Erie Harbor Site

MONROE COUNTY

ROCHESTER, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: C828125

Prepared for:

Erie Harbor, LLC
1000 University Avenue, Suite 500
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Prepared by:

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date
1	2/27/2018	SSDS for Buildings #3 and #4; Modifications to Monitoring Well Field and Groundwater Monitoring Program, Laboratory Name Change	
2	8/22/2024	Updates SMP template, NYSDEC Project Manager, and Groundwater Monitoring Program	

AUGUST 2024

CERTIFICATION STATEMENT

I, Jeffrey A. Danzinger, certify that I am currently a Qualified Environmental Professional as in defined in 6 NYCRR Part 375 and that this Site Management 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) and Green Remediation (DER-31).

_______________________________ , QEP

AUGUST 22, 2024_______________ DATE

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ROCHESTER, NEW YORK

SITE MANAGEMENT PLAN

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List of Acronyms

ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulation
COC	Certificate of Completion
CP	Commissioner Policy
DAY	Day Environmental, Inc.
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
EWP	Excavation Work Plan
FER	Final Engineering Report
FID	Flame Ionization Detector
HASP	Health and Safety Plan
IC	Institutional Control
IRM	Interim Remedial Measure
mg/kg	Milligrams per Kilogram
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
OM&M	Operation, Maintenance and Monitoring
ORC-A	Oxygen Release Compound-Advanced
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
P.E.	Professional Engineer
PFAS	Per- and Polyfluoroalkyl Substances
PID	Photoionization Detector
PPM	Parts Per Million
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QEP	Qualified Environmental Professional
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan

RI	Remedial Investigation
RI/RAA	Remedial Investigation/Remedial Alternatives Analysis
RSO	Remedial System Optimization
RWP	Remedial Work Plan
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SSDS	Sub-slab Depressurization System
SVOC	Semi-Volatile Organic Compound
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TIC	Tentatively Identified Compound
TOGS	Technical and Operational Guidance Series
URS	URS Corporation
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification:	Site No. C828125 Erie Harbor Site, 225-405 Mt Hope Ave, Rochester, New York

Institutional Controls:	1. The property may be used for restricted residential; commercial, and/or industrial use;
	2. The property will not be used for a higher level of use, such as unrestricted use as defined in 6 NYCRR Part 375-6.8(a) without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC
	3. Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns
	4. All ECs must be operated and maintained as specified in this SMP
	5. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Monroe County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department
	6. Groundwater and other environmental or public health monitoring must be performed as defined in this SMP. Public health monitoring includes real-time air monitoring for particulates and VOCs when potentially impacted soil/fill are being disturbed
	7. Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP
	8. All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP

Site Identification:	Site No. C828125 Erie Harbor Site, 225-405 Mt Hope Ave, Rochester, New York

Institutional Controls:	9. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP
	10. Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP
	11. Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement
	12. The potential for vapor intrusion must be evaluated for any buildings developed in the central portion of the Site shown as "EC Area" on Figure 13, and any potential impacts that are identified must be monitored or mitigated
	13. Vegetable gardens and farming on the site are prohibited
	14. An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible
	15. The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an environmental expert that has been selected by the Volunteer and has been found acceptable to the NYSDEC

Site Identification: Site No. C828125

Erie Harbor Site, 225-405 Mt Hope Ave, Rochester, New York

Engineering Controls:	1. Sub-Slab Depressurization System

Inspections:	Frequency
1. Site Wide Inspection	Annually
Monitoring:	
1. Groundwater Monitoring Wells MW-05, DAYMW-05A, DAYMW-08, DAYMW-09A and DAYMW-10	Biannually (i.e., every 2 years)
2. Soil Vapor Intrusion Evaluation for New Buildings	As needed
Maintenance:	
1. Sub-Slab Depressurization System	As needed
Reporting:	
1. Periodic Review Report	Annually

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the Erie Harbor Site located at 225-405 Mt. Hope Avenue, Rochester , New York (hereinafter referred to as the "Site"). See Figure 1. The Site is currently in the New York State (NYS) Brownfield Cleanup Program (BCP), Site No. C828125, which is administered by New York State Department of Environmental Conservation (NYSDEC or Department). The site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index #B8-0673-04-08S, Site #C828125, which was executed on December 2, 2004.

