1.0
Xylene (Total)	ug/L	5				<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	ug/L	5				1.8	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	5				1.5	<1.0	<1.0
1,2-Dichloroethylene (Total)	ug/L	5						
SVOCs								
2-Methylnaphthalene	ug/L	NL	3.2 J					
Acenaphthene	ug/L	20	<5.0					
Benzoic Acid	ug/L	NL	NA					
Bis(2-ethylhexyl)phthalate	ug/L	5	NA					
Fluorene	ug/L	50	1.4 J					
2-Methylphenol	ug/L	1	NA	NA	NA	NA	NA	NA
3,4-Methylphenol	ug/L	1	NA					
Phenanthrene	ug/L	50	<5.0					
Phenol	ug/L	1	NA					
Pyrene	ug/L	50	<5.0					
Naphthalene	ug/L	10	10.9					
Cyanide								
Cyanide	ug/L	200	NA	NA	<10.0	NA	NA	NA
Thorium								
Thorium-228	pCi/L	15[A]						
Thorium-230	pCi/L	15[A]	NA	NA	NA	NA	NA	NA
Thorium-232	pCi/L	15[A]						

NOTES:
"<" indicates compound not detected above laboratory method detection limit (MDL) with the limit shown
Thorium data displayed as "Activity (± Uncertainty - 95% Confidence Interval)".
[A]NYCRR Part 703 Groundwater Quality Standard not listed. Values shown are the "Radionuclide Drinking Water Maximum Contaminant Levels" obtained from the USEPA's Soil Screening Guidance for Radionuclides Technical Background Document.
VOCs analyzed by USEPA Method 8260
SVOCs analyzed by USEPA Method 8270
Metals analyzed by USEPA Method 6010/7470
Cyanide analyzed by USEPA Method 9012
Thorium Isotopes analyzed by USEPA Method HASL 300
Yellow highlighted cells indicates value above NYSDEC NYCRR Part 703 Groundwater Quality Standards
NL indicates Not Listed
NA indicates Not Analyzed
2004 samples collected by Leader and the data was obtained from the 2005 Phase II ESA Report by Leader. ND indicates compound not detected
J indicates an estimated value
D indicates result is from a dilution
P indicates preservation
B indicates analyte detected in a blank
* indicates data not yet received from laboratory.

Phase II ESA
Eastman Kodak Company
Hawkeye Facility
St. Paul Street
Rochester, New York

Table 5 - 2017 Phase II ESA (Page 1)
Summary of Soil Vapor Intrusion Testing

Building Number	Building 11		Building 11a		Building 6		Building 10		Building 12				
Sample ID	SS-01	IAQ-01	SS-02	IAQ-02	SS-03	IAQ-03	SS-04	IAQ-04	SS-05	IAQ-05	NYSDOH Sub-Slab Vapor Concentration Decision Matrix (minimum action level) (1)	NYSDOH Indoor Air Concentration (minimum action level) (1)	NYSDOH Guidance Table C2. USEPA BASE Database - 90th Percentile (2)
Sample Type	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air	Sub-Slab	Indoor Air			
Sample Date	9/8/2017	9/8/2017	9/8/2017	9/8/2017	9/8/2017	9/8/2017	9/8/2017	9/8/2017	9/8/2017	9/8/2017			
1,1,1-Trichloroethane	13	<0.82	13	<0.82	2.0	<0.82	2.7	<0.82	<0.82	<0.82	100***	3***	20.6
1,2,4-Trimethylbenzene	3.4	<0.74	9.0	0.54 J	6.3	0.64 J	6.7	0.59 J	6.3	0.59 J	NL	NL	9.5
1,3,5-Trimethylbenzene	1.3	<0.74	3.5	<0.74	2.7	<0.74	2.7	<0.74	2.5	<0.74	NL	NL	3.7
4-ethyltoluene	0.98	<0.74	2.4	<0.74	2.1	<0.74	1.9	<0.74	1.9	<0.74	NL	NL	3.6
Acetone	110	7.0	250	19	68	14	1300	17	380	18	NL	NL	98.9
Benzene	3.5	0.35 J	11	0.35 J	5.7	0.45 J	23	0.48	11	0.38 J	NL	NL	9.4
Carbon Disulfide	3.4	<0.47	16	<0.47	2.7	<0.47	26	<0.47	3.5	<0.47	NL	NL	4.2
Carbon Tetrachloride	0.82 J	0.63	1.0	0.50	0.88 J	0.69	<0.94	0.63	0.69 J	0.69	6 **	0.2**	<1.3
Chloroform	1.5	<0.73	7.0	<0.73	0.93	<0.73	1.1	<0.73	10	<0.73	NL	NL	1.1
Chloromethane	1.1	1.4	4.5	0.93	1.8	1.2	1.5	1.2	<0.31	1.2	NL	NL	3.7
cis-1,2-Dichloroethene	<0.59	<0.59 (3)	0.71	<0.59 (3)	<0.59	<0.59 (3)	<0.59	<0.59 (3)	50	<0.59 (3)	6**	0.2**	NL
Cyclohexane	16	<0.52	35	<0.52	10	<0.52	42	<0.52	20	<0.52	NL	NL	NL
Ethyl acetate	<0.54	<0.54	<0.54	0.50 J	<0.54	0.61	<0.54	0.50 J	<0.54	0.47 J	NL	NL	5.4
Ethylbenzene	0.82	<0.65	1.5	<0.65	1.1	<0.65	1.3	<0.65	2.0	<0.65	NL	NL	5.7
Freon 11	6.1	1.6	4.6	3.0	3.3	2.2	12	2.1	2.5	1.5	NL	NL	18.1
Freon 113	2.3	<1.1	2.3	<1.1	1.9	<1.1	1.5	<1.1	1.1 J	<1.1	NL	NL	<5.0
Freon 12	1.8	2.7	2.9	2.9	3.6	3.0	2.9	2.9	3.1	2.8	NL	NL	16.5
Heptane	50	<0.61	96	<0.61	20	<0.61	89	0.45 J	43	0.45 J	NL	NL	NL
Hexane	49	<0.53	79	0.56	16	0.49 J	79	0.53	44	0.67	NL	NL	10.2
Isopropyl alcohol	48	2.1	53	3.0	29	1.7	47	2.5	41	1.8	NL	NL	NL
m&p-xylene	2.1	<1.3	3.9	0.48 J	3.0	0.56 J	3.0	0.52 J	4.6	0.78 J	NL	NL	22.2
Methyl Ethyl Ketone	6.0	0.47 J	5.6 J	0.91	6.0	1.3	26	0.71 J	9.4	0.59 J	NL	NL	NL
Methyl Isobutyl Ketone	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	5.7	NL	NL	NL
Methylene chloride	6.9	1.5	15	1.6	14	1.4	19	2.6	11	0.97	100***	3***/60*	NL
o-xylene	0.82	<0.65	1.6	<0.65	1.2	<0.65	1.4	<0.65	1.6	<0.65	NL	NL	7.9
Styrene	0.60 J	<0.64	0.98	<0.64	0.89	<0.64	0.94	<0.64	0.89	<0.64	NL	NL	1.9
Tetrachloroethylene	0.95 J	<1.0	2.2	<1.0	1.1	<1.0	9.9	<1.0	2.6	<1.0	100***	3***/30*	NL
Tetrahydrofuran	<0.44	<0.44	<0.44	<0.44	1.3	<0.44	<0.44	<0.44	2.1	<0.44	NL	NL	3.3
Toluene	29	0.90	26	1.6	16	1.6	27	1.1	22	1.9	NL	NL	43
trans-1,2-Dichloroethene	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	0.87	<0.59	NL	NL	NL
Trichloroethene	180	<0.21	190	1.6	11	0.75	74	0.75	310	6.1	6 **	0.2** / 2*	4.2
Vinyl chloride	0.41	<0.10	0.56	<0.10	0.97	<0.10	2.3	<0.10	1.2	<0.10	6****	0.2****	< 1.9

Notes:

Concentrations in micrograms per cubic meter (ug/m^3)

Samples analyzed by USEPA Method TO-15

< indicates the concentration was not detected above the reporting limit

(1) *New York State Department of Health (NYSDOH), Guidance for Evaluating Soil Vapor Intrusion in the State of New York* , October 2006 and subsequent updates. [Note: This Guidance uses a combination of indoor air and sub-slab soil vapor when comparing to the matrices. In addition, for compounds not listed in the matrices an overall site approach is employed which utilizes the USEPA BASE Database (see 2. below) as typical background for commercial buildings and also uses the outdoor air sample, refer to Guidance document for details.]