Erie Harbor, LLC entered into a BCA on December 2, 2004 with the NYSDEC to remediate the 6.016 acre Site. This BCA required the Remedial Party, Erie Harbor, LLC, to investigate and remediate contaminated media at the site. A figure showing the site location and boundaries of this 6.016-acre site is provided in Figure 1. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in Appendix A.

After completion of the remedial work, some contamination was left at this site, which is hereafter referred to as "remaining contamination". Institutional and Engineering Controls (ICs and ECs) have been incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Monroe County Clerk, requires compliance with this SMP and all ECs and ICs placed on the site.

This SMP was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with Environmental Conservation Law (ECL) Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC); and
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the BCA (Index #B8-0673-04-08S ; Site # C828125) for the site, and thereby subject to applicable penalties.

All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in Appendix B of this SMP.

This SMP was prepared by Day Environmental, Inc. (DAY), on behalf of Erie Harbor, LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the site and the potential for human health exposures to remaining contamination.

1.2 Revisions and Alterations

Revisions and alterations to this plan will be proposed in writing to the NYSDEC's project manager. The NYSDEC can also make changes to the SMP or request revisions from the remedial party. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shutdown of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. All approved alterations must conform with Article 145 Section 7209 of the Education Law regarding the application of professional seals and alterations. For example, any changes to as-built drawings must be stamped by a

New York State Professional Engineer. In accordance with the Environmental Easement for the site, the NYSDEC project manager will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

1. 60-day advance notice of any proposed changes in site use that are required under the terms of the BCA, 6 NYCRR Part 375 and/or Environmental Conservation Law.

2. 7-day advance notice of any field activity associated with the remedial program.

3. 15-day advance notice of any proposed ground-intrusive activities below two feet that may have the potential to encounter impacted materials (e.g., potentially contaminated fill, soil, groundwater) pursuant to the Excavation Work Plan. If the ground-intrusive activity qualifies as a change of use as defined in 6 NYCRR Part 375, the above mentioned 60-day advance notice is also required.

4. Notice within 48 hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.

5. Notice within 48 hours of any non-routine maintenance activities.

6. Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

7. Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

8. At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the BCA and all approved work plans and reports, including this SMP.

9. Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1.3 on the following page includes contact information for the above notifications. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table 1.3 : Notifications*

Name	Contact Information	Required Notification**
Mackenzie Osypian NYSDEC Project Manager	585-226-5409 Mackenzie.osypian@dec.ny.gov	All Notifications
Dave Pratt NYSDEC Project Manager’s Supervisor	(585) 226-5449 david.pratt@dec.ny.gov	All Notifications
Site Control Section Chief	DERSiteControl@dec.ny.gov	Notifications 1 and 8
Julia Kenney NYSDOH Project Manager	julia.kenney@health.ny.gov	Notifications 4, 6, and 7

* Note: Notifications are subject to change and will be updated as necessary.

** Note: Numbers in this column reference the numbered bullets in the notification list in this section.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in the City of Rochester, Monroe County, New York and is identified as Section 121.55 Block 01 and Lot 59.001on the Monroe County Tax Map (see Figure 1). The site is an approximately 6.016-acre area and is bounded by a residential apartment building to the north, City of Rochester parkland to the south, Mt. Hope Avenue with mixed residential and commercial properties beyond to the east, and City of Rochester parkland with the Genesee River beyond to the west (see Figure 1). The boundaries of the site are more fully described in Appendix A – Environmental Easement. The owner(s) of the site parcel(s) at the time of issuance of this SMP is Erie Harbor, LLC.

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: a one apartment building, seven townhouse buildings, a community building, a parking lot and landscaped areas. The Site is zoned residential and is currently an apartment and townhouse complex.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include commercial and residential properties. The properties immediately south of the Site include commercial and residential properties; the properties north of the Site include residential properties; the properties immediately east of the Site include commercial and residential properties; and the properties to the west of the Site beyond the Genesee River include commercial and residential properties.

2.2.2 Geology

Based on the work performed to date at the Site during this project, heterogeneous fill material generally consisting of reworked soil (e.g., silt, sand, and gravel) intermixed with lesser amounts of brick, cinders, coal, slag, organics, wood, rock, concrete, asphalt, rebar, and ash is present over most of the Site to depths ranging between approximately 1.0 foot and 15.0 feet. The uppermost layer of indigenous soil predominantly consists of varying mixtures of sands, silts, gravels and lesser amounts of clay. Reference materials indicate that the bedrock underlying the overburden deposits in proximity to the Site consists of Lockport Dolomite. Four geologic cross-sections (A-A', B-B', C-C' and D-D') were developed for the Site during the Remedial Investigation (refer to Figure 3 for plan view), and are included as Figure 4, Figure 5, Figure 6 and Figure 7, respectively. Site specific boring logs are provided in Appendix C.