(2) USEPA Building Assessment and Survey Evaluation (BASE) Database (90th Percentile). As recommended in Section 3.2.4 of the NYSDOH Guidance (Refer to Footnote "1") this database is referenced for the indoor air sampling results. This database is also referenced to provide initial benchmarks for comparison to the air sampling data and does not represent regulatory standards or compliance values.

(3) The reporting limit of 0.59 ug/m3 is above the minimum action level in the decision matrix of 0.2 ug/m3, therefore although the compound was not detected it is possible for the compound to be present above 0.2 ug/m^3

***** = Air Guideline Values obtained from Table 3.1, NYSDOH, Guidance for Evaluating Soil Vapor Intrusion in the State of New York and updates in September 2013 for PCE and August 2015 for TCE.

****** = Guideline Value obtained from Soil Vapor/Indoor Air Matrix A (minimum action level), NYSDOH, Guidance for Evaluating Soil Vapor Intrusion in the State of New York May 2017.

******* = Guidance Value obtained from Soil Vapor/Indoor Air Matrix B (minimum action level), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York May 2017.

******** = Guidance Value obtained from Soil Vapor/Indoor Air Matrix C (minimum action level), NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York May 2017.

Red values are above Air Guideline Derived by NYSDOH in Table 3.1 of NYSDOH Guidance titled "Evaluating Soil Vapor Intrusion in the State of New York", October 2006 (and subsequent updates).

J indicates an estimated value

***NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York* , May 2017 Decision Matrices Notes:**

NO FURTHER ACTION:

Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub -slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

IDENTIFY SOURCE(S) AND RESAMPLE OR MITIGATE:

The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor int rusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:

Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concen trations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pre ssure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:

Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor in trusion until contaminated environmental media are remediated.

APPENDIX A

HEALTH AND SAFETY PLAN
for
SITE INVESTIGATIONS AND REMEDIAL OVERSIGHT

HAWKEYE TRADE CENTER & RESIDENCES
PARCEL 1B
1405 ST. PAUL STREET
ROCHESTER, NEW YORK 14650
NYSDEC SITE # C828203

Prepared for:

WBS Capital, Inc.
136-20 38th Avenue Suite 9J
Flushing, New York 11354

Prepared by:

BE3 CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

1270 Niagara Street
Buffalo, New York 14213

May 2019

Table of Contents

ATTACHMENTS

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 Hawkeye Parcel 1A 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
Engineer and Project Manager - Jason Brydges, P.E.

Geologist – John Boyd, PG
Technicians – Cory Lauber
QA/QC – John Berry, P.E.

Responsibilities of some of the key personnel are as follows:

Project Manager

- Assuring that 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 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 had multiple uses associated with transportation including the New York State Railway machine and repair shop in 1911 and Rochester Transit Corporation rail car maintenance in the late 1930's. A former gasoline filling station was also located at the Site in the early to mid-1900s. Eastman Kodak Company purchased the Site in 1942 when they began manufacturing optical lenses and equipment using thoriated glass. Building 5 was used for office space, equipment assembly, non-hazardous and hazardous waste storage laboratory, and cafeteria. A building labeled "kerosene" was utilized in the northwest corner of the Site since at least the 1950s. Potential sources of contamination include a former drywell of unknown use, solvents below Building 5, past releases from kerosene, and petroleum migration from on and off-Site sources.

The site is currently vacant and is zoned for M-1 industrial use within the City of Rochester but north of downtown approximately half of a mile south of State Route 104. The Site is located at the intersection of St. Paul Street and Avenue E within the Group 14261 Neighborhood Revitalization Plan BOA. The Site is also in an En-Zone. A large manufacturing/office building comprises most of the parcel aside from a driveway located north of St. Paul Street that wraps around the building. The Site is surrounded by other former Kodak buildings (i.e., Parcels 1A and 1B) along its west and north borders.

2.2 Hazard Evaluation

Specific health and safety concerns to the project tasks include working around low levels of 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 sieve 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 investigation	Potential exposure to low levels of petroleum products	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	1. Daily inspection of equipment 2. Continuous safety oversight	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. 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 mg/m^3 total dust
- 5 mg/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:
  - o Provide his or her partner with assistance.
  - o 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 zones 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, PM 716-830-8636
- Danielle Miles, NYSDEC PM 585-226-5349
- Harolyn Hood, NYSDOH 518-402-7860
- Rochester General Hospital 585-922-4000 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. A NYSDOH generic CAMP obtained from NYSDEC DER-10 is presented in **Attachment 5** that will be followed and adhered to for work activities that could generate dust 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 5**. The fugitive dust suppression and particulate monitoring program will be employed at the site during building demolition, IRM site 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.

APPENDIX B

QUALITY ASSURANCE/QUALITY CONTROL PLAN

HAWKEYE TRADE CENTER & RESIDENCES
PARCEL 1B
1447 ST. PAUL STREET
ROCHESTER, NEW YORK 14650
NYSDEC SITE # C828203

Prepared for:

WBS Capital, Inc.
136-20 38th Avenue Suite 9J
Flushing, New York 11354

Prepared by:

BE3 CORP
PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

1270 Niagara Street
Buffalo, New York 14213

May 2019

Table of Contents

1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

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.

ANALYTICAL SUMMARY TABLE

PARAMETER	ANALYTICAL METHOD	QUANTITY(GW)[A]	Soil[B]	Air[C]
Part 375 VOCs	8260	9	34	NA
Part 375 SVOCs	8270	9	34	NA
Part 375 Metals	6010/7470/7471	9	34	NA
Part 375 PCBs	8082	9	34	NA
Part 375 Pesticides	8081	9	34	NA
Air	TO-15	NA	NA	NA
Emerging Contaminants	537/8270	9	34	NA

Holding Times: 8260-14 days and 8270, 8081, and 8082-7 days
A = 1 MS, 1 MSD and 1 duplicate,
B = 2 MS, 2 MSD and 2 duplicates,

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.

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, as applicable
- To maintain the highest possible scientific/professional standards for each procedure
- To develop enough data to assess whether the levels of contaminates 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 enough 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, semi volatiles, PCB), and is calculated as follows:

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

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

Data validation 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.

New York State Department of Environmental Conservation (NYSDEC) 2005. *Analytical Services Protocol*, (ASP) 7/2005 Edition. Albany: NYSDEC.

NYSDEC "DER-10 Technical Guidance for Site Investigation and Remediation (DER-10)," dated May 3, 2010, Appendix 2

APPENDIX C

FIELD SAMPLING PLAN

HAWKEYE TRADE CENTER & RESIDENCES
PARCEL 1B
1447 ST. PAUL STREET
ROCHESTER, NEW YORK 14650
NYSDEC SITE # C828203

Prepared for:

WBS Capital, Inc.
136-20 38th Avenue Suite 9J
Flushing, New York 11354

Prepared by:

BE3 CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

1270 Niagara Street
Buffalo, New York 14213

May 2019

Table of Contents

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.

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. When using dedicated sampling equipment, decontamination can be minimized.
6. Label each sample container with the appropriate sample identification and place 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 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 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 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. Backfill borings with indigenous soil in the order in which the material was removed with the topsoil/sand/cover soil placed last to cover the hole.

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

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 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 well screen. If more than one section of 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 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 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 can't 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 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 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 is a ziplok 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 2-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.

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 2 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 8-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 8 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 Log Book - 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.

ATTACHMENT A

Groundwater Sampling for Emerging Contaminants

July 2018

Issue: NYSDEC has committed to analyzing representative groundwater samples at remediation sites for emerging contaminants (1,4-dioxane and PFAS) as described in the below guidance.

Implementation

NYSDEC project managers will be contacting site owners to schedule sampling for these chemicals. Only groundwater sampling is required. The number of samples required will be similar to the number of samples where "full TAL/TCL sampling" would typically be required in a remedial investigation. If sampling is not feasible (e.g., the site no longer has any monitoring wells in place), sampling may be waived on a site-specific basis after first considering potential sources of these chemicals and whether there are water supplies nearby.

Upon a new site being brought into any program (i.e., SSF, BCP), PFAS and 1,4-dioxane will be incorporated into the investigation of groundwater as part of the standard "full TAL/TCL" sampling. Until an SCO is established for PFAS, soil samples do not need to be analyzed for PFAS unless groundwater contamination is detected. Separate guidance will be developed to address sites where emerging contaminants are found in the groundwater. The analysis currently performed for SVOCs in soil is adequate for evaluation of 1,4-dioxane, which already has an established SCO.

Analysis and Reporting

Labs should provide a full category B deliverable, and a DUSR should be prepared by an independent 3rd party data validator. QA/QC samples should be collected as required in DER-10, Section 2.3(c). The electronic data submission should meet the requirements provided at: https://www.dec.ny.gov/chemical/62440.html ,

The work plan should explicitly describe analysis and reporting requirements.

PFAS sample analysis: Currently, ELAP does not offer certification for PFAS compounds in matrices other than finished drinking water. However, laboratories analyzing environmental samples (ex. soil, sediments, and groundwater) are required, by DER, to hold ELAP certification for PFOA and PFOS in drinking water by EPA Method 537 or ISO 25101.

Modified EPA Method 537 is the preferred method to use for groundwater samples due to the ability to achieve 2 ng/L (ppt) reporting limits. If contract labs or work plans submitted by responsible parties indicate that they are not able to achieve similar reporting limits, the project manager should discuss this with a DER chemist. Note: Reporting limits for PFOA and PFOS should not exceed 2 ng/L.

PFAS sample reporting: DER has developed a PFAS target analyte list (below) with the intent of achieving reporting consistency between labs for commonly reportable analytes. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. This list may be updated in the future as new information is learned and as labs develop new capabilities. If lab and/or matrix specific issues are encountered for any particular compounds, the NYSDEC project manager will make case-by-case decisions as to whether particular analytes may be temporarily or permanently discontinued from analysis for each site. Any technical lab issues should be brought to the attention of a NYSDEC chemist.

Some sampling using this full PFAS target analyte list is needed to understand the nature of contamination. It may also be critical to differentiate PFAS compounds associated with a site from other sources of these chemicals. Like routine refinements to parameter lists based on investigative findings, the full PFAS target analyte list may not be needed for all sampling intended to define the extent of contamination. Project managers may approve a shorter analyte list (e.g., just the UCMR3 list) for some reporting on a case by case basis.

1,4-Dioxane Analysis and Reporting: The method detection limit (MDL) for 1,4-dioxane should be no higher than 0.35 µg/l (ppb).   Although ELAP offers certification for both EPA Method 8260 SIM and EPA Method 8270 SIM, DER is advising the use of method 8270 SIM. EPA Method 8270 SIM provides a more robust extraction procedure, uses a larger sample volume, and is less vulnerable to interference from chlorinated solvents.

Full PFAS Target 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
	Perfluorooctanessulfonic 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	Perfluroroctanesulfonamide	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

Bold entries depict the 6 original UCMR3 chemicals

APPENDIX D

FIELD LOGS & FORMS

FIELD REPORT

PROJECT:

DATE:

CLIENT:

DAY:

LOCATION:

PROJECT NUMBER:

COMPILED BY:

WEATHER

Morning	Temperature: Conditions: Wind: Humidity:
Afternoon	Temperature: Conditions: Wind: Humidity:

PERSONNEL

Name	Company	Position	Field Hours		
			From	To	Total
				Total Field Hours	

MATERIALS/EQUIPMENT USED ON-SITE:

-
-
-
-

BE3 CORP
PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

WORK LOG/MINUTES:

7:00 am:

8:00 am:

9:00 am:

10:00 am:

11:00 am:

12:00 pm:

1:00 pm:

2:00 pm:

3:00 pm:

4:00 pm:

5:00 pm:

GENERAL NOTES:

-
-
-
-
-

ISSUES/OBSERVATIONS/CONFLICTS:

CORRECTIVE ACTIONS:

TABLE 6 - RI LOCATION COORDINATES		
Sample Identification	Coordinates-North American Datum 1983	
	Latitude	Longitude
Boreholes		
RI-01	42.94581299	-78.83109916
RI-02	42.94557094	-78.83132759
RI-03	42.94522445	-78.83173512
RI-04	42.94498956	-78.83157115
RI-05	42.94476895	-78.8312339
RI-06	42.94494019	-78.8312264
RI-07	42.94502744	-78.83104505
RI-08	42.94515401	-78.83084264
RI-09	42.94507127	-78.83113081
Test Pits		
TP- 1	42.94413062	-78.82989107
TP- 2	42.94433419	-78.82994854
TP- 3	42.94434849	-78.83011513
TP- 4	42.94422419	-78.83022626
TP- 5	42.94426382	-78.82962807
TP- 6	42.94432126	-78.82986831
TP- 7	42.94451227	-78.82980189
TP- 8	42.94485758	-78.83014617
TP- 9	42.94503356	-78.83034457
TP- 10	42.94504888	-78.83008949
TP- 11	42.94456481	-78.83078284
TP- 12	42.94475828	-78.83042199
TP- 13	42.94487106	-78.83042832
TP- 14	42.94459834	-78.83020924
Monitoring Wells		
MW- 1	42.94527897	-78.83206184
MW- 2	42.94581151	-78.83154516
MW- 3	42.94507659	-78.83109739
MW- 4	42.94424236	-78.82960957
MW- 5	42.94412154	-78.82993412
MW- 6	42.94466699	-78.83018561

TEST PIT LOG

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY
1270 Niagara Street
Buffalo, NY 14213
716.249.6880 be3corp.com

Project:		Sheet: of
Client:	Job Number:	
Contractor:	Location:	
Date Started:	Ground Elevation:	
Date Completed:	Operator:	
Pit Number:	Geologist/Technician	
	Ground Water:	

Depth (ft)	Sample		Description
	#	Type	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

Comments:

DRILLING SUMMARY

Geologist:

Contractor:

Operator:

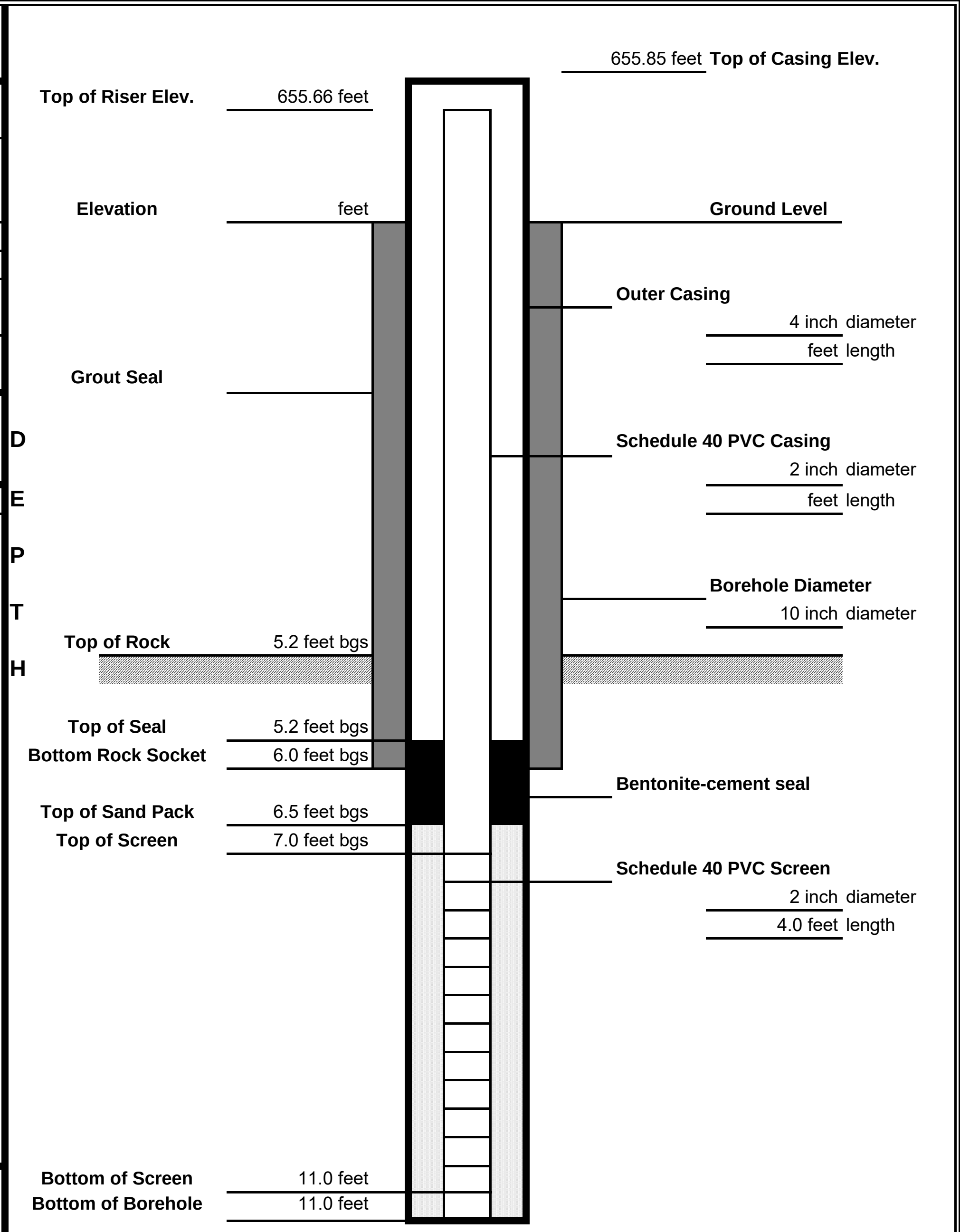
Model:

Date: 1/12/2018

GEOLOGIC LOG

Depth(ft.)	Description
	See boring log.