2.2.3 Hydrogeology

A review of a "Generalized Groundwater Contour Map" for the Rochester East quadrangle dated 1980 by Dr. Richard A. Young indicates groundwater in proximity to the Site flows toward the north and/or northeast. As per the United States Department of the Interior Geological Survey, Water-Resources Investigations Report #84-4259 Potentiometric Surface and Groundwater Movement Map, groundwater in proximity to the Site is shown to flow toward the northeast.

Figure 8 and Figure 9 illustrate groundwater flow conditions during the remedial investigation at the Site on September 5, 2006 and April 2, 2007, respectively. As shown, groundwater over the majority of the Site generally flows toward the east away from the Genesee River. However, groundwater on the southern portion of the Site generally flows in a southerly direction, which is cross-gradient and reverse flow in relation to the Genesee River. These flow directions may be modified locally due to buried utilities, seasonal conditions, or other factors. The top of the groundwater table is typically between 6 and 12 feet below the ground surface

Groundwater contour maps are shown in Figure 8 and Figure 9, and groundwater elevations measured at each well during these events are provided on these figures. Groundwater monitoring well construction diagrams are provided in Appendix C.

2.3 Investigation and Remedial History

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 – References.

2.3.1 Site History

Between the mid-1970s and 2009, the Site was developed with five 4-story slab-on-grade apartment buildings totaling approximately 205,000 square feet of building space, and housing 200 units. Prior to the mid-1970s, the Site was historically used as a warehouse, feeder canal for the Erie Canal, rail yards, a workshop, auto repair, car sales, a wagon shop, iron cutting, a brick storage yard, a tannery, and a coal yard. In addition, historical Sanborn Maps suggested gasoline tanks associated with the former gasoline station(s) may be present on the southern end of the Site. In 2009, the five apartment buildings were demolished. The former apartment buildings, and other historical features, are shown on Figure 2. The Site was subsequently redeveloped with nine new restricted residential buildings (one apartment building, seven townhouse buildings, and one community building).

DAY performed previous studies on properties that include the Site. The reports completed include the following:

- *Phase I Environmental Site Assessment Report; 151 to 435 Mt. Hope Avenue and 562 Ford Street; Rochester; New York*; dated October 24, 2000 (DAY File #2307E-00). This report included historical maps, such as Sanborn maps and Plat Books, which depicted historical uses, operations and occupants on the Site.

- *Phase II Environmental Study Data Package; 151-435 Mount Hope Avenue and 562 Ford Street Rochester; New York,* dated October, 2000 (DAY File #2395S-00).

- *Phase II Environmental Study Data Evaluation Report; 151, 171, 173, 175, 177, 191, 425 and 435 Mount Hope Avenue, and 562 Ford Street Rochester; New York;* dated February, 2002 (DAY File #2506S-00). This report does not include the Site, but the findings of the investigation were used to assist in interpreting data for the Site.

URS Corporation (URS) also completed an environmental study on property that included the Site. The report for the URS study is titled "*Phase II Report; Environmental Site Assessment of River Park Commons Apartment Complex; Rochester, New York*", and is dated June 2003.

The Site and surrounding area are serviced by a public sewer system and a public water supply system. A Site Plan showing relevant features on the Site prior to demolition of the five apartment buildings is included as Figure 2. Figure 3 shows the majority of cumulative test locations.

2.3.2 Summary of Remedial Investigation Findings

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the following report:

- Remedial Investigation/Remedial Alternatives Analysis Report (RI/RAA Report); Brownfield Cleanup Program NYSDEC Site ID C828125; 225-405 Mt. Hope Avenue (Low-Rise Property), Rochester, New York, dated February 2009 (DAY File #3801S-06).