WELL DESIGN



CASING MATERIAL

Surface: 4" Steel protective cover

Monitor: 2" Schedule 40 PVC placed inside a 4-inch diameter cored bedrock borehole.

SCREEN MATERIAL

Type: 2" Schedule 40 PVC

Slot Size: 0.010"

Setting: 7.0 feet to 11.0 feet bgs

FILTER MATERIAL

Type: #0 sand
Setting: 6.5 feet to 11.0 feet bgs.

SEAL MATERIAL

Type 1: Bentonite chips
Setting: 5.2 feet to 6.5 feet bgs.
Type 2: Bentonite-cement grout
Setting: Ground level to 6.0 feet bgs

COMMENTS:
Ground elevation at well not measured.

LEGEND

Bentonite-Cement Grout
Bentonite-Cement Seal
Sand Pack

Client:

Location:

Project No.:

BE3CORP PANAMERICAN

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-5

DRILLING SUMMARY

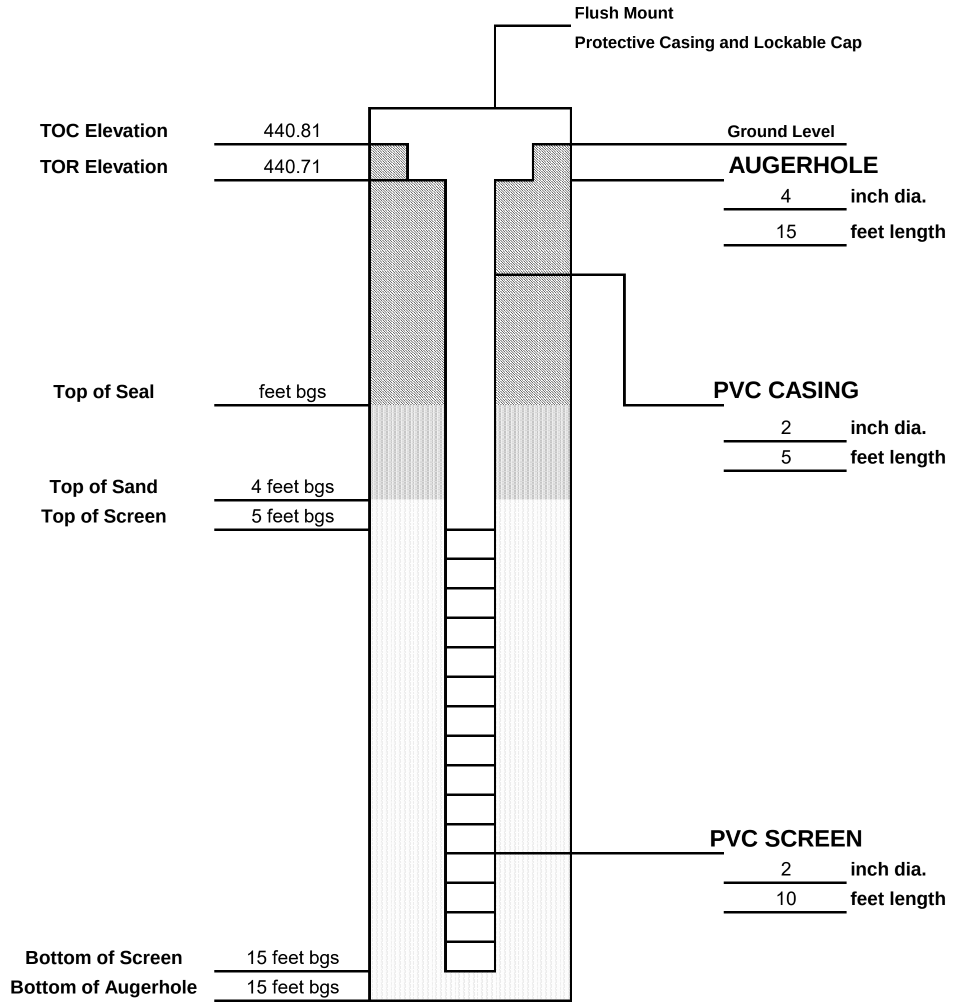
Geologist/Technician:

Drilling Company:

Driller:

Rig Make/Model:

Date:



GEOLOGIC LOG

Depth(ft.)	Description

WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #0 Sand
Monitor: N/A	**Slot Size:** .010"	**Setting:** 4 to 15 feet bgs
	Setting: 5 to 15 feet bgs	***SEAL MATERIAL***
		Type: Bentonite Chips
		Setting: 1 to 4 feet bgs

COMMENTS:

LEGEND

- Cement Grout
- Bentonite Seal
- Silica Sandpack

Client:	**Location:**	**Project No.:**
BE3 CORP PANAMERICAN — ENVIRONMENT • ENGINEERING • ENERGY	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:** **MW-5**

DRILLING SUMMARY

Geologist:

Contractor:

Operator:

Model:

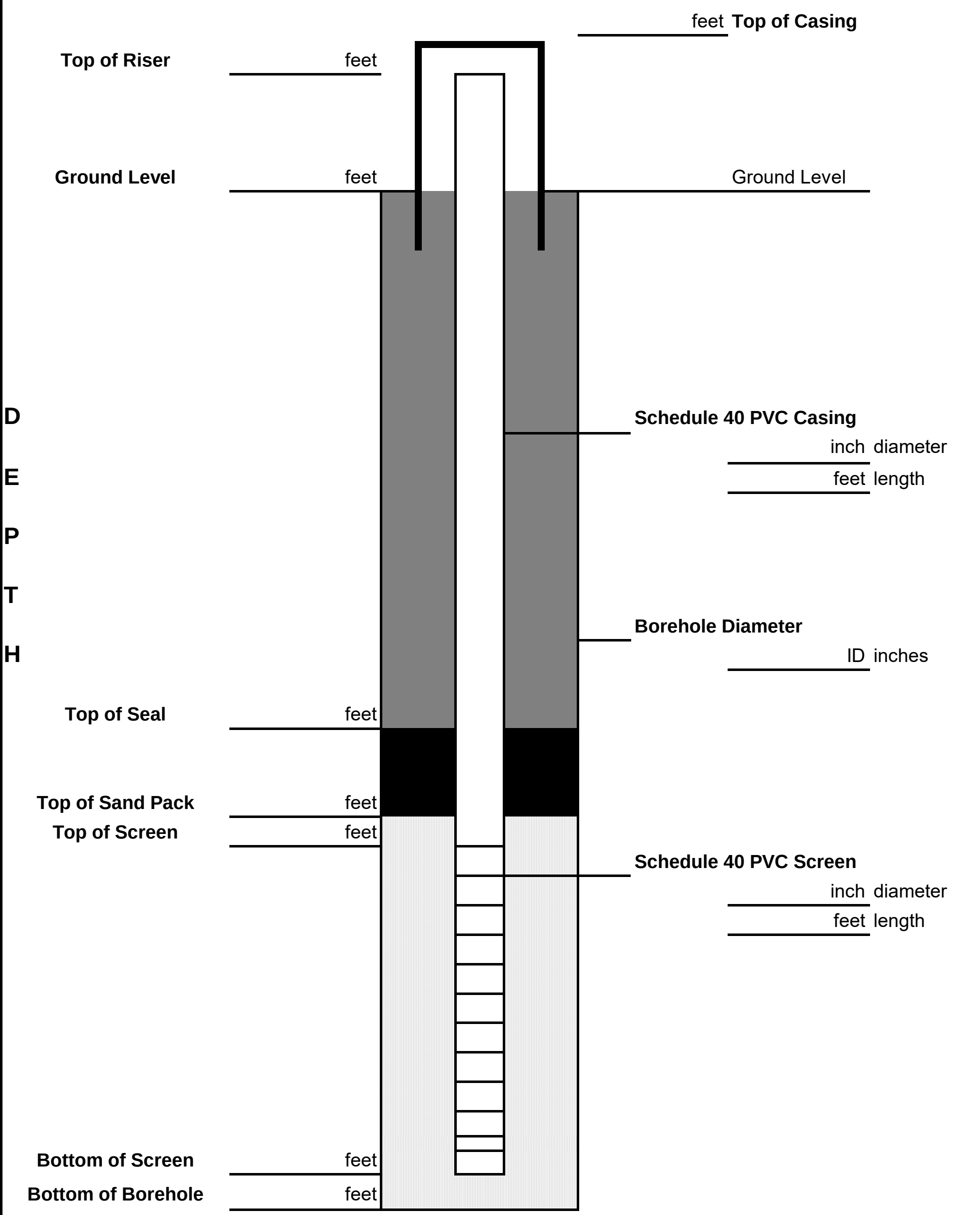
Date: 1/12/2018

GEOLOGIC LOG

Depth(ft.)	Description

WELL DESIGN

DEPTH



CASING MATERIAL	SCREEN MATERIAL	FILTER MATERIAL
Surface: 4" Steel protective cover (Stick Up)	**Type:** 2" Schedule 40 PVC	**Type:** #0 well sand **Setting:**
Monitor: 2" Schedule 40 PVC	**Slot Size:** 0.010"	**SEAL MATERIAL** **Type 1:** Bentonite chips
	Setting:	**Setting:** **Type 1:** **Setting:**

COMMENTS:

LEGEND

- Cement Grout
- Bentonite Seal
- Sand Pack

Client:	**Location:**	**Project No.:**
BE3CORP PANAMERICAN ENVIRONMENT · ENGINEERING · ENERGY	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:**

DRILLING SUMMARY

Geologist:

Contractor: Nature's Way

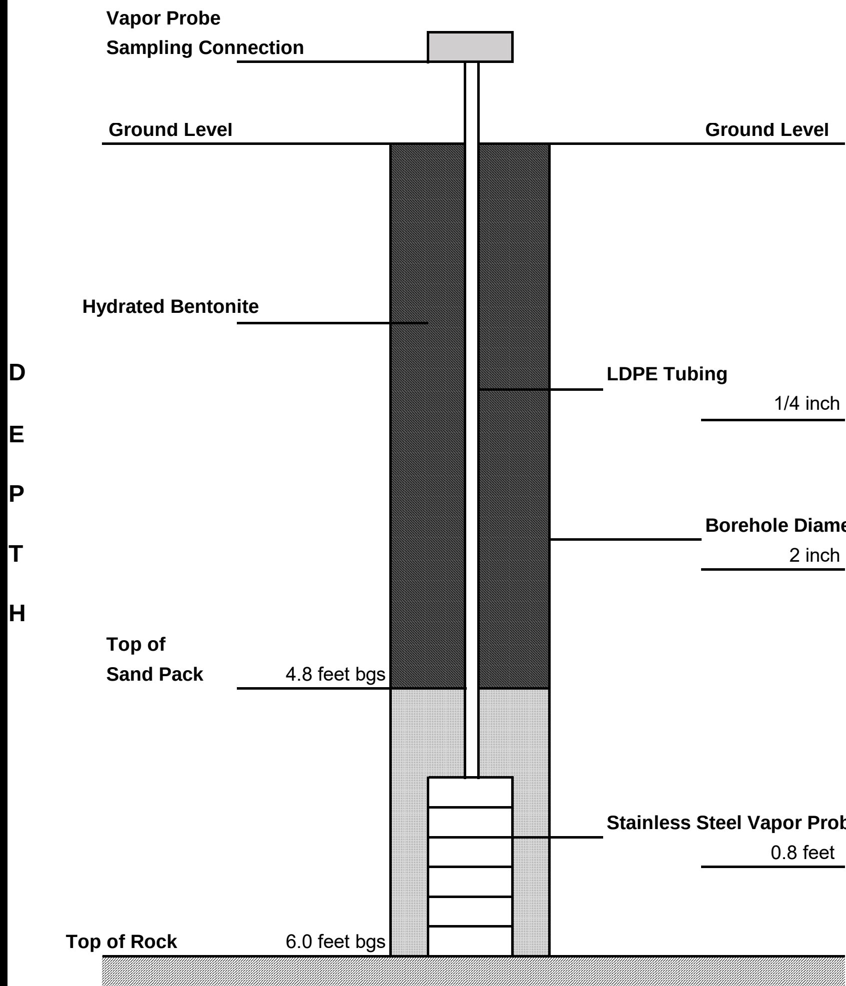
Operator:

Model:

Date:

GEOLOGIC LOG

Depth(ft.)	Description
	N/A



PROBE DESIGN

CASING MATERIAL	SEAL MATERIAL	FILTER MATERIAL
Surface: N/A	**Type:** Bentonite Chips	**Type:** No. 0 Sand
	Setting: 0.0 feet to 4.8 feet bgs	**Setting:** 4.8 feet to 6.0 feet bgs

COMMENTS:

Ground elevation not measured.
Refusal at 6.0 feet bgs.

LEGEND

Bentonite Chip Seal

Sand Pack

Client:	**Location:**	**Project No.**
BE3CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY	**SOIL VAPOR PROBE CONSTRUCTION DETAILS**	**Probe Number: VP-4**

WELL DEVELOPMENT LOG

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

PROJECT TITLE: ______________________ WELL NO.: ______________

PROJECT NO.: ______________________

STAFF: ______________________

DATE(S): ______________________

DEVELOPMENT METHOD: ______________________

____

			WELL ID.	VOL. (GAL/FT)
1. DEPTH TO WELL BOTTOM (FT. BTOR)	=	________	1"	0.04
2. WATER LEVEL BELOW TOP OF RISER (FT. BTOR)	=	________	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	________	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GALLONS)	=	________	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	________	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x_____)	=	________	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	________	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
pH											
TEMPERATURE (°C)											
SPEC. COND. ( )											
ORP (mV)											
DISSOLVED OXYGEN (mg/l)											
TURBIDITY (NTU)											
DEPTH TO WATER (btor)											
TIME											

COMMENTS:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: ______________________ Site: ______________ Well I.D.: ____________

Date: ________ Sampling Personnel: ____________________ Company: ____________

Purging/ Sampling Device: ______________________ Tubing Type: ______________ Pump/Tubing Inlet Location: ____________

Measuring Point: ________ Initial Depth to Water: ________ Depth to Well Bottom: ________ Well Diameter: ________ Screen Length: ________

Casing Type: ______________ Volume in 1 Well Casing (liters): ________ Purge Volume (liters): ________

Sample ID: ______________________ Sample ______________ QA/QC: ____________

Sample Parameters: ____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

BE3CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY

BE3 CORP
PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

Geoprobe
Bore Hole Log

Project:	Sheet: of
Client:	Location:
Contractor:	Ground Elevation:
Date Started:	Operator:
Date Completed:	Geologist/Technician:
Bore Hole Number:	Ground Water:

Depth (FT)	Sample		Description
	NO	TYPE	
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Comments:

BE3 CORP
PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

Summa Canister Data Sheet

Site: Hillcrest
Samplers:
Date:

Sample #					
Location					
Summa Canister ID					
Flow Controller ID					
Additional Tubing Added	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much
Purge Time (Start)					
Purge Time (Stop)					
Total Purge Time (min)					
Purge Volume					
Initial Tracer Gas Results					
CH4 (ppm)					
O2 (%)					
H2S (ppm)					
CO2 (ppm)					
Pressure Gauge - before sampling					
Sample Time (Start)					
Sample Time (Stop)					
Total Sample Time (min)					
Pressure Gauge - after sampling					
Sample Volume					
Canister Pressure Went To Ambient Pressure?	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO
Final Tracer Gas Results					
Weather 24 hours before and during sampling					

General Comments:

BE3 CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

Structure Sampling - Product Inventory

Homeowner Name & Address: ______________________ Date: ________

Samplers & Company: ______________________ Structure ID: ________

Site Number & Name: ______________________ Phone Number: ________

Make & Model of PID: ______________________ Date of PID Calibration: ________

Identify any Changes from Original Building Questionnaire : ______________________

Product Name/Description	Quantity	Chemical Ingredients	PID Reading	Location

13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: ______________________________

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N

* Describe the condition of the product containers as **Unopened (UO), Used (U), or Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

BE3CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

Soil Vapor Intrusion - Structure Sampling Building Questionnaire **Structure ID :** ______________

Site No. : ____________________ **Site Name :** ______________________________

Date: ____________________ **Time:** ______________________________

Structure Address : ____

Preparer's Name & Affiliation : ____

Residential ? ☐ **Yes** ☐ **No** **Owner Occupied ?** ☐ **Yes** ☐ **No** **Owner Interviewed ?** ☐ **Yes** ☐ **No**