Generally, the RI determined that different areas of impact are present at the Site that are attributable to past uses/operations at the Site, including on-site and off-site historic fill material, past filling station and/or auto repair facilities, possibly railroad and coal storage use, wet-type transformers on apartment buildings, etc. Impacted media identified at the Site includes areas of topsoil, subsurface fill material, subsurface soil and groundwater. Table 1 includes a summary of the samples analyzed during the RI. Table 2 provides a summary of the number of samples tested for solid and liquid media during the RI, and the type and concentrations of constituents detected in samples from the Site during the RI, and the number of samples that exceeded standards, criteria and guidance (SCG) values in one or more sample. Based on the findings of the RI, the types of impact at the Site that were identified to require remediation included:

- Polychlorinated biphenyls (PCB) at some transformer locations;
- Polycyclic aromatic hydrocarbon (PAH) semi-volatile organic compounds (SVOCs) in topsoil across the Site;
- PAH SVOCs in an area of subsurface fill material on the central portion of the Site;
- Petroleum-related volatile organic compounds (VOCs) and SVOCs in subsurface soil and groundwater on the southeastern portion of the Site; and
- VOCs trichloroethene (TCE) and dichlorodifluoromethane in groundwater and soil gas on the central portion of the Site. TCE was also detected off-site in a soil gas sample in the right of way on the east side of Mt. Hope Avenue that is inferred downgradient from the central portion of the Site. The source of these VOCs on-site and off-site is unknown.

Surface Soil and Shallow Subsurface Soil

The detected concentrations of some PAH SVOCs detected in 7 of 8 surface soil samples (i.e., designated as RI surface soil samples DAYSS-01 through DAYSS-08 that were collected from a 0-2 inch depth interval) exceeded NYSDEC Part 375 Restricted Residential Use Soil Cleanup Objective (SCOs). The concentration of mercury detected in one surface soil sample exceeded its NYSDEC Part 375 Restricted Residential Use SCO. Table 3 and Table 4 show the SVOC and metals results of the eight surface soil samples, respectively. Figure 3 and Figure 10 include the locations of surface soil sample locations DAYSS-01 through DAYSS-08. Surface soil and shallow subsurface soil consisting of topsoil was identified as requiring remediation.

Subsurface Fill

Results of RI subsurface fill samples are included on Table 5 (VOCs), Table 6 (SVOCs), Table 7 (metals and cyanide), and Table 8 (PCBs and pesticides). As shown on Table 6, Restricted Residential Use SCOs were only exceeded for some PAH SVOCs at one subsurface fill sample collected at location DAYMW-03 shown on Figure 3. No RI subsurface fill samples contained VOCs, metals, cyanide, PCBs or pesticides at concentrations exceeding Restricted Residential Use SCOs. An area of subsurface fill at the DAYMW-03 test location was identified as requiring remediation.

Subsurface Soil

Results of RI subsurface soil samples are included on Table 5 (VOCs), Table 6 (SVOCs), Table 7 (metals and cyanide), and Table 8 (PCBs and pesticides).

Petroleum contamination was detected in subsurface soil on the southeast portion of the Site. It was unknown at the time of the RI if the petroleum contaminated soil extended into the 30-foot-wide drainage easement of the Site or the adjoining right-of-way of Mt. Hope Avenue to the east (refer to Figure 3). Test locations in this area include TB-18, MWURS-1, DAYMW-02, DAYSB-03, Tank Pit/TP-2 and TP-3 shown on Figure 3, and test results for soil or fill samples collected during the RI from select test location in this area are included on Tables 5 through 8. Samples of the petroleum-contaminated soil from this southeast portion of the Site did not exceed Restricted Residential Use SCOs. However, it was suspected that the petroleum-contaminated soil in this area was contributing to petroleum contamination in groundwater on this portion of the Site. The area of petroleum-contaminated soil on the southeast portion of the Site was identified as requiring remediation.

Two limited areas of lower-level petroleum-contaminated soil were documented on the central portion of the Site. Test locations in one area included TB-31 and DAYSB-07, and test location in the other area included MW-6, SB-02, TB-30, DAYSB-14, DAYSB-15, DAYSB15A, DAYSB-15B, DAYSB15C, DAYSB-20, and DAYSB-26. These test locations area shown on Figure 3, and test results for soil or fill samples collected during the RI from select test locations in these areas are included on Tables 5 through 8. Soil and fill in these two areas did not exceed restricted residential Use SCOs, and groundwater sampling and analysis in these areas confirmed that petroleum constituents were not leaching from soil. These areas of lower-level petroleum contamination did not require remediation.

Groundwater

As part of the RI, groundwater samples were collected and analyzed from up to eleven monitoring wells across the Site. The locations of these wells are shown on Figure 3, Figure 8, and Figure 9. Test results for groundwater samples are included on Table 9 (VOCs), Table 10 (SVOCs), Table 11 (metals and cyanide), and Table 12 (PCBs and pesticides).