Commercial ? ☐ **Yes** ☐ **No** **Industrial ?** ☐ **Yes** ☐ **No** **Mixed Uses ?** ☐ **Yes** ☐ **No**

Identify all non-residential use(s) : ____

Owner Name : ______________________________ **Owner Phone :** ( ) ________ - ________

Secondary Owner Phone : ( ) ________ - ________

Owner Address (if different) : ____

Occupant Name : ______________________________ **Occupant Phone :** ( ) ________ - ________

Secondary Occupant Phone : ( ) ________ - ________

Number & Age of All Persons Residing at this Location : ______________________________

Additional Owner/Occupant Information : ______________________________

Describe Structure (style, number floors, size) : ______________________________

____

Approximate **Year Built :** ____________________ Is the building **Insulated?** ☐ Yes ☐ No

Lowest level : ☐ Slab-on-grade ☐ Basement ☐ Crawlspace

Describe Lowest Level (finishing, use, time spent in space) : ______________________________

____

Floor Type: ☐ Concrete Slab ☐ Dirt ☐ Mixed : ______________________________

Floor Condition : ☐ Good (few or no cracks) ☐ Average (some cracks) ☐ Poor (broken concrete or dirt)

Sumps/Drains? ☐ Yes ☐ No Describe : ______________________________

Identify other floor penetrations & details : ______________________________

____

Wall Construction : ☐ Concrete Block ☐ Poured Concrete ☐ Laid-Up Stone

Identify any wall penetrations : ______________________________

____

Identify water, moisture, or seepage: location & severity (sump, cracks, stains, etc) : ______________

____

Heating Fuel : ☐ Oil ☐ Gas ☐ Wood ☐ Electric ☐ Other : ______________

Heating System : ☐ Forced Air ☐ Hot Water ☐ Other : ______________

Hot Water System : ☐ Combustion ☐ Electric ☐ Boilermate ☐ Other: ______________

Clothes Dryer : ☐ Electric ☐ Gas Where is dryer vented to? ______________

If combustion occurs, describe where air is drawn from (cold air return, basement, external air, etc.) : ______________

____

Fans & Vents (identify where fans/vents pull air from and where they vent/exhaust to) : ______________

____

Describe factors that may affect indoor air quality (chemical use/storage, unvented heaters, smoking, workshop):

____

Attached garage ? ☐ Yes ☐ No Air fresheners ? ☐ Yes ☐ No

New carpet or furniture ? ☐ Yes ☐ No What/Where ? ______________

Recent **painting or staining** ? ☐ Yes ☐ No Where ? : ______________

Any **solvent or chemical-like odors** ? ☐ Yes ☐ No Describe : ______________

____

Last time **Dry Cleaned** fabrics brought in ? ______________ What / Where ? ______________

Do any building occupants use solvents at work ? ☐ Yes ☐ No Describe : ______________

Any testing for Radon ? ☐ Yes ☐ No Results : ______________

Radon System/Soil Vapor Intrusion Mitigation System present ? ☐ Yes ☐ No If yes, describe below

____

Lowest Building Level Layout Sketch

- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketch.
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or F	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	xxxxxxx	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	######	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab vapor samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

BE3CORP
PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

APPENDIX E

BROWNFIELD CLEANUP PROGRAM
CITIZEN PARTICIPATION PLAN

HAWKEYE TRADE CENTER & RESIDENCES PARCEL 1B
1447 ST. PAUL STREET
ROCHESTER, NEW YORK 14650
NYSDEC SITE # C828203

Prepared by:

BE3 CORP PANAMERICAN
ENVIRONMENT • ENGINEERING • ENERGY

1270 Niagara Street
Buffalo, New York 14213

May 2019

Table of Contents

APPENDICES

* * * * *

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: **WBS Capital, Inc.**
Site Name: **Hawkeye Trade Center and Residences**
Site Address: **1405 Saint Paul Street**
Site County: **Monroe**
Site Number: **C828203**

1.0 What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants that conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at: http://www.dec.ny.gov/chemical/8450.html.

2.0 Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social wellbeing. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision makers form or adopt final positions.

Involving citizens affected and interest in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment
- Improving public access to, and understanding of, issues and information related to a site and that site's investigation and cleanup process
- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process
- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community
- Encouraging dialogue to promote the exchange of information among the affected/interested

public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to which the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in **Appendix A**. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods. The site contact list includes, at a minimum:

- chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- residents, owners, and occupants of the site and properties adjacent to the site;
- the public water supplier which services the area in which the site is located;
- any person who has requested to be placed on the site contact list;
- the administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- Location (s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in **Appendix A**. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in **Appendix D** shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.
- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information. This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site. For more information about TAGs, go online at http://www.dec.ny.gov/regulations/2590.html

As of the date of this CP Plan, the significant threat determination for the site had not yet been made. To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in **Appendix A**.

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

CITIZEN PARTICIPATION ACTIVITIES	TIMING OF CP ACTIVITIES
Application Process	
• Prepare site contact list • Establish document repositories • Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30- day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	At time of preparation of application to participate in the BCP. When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement (BCA)	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation
Before NYSDEC Approves Remedial Investigation (RI) Work Plan	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined, and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes RI	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP)	
• Distribute fact sheet to site contact list about proposed RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five-day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that summarizes the Final Engineering Report • Distribute fact sheet to site contact list announcing issuance of Certificate of Completion (COC)	At the time NYSDEC approves Final Engineering Report. These two fact sheets are combined if possible if there is not a delay in issuing the COC.

3.0 Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern as they relate to the site Additional major issues of public concern may be identified during the site's remedial process.

At this juncture the public has not identified major concerns with the project. In the event major concerns are expressed, future communication addressing those concerns will be issued to stakeholders.

Issues of community concern in the future may include noise, odor, dust and/or truck traffic associated with removal of contaminated soil (if subsurface remediation is required.) However, impacts will be mitigated through the implementation of a health and safety plan approved by the Department which will be designed to minimize these impacts. A Community Air Monitoring Plan (CAMP) will also be implemented to monitor dust and vapors to ensure the community is not impacted.

4.0 Site Information

Note: please refer to the BCP Application and RI Work Plan (and corresponding appendices) for more detailed information on the Site. Below is a summary of Site description, future use of Site, historical use of Site, and Site environmental history. **Appendix C** contains a map identifying the location of the site.

Site Description

The property is in a suburban area roughly in the center of the City of Rochester municipality, north of downtown area; approximately a half a mile south of State Route 104; along the Genesee River. The property sits at the northeast corner of the intersection of St. Paul Street and Avenue E. The main site features include a large manufacturing/office building which comprises most of the parcel. A small driveway is located to the north off St. Paul Street and wraps around the northwest corner of the building. The property is surrounded by another former Kodak Company building associated with manufacturing uses (1447 St. Paul Street) along its west and north borders. A parking lot is located adjacent south and R.C. Shaheen Paint is located adjacent east of the site. Seneca Park and the Genesee River gorge sit to the west. Currently the property is vacant and is zoned for M-1; industrial use. The property is surrounded by additional industrial uses. Residential zones begin a few blocks to the south, east and northeast of the property.

Future Use of the Site

The proposed Hawkeye Trade Center and Residences project plans to use the property for a mixture of commercial/office space, flex space, and manufacturing. The site will be used to promote economic growth in the area by drawing in a variety of businesses. The site is phase 1 of 3 phases for redevelopment and the primary use of the building will be associated with the Foreign Trade Zone, warehouse storage/distribution, and wholesale display.

History of Site Use

The property has been associated with industrial/manufacturing since the early 1900's. The property had multiple uses associated with transportation. The New York State Railway machine and repair shop was located on the property in 1911, Rochester Transit Corporation rail car maintenance was previously located at the facility in the late 1930's until Kodak purchased the property in 1942, as well as a former gasoline filling station in the early to mid-1900's. The Kodak Hawkeye Facility manufactured optical lenses and equipment using thorium glass. The current building was erected and was used for office space, equipment assembly, non-hazardous and hazardous waste storage laboratory, and cafeteria. A building labeled "kerosene" was discovered on the property in the northwest corner from the 1950 Sanborn map. Potential sources of contamination include a former drywell of unknown material located southwest of the property, previous contamination of solvents below the building from past site use, past releases from the small kerosene labeled building, and petroleum migration from the former gas station located adjacent east of the site.

A Phase I and Phase II Environmental Assessment have been completed at the site. The Phase II identified chlorinated solvents in a groundwater monitoring well above NYSDEC standards. The source of impacts is currently unknown.