As shown by Table 9 and Table 10, petroleum-related constituents were detected in groundwater samples from well MWURS-1 at concentrations exceeding standards and guidance values referenced in NYSDEC Division of Water Technical and Operational Guidance Series (TOGS 1.1.1). The location of MWURS-1 is shown on the figures referenced above. This is at the area of petroleum-contaminated soil located on the southeast portion of the Site, and the petroleum-contaminated groundwater on this portion of the Site was also identified as requiring remediation.

As shown on Table 9, the VOC TCE was detected in groundwater samples from wells DAYMW-05, TW-1 and TW-3 at concentrations up to 3.6 times (i.e., highest detected concentrations of 15 ppb, 18 ppb and 10 ppb, respectively) the NYSDEC TOGS 1.1.1 groundwater standard of 5 ppb. TCE was also detected in one groundwater sample from monitoring well DAYMW-03, but at a concentration of only 3 ppb. In addition, Table 9 shows the VOC dichlorodifluoromethane (Freon 12) was detected in groundwater samples from monitoring well MW-5 at concentrations up to 1.6 times (i.e., 8 ppb) the NYSDEC TOGS 1.1.1 groundwater standard of 5 ppb. The locations of these wells are shown on the figures referenced above, and are on the central portion of the Site. The source of these VOCs detected in groundwater samples is unknown, but appears relatively localized given the fact they were not detected on a regular basis in other surface soil, subsurface soil, subsurface fill, or groundwater samples at the Site. Due to the localized distribution and minimal concentrations detected, aggressive remediation was not required by the NYSDEC for these areas of the Site; however, it was recommended that an evaluation be conducted to determine if institutional controls and engineering controls were needed to mitigate potential future exposures. As shown on Table 11, some metals were detected in groundwater samples from some of the wells at concentrations exceeding NYSDEC TOGS 1.1.1 groundwater standards and guidance values. The RI indicates that naturally occurring background conditions may be contributing to the detected concentrations of most metals detected in the groundwater samples, although it is possible past uses/operations may have also contributed to metals concentrations in groundwater at the Site. The metals in groundwater at the Site did not require remediation.

Soil Vapor Intrusion

A Vapor Intrusion Evaluation and supplemental Soil Vapor Evaluation were completed at the Site as part of the RI at the apartment buildings that have since been demolished. The vapor intrusion evaluation was used to determine if VOCs were accumulating beneath apartment building floor slabs or whether such VOCs were impacting indoor air. Vapor Intrusion sub-slab test locations SLB-01 through SLB-06, indoor air locations IA-01 through IA-06, background outdoor air locations BG-01 and BG-02 are shown on Figure 3 and the VOC test results are summarized on Table 13. The supplemental soil vapor evaluation was used to further determine the location, presence, type, and relative concentrations of VOCs on or near the central portion of the Site. Soil vapor test locations SV-1 through SV-7 and BG are shown on Figure 3 and the VOC test results are summarized on Table 14. The results showed that elevated concentrations of the VOCs TCE and/or dichlorodifluoromethane (Freon 12) were present on the central portion of the Site, most notably at some of the soil vapor sample locations. This is the same general area as that where elevated concentrations of TCE and Freon 12 were detected in groundwater samples. The source(s) of these VOCs are not known, but appear relatively localized given the fact they were not detected on a regular basis in other surface soil, subsurface soil, subsurface fill, or groundwater samples. Due to the localized distribution, aggressive remediation was not required by the NYSDEC for this area of the Site; however, it was concluded that an evaluation be completed to determine the need for institutional controls and engineering controls to mitigate potential vapor intrusion at future buildings on the central portion of the Site, and that such controls be utilized if determined to be needed. The results of the supplemental soil vapor evaluation indicate that VOCs are also present in off-site soil vapor sample SV-7 (refer to Figure 3 and Table 14). The primary VOC of interest detected at the off-site test location SV-7 is TCE, and its source is unknown. The RI indicated that a determination needs to be made regarding whether further evaluation of VOCs by the NYSDEC and NYSDOH is warranted off-site.