5.0 Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant is not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a qualitative exposure assessment, a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for restricted purposes. To achieve this goal, the Applicant will conduct investigation and/or cleanup activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement to be executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

Investigation

The Applicant will complete a RI as part of the BCP with NYSDEC oversight. When the investigation is complete, the Applicant will prepare and submit a report that summarizes the results. NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a significant threat, it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed.

Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1. The Applicant may recommend in its investigation report that no action is necessary at the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a “Certificate of Completion” (described below) to the Applicant

Or

2. The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. Pending approval of the investigation report by the NYSDEC, the Applicant may then develop a cleanup plan, officially called a “Remedial Work Plan”. The Remedial Work Plan describes the Applicant’s proposed remedy for addressing contamination related to the site. When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH will oversee the activities. When the Applicant completes cleanup activities, it will prepare a final engineering report that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the final engineering report. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management may be conducted by the Applicant under NYSDEC oversight, if contamination will remain in place. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An institutional control is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An engineering control is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that is pumping and treating groundwater. Site management continues until NYSDEC determines that it is no longer needed.

Appendix A

Project Contacts and Locations of Reports and Information

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Danielle Miles
Project Manager, Division of Environmental Remediation
6274 East Avon-Lima Rd, Avon, NY 14414
P: (585) 226-5349
danielle.miles@dec.ny.gov

Regina Willis
Regional Public Participation Specialist
6274 E Avon-Lima Rd, Avon, NY 14414
P: (585) 226-5324
regina.willis@dec.ny.gov

New York State Department of Health (NYSDOH):

Harolyn Hood
Project Manager
Corning Tower, Empire State Plaza Albany, NY 12237
P: (518) 402-7860
beei@health.ny.gov

Public Repository for Reports and Information:

Lincoln Branch Library
851 Joseph Ave
Rochester, NY 14261
P: (585) 428-8210
Hours: Mon., Tues., Wed. 10 am – 6 pm
Thurs., Fri. 12 pm – 6 pm
Sat. 12 pm – 4 pm
Sun. Closed

NYSDEC Region 8
6274 East Avon-Lima Rd
Avon, NY 14414
Attn: Danielle Miles
P: (585) 226-5353
Hours: Mon.-Fri. 8 am – 4 pm
(Call for an appointment)

Appendix B

Site Contact List

1. THE CHIEF EXECUTIVE OFFICER AND PLANNING BOARD/DEPT. CHAIR OF EACH COUNTY, CITY, TOWN AND VILLAGE IN WHICH THE PROPERTY IS LOCATED.

Monroe County

County Executive – Cheryl Dinolfo
110 County Office Building
39 W. Main St.
Rochester, NY 14614
Phone:(585) 753-1000
Email: countyexecutive@monroecounty.gov

Chief Economic Development Officer – Jeff Adair
City Place
50 W. Main St
Rochester, NY 14614
Phone: (585) 753-2000
Email: mcplanning@monroecounty.gov

City of Rochester

Mayor – Lovely A. Warren
City Hall, Room 307A
30 Church St
Rochester, NY 14614
Phone: (585) 428-7045

City Planning Commission Chair - David L. Watson
Division of Zoning
City Hall, Room 125B
Rochester, NY 14614
Phone: (585) 428-6914

2. RESIDENTS, OWNERS, AND OCCUPANTS OF THE PROPERTY AND PROPERTIES ADJACENT TO THE PROPERTY.

Property Owners

WBS Capital, Inc.
136-20 38th Avenue Suite 9J
Flushing, NY 11354

Adjacent Property Owners

WBS Capital, Inc. (090.84-1-3.001, 090.76-24.002, 090.84-1-22.001, 1364-1368, 090.84-1-39, 090.84-1-42.001, 090.84-1-69, 090.84-1-68)
136-20 38th Avenue Suite 9J
Flushing, NY 11354

RCS Property Holdings LLC (090.84-1-21.001)
1400 St Paul St
Rochester, NY 14621

3. LOCAL NEWS MEDIA FROM WHICH THE COMMUNITY TYPICALLY OBTAINS INFORMATION.

News Papers

CITY Newspaper
250 N. Goodman St.
Rochester, NY 14607
Phone: 585-244-3329
Fax: 585-244-1126

Rochester Democrat and Chronicle
245 E Main St.
Rochester, NY 14604
Phone: 585-232-7100

TV

Spectrum News
71 Mt. Hope Ave.
Rochester, NY 14620
Phone: 585-756-2424

WHAM
4225 W. Henrietta Rd.
Rochester, NY 14623
Phone: 585-334-8700

WROC
201 Humboldt St.
Rochester, NY 14610
585-288-8400

4. THE PUBLIC WATER SUPPLIER WHICH SERVICES THE AREA IN WHICH THE PROPERTY IS LOCATED

Public Water Supplier

City of Rochester Bureau of Water
10 Felix St
Rochester, NY 14608

Monroe County Water Authority
475 Norris Dr
P.O. Box 10999

Rochester, NY 14610

5. ANY PERSON WHO HAS REQUESTED TO BE PLACED ON THE CONTACT LIST.

Monroe County Planning Manager
Thomas Goodwin
8100 City Place
50 W. Main St.
Rochester, NY 14614
Phone: 585-753-2000
Email: mcplanning@monroecounty.gov

Group 14621 Community Association, Inc.
A Subsidiary of North East Area Development, Inc./NEAD
1171 North Clinton Avenue
Rochester, New York 14621
Phone: 585-266-4693
Email: group14621@group14621.com

6. THE ADMINISTRATOR OF ANY SCHOOL OR DAY CARE FACILITY LOCATED ON OR NEAR THE PROPERTY.

There are no schools/day care facilities on the property.

Rochester School for the Deaf
Gary Meyer, Administrator
1545 St Paul St
Rochester, NY 14621
Phone: 585-544-1240

7. THE LOCATION OF A DOCUMENT REPOSITORY FOR THE PROJECT (E.G., LOCAL LIBRARY).

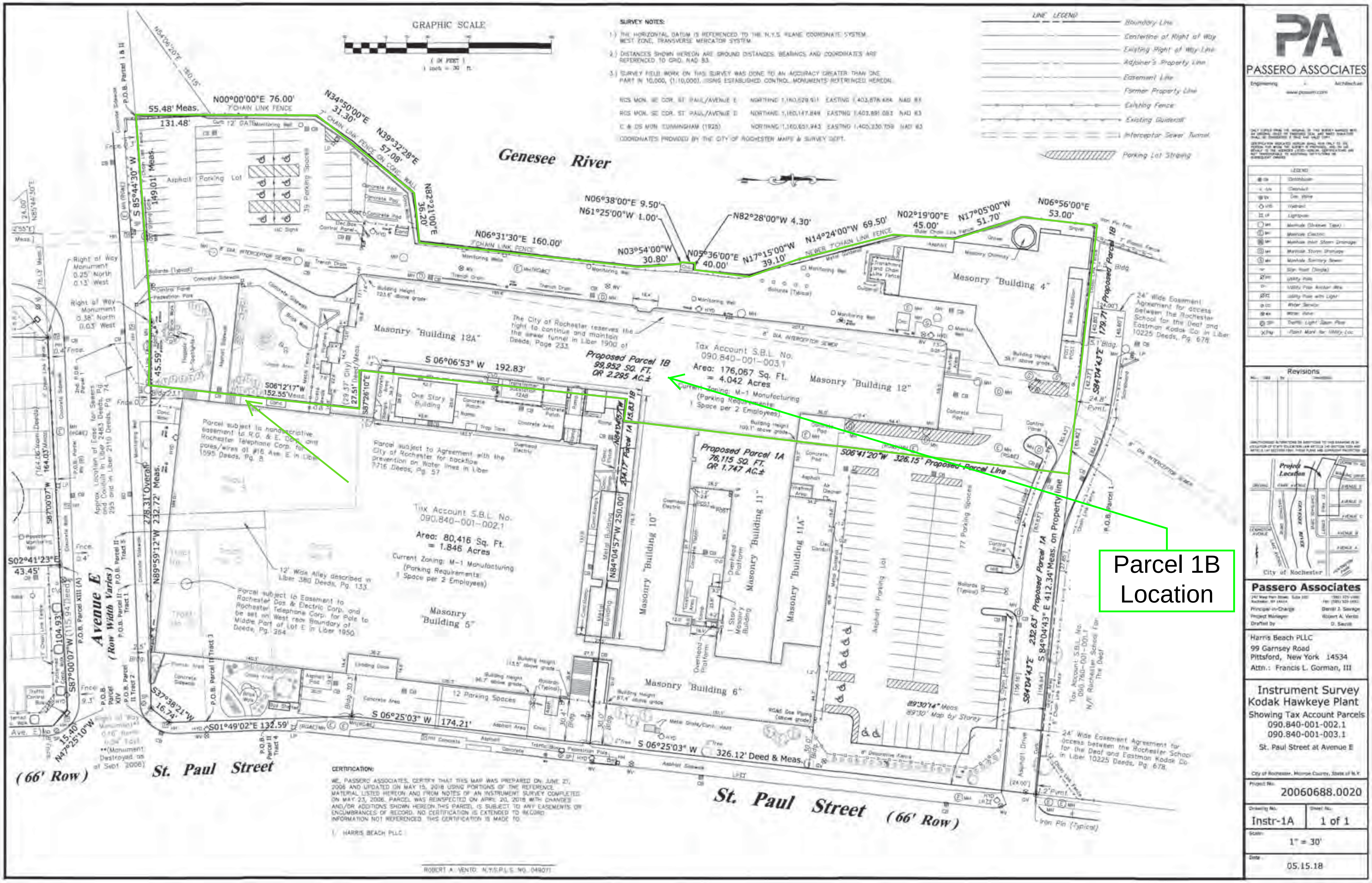
Lincoln Branch Library
851 Joseph Ave
Rochester, NY 14261
Phone: 585-428-8210

8. COMMUNITY BOARD IN A CITY WITH A POPULATION OF ONE MILLION OR MORE

Not Applicable.

Appendix C

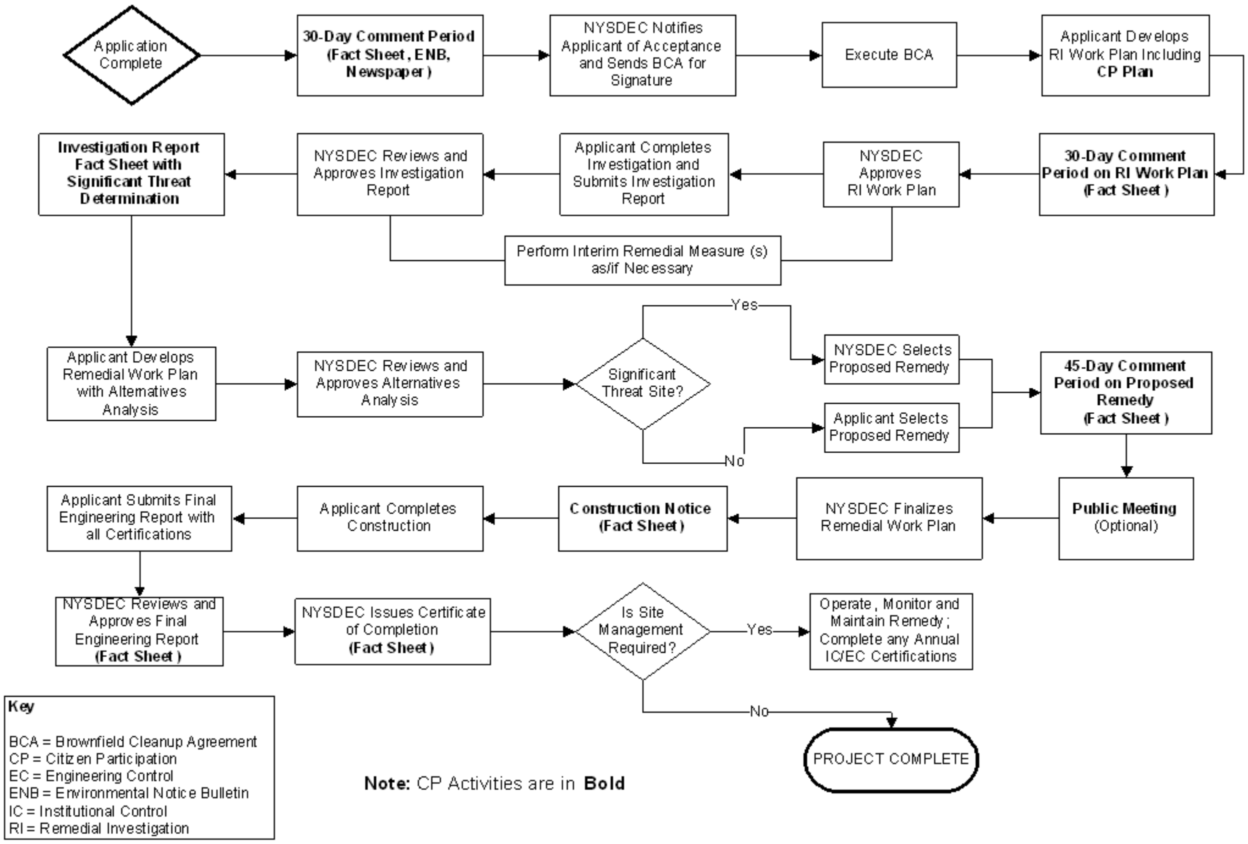
Site Location Map



GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.
SURVEY NOTES:
1.) THE HORIZONTAL DATUM IS REFERENCED TO THE N.Y.S. PLANE COORDINATE SYSTEM WEST ZONE, TRANSVERSE MERCATOR SYSTEM.
2.) DISTANCES SHOWN HEREON ARE GROUND DISTANCES. BEARINGS AND COORDINATES ARE REFERENCED TO GRID, NAD 83.
3.) SURVEY FIELD WORK ON THIS SURVEY WAS DONE TO AN ACCURACY GREATER THAN ONE PART IN 10,000, (1:10,000), USING ESTABLISHED CONTROL MONUMENTS REFERENCED HEREON.
Genesee River
St. Paul Street
(66' Row)
Avenue E
(Row Width Varies)
Masonry "Building 12A"
Masonry "Building 12"
Masonry "Building 4"
Masonry "Building 5"
Masonry "Building 6"
Masonry "Building 10"
Masonry "Building 11"
Masonry "Building 11A"
Proposed Parcel 1B
99,952 SQ. FT.
OR 2.295 AC.±
Proposed Parcel 1A
76,115 SQ. FT.
OR 1.747 AC.±
Tax Account S.B.L. No. 090.840-001-003.1
Area: 176,067 Sq. Ft. = 4.042 Acres
Current Zoning: M-1 Manufacturing
(Parking Requirements: 1 Space per 2 Employees)
Tax Account S.B.L. No. 090.840-001-002.1
Area: 80,416 Sq. Ft. = 1.846 Acres
Current Zoning: M-1 Manufacturing
(Parking Requirements: 1 Space per 2 Employees)
The City of Rochester reserves the right to continue and maintain the sewer tunnel in Liber 1900 of Deeds, Page 233.
24' Wide Easement Agreement for access between the Rochester School for the Deaf and Eastman Kodak Co. in Liber 10225 Deeds, Pg. 678.
S06°41'20"W 326.15' Proposed Parcel Line
S 06°06'53" W 192.83'
N06°31'30"E 160.00'
N00°00'00"E 76.00'
S 06°25'03" W 326.12' Deed & Meas.
Parcel 1B Location
CERTIFICATION:
WE, PASSERO ASSOCIATES, CERTIFY THAT THIS MAP WAS PREPARED ON JUNE 21, 2006 AND UPDATED ON MAY 15, 2018 USING PORTIONS OF THE REFERENCE MATERIAL LISTED HEREON AND FROM NOTES OF AN INSTRUMENT SURVEY COMPLETED ON MAY 23, 2006. PARCEL WAS REINSPECTED ON APRIL 20, 2018 WITH CHANGES AND/OR ADDITIONS SHOWN HEREON. THIS PARCEL IS SUBJECT TO ANY EASEMENTS OR ENCUMBRANCES OF RECORD. NO CERTIFICATION IS EXTENDED TO RECORD INFORMATION NOT REFERENCED. THIS CERTIFICATION IS MADE TO:
1.) HARRIS BEACH PLLC
ROBERT A. VENTO N.Y.S.P.L.S. NO. 049071
PASSERO ASSOCIATES
Engineering Architecture
Passero Associates
Harris Beach PLLC
99 Garnsey Road
Pittsford, New York 14534
Attn.: Francis L. Gorman, III
Instrument Survey
Kodak Hawkeye Plant
Showing Tax Account Parcels
090.840-001-002.1
090.840-001-003.1
St. Paul Street at Avenue E
Project No. 20060688.0020
Drawing No. Instr-1A
Sheet No. 1 of 1
Scale: 1" = 30'
Date: 05.15.18

Appendix D

BCP Process Flowchart



Note: CP Activities are in **Bold**