Underground Storage Tanks

Test pit TP-2 was excavated as a result of a magnetic anomaly identified during a geophysical survey (refer to Figure 3). During excavation of this test pit, an abandoned underground storage tank (UST) was encountered. The UST was permanently closed (i.e., removed) in accordance with applicable regulations. The UST was observed to be constructed of bare steel, was observed in poor condition, had a storage capacity of approximately 1,000 gallons, contained approximately 128 gallons of water that was disposed as part of the closure process, and soil immediately beneath the UST was contaminated with petroleum most likely resembling weathered gasoline. This UST was located within the southeast portion of the Site where petroleum-contaminated soil and groundwater were identified in an area of the Site that was formerly operated as a gasoline and/or service station. Documentation concerning the permanent closure (i.e., removal) of this UST, including results of a soil sample collected beneath the UST, were included in the RI/RAA Report.

PCB Transformers

Four transformers were located at apartment buildings addressed as 225, 285, 345, and 385 Mt. Hope Avenue, and contained transformer oil with PCB concentrations of 20,400 milligram/kilogram (mg/kg) or parts per million (ppm), 580 mg/kg, 2,880 mg/kg, and 1,340,000 mg/kg, respectively. The locations of these transformers are shown on Figure 3.

- On July 25, 2005, the PCB transformer at the 345 Mt. Hope Avenue building was reported leaking PCB fluid. The transformer and its contents were removed and disposed off-site, impacted media were remediated to the extent practicable, and the NYSDEC closed its associated spill file #0550701. The NYSDEC agreed that an area of PCB-impacted concrete floor inside the associated sidewalk vault could be addressed when the existing building was demolished.

- On September 16, 2005, the PCB transformer at the 225 Mt. Hope Avenue building was reported leaking PCB fluid. The transformer and its contents were removed and disposed off-site, impacted media were remediated to the extent practicable, and the NYSDEC closed its associated spill file #0551001. The NYSDEC agreed that an area of PCB-impacted curbing on the associated sidewalk vault could be addressed when the existing building was demolished. In addition, it was agreed that further evaluation of the concrete and soil under the transformer pad edges would be completed at the time the associated building was slated for demolition.

- It was agreed with the NYSDEC that the PCB transformers at the 285 Mt. Hope Avenue building and the 385 Mt. Hope Avenue building would be evaluated at the time the associated buildings were slated for demolition

2.3.2 Summary of Remedial Actions

The site was remediated in accordance with the NYSDEC approved Interim Remedial Measure Work Plan (IRM Work Plan) dated January 27, 2009, the NYSDEC-approved Remedial Work Plan (RWP) dated March 2009, and an Addendum to the March 2009 RWP dated July 30, 2009. In a letter dated March 19, 2009, the NYSDEC approved the IRM Work Plan, with a modification in the letter. In a letter dated November 2, 2009, the NYSDEC approved the RWP, with the modifications contained in the Addendum.

The following is a summary of the Remedial Actions performed at the site:

1. Excavation of soil/fill, exceeding restricted residential SCOs shown in Appendix D, to depths ranging between approximately 0.5 feet (topsoil) to 20

feet (i.e., approximately depth to bedrock) depending upon the conditions requiring remediation at the specific removal areas;

2. Post-excavation soil sampling and analysis as required at select excavation areas;

3. In-situ treatment with chemical oxidation and bioremediation products. This involved installation of the remediation products at two soil removal excavation areas prior to their backfilling, as well as subsequent direct injection in a localized area abutting these excavation areas;

4. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the site;

5. Remediation of the four PCB transformer areas, which involved removal of the two existing PCB Transformers located at the 285 Mt. Hope Avenue building and at the 385 Mt. Hope Avenue building, as well as removal and disposal of impacted concrete pads, concrete curbing and/or soil present at three of the transformer areas;

6. Environmental screening of disturbed media during building demolition and utility disconnection work;

7. Removal and disposal of excess soil and fill material that was generated during demolition and rough grading activities at the Site; and

8. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting.

9. Design, installation, operation and monitoring of a sub-slab depressurization system (SSDS) engineering control on Building #3 and Building #4 on the

central portion of the Site for mitigation of the potential for vapor intrusion of VOCs, generally consisting of TCE and Freon 12, into these two buildings;

10. Modification of the monitoring well field at the Site as a result of Site redevelopment work; and

11. Groundwater monitoring.

2.3.2.1 Removal of Contaminated Materials from the Site

For this project, the SCOs for applicable land use are Restricted Residential SCOs reference in NYSDEC Part 375, Table 375-6.8(b). Contaminated materials were removed from the Site to meet the Restricted Residential SCOs for the Site-related COCs. As part of the Interim Remedial Measure (IRM), the two remaining PCB Transformers and the two non-PCB Transformers were removed and disposed off-site. During the IRM and subsequent main remediation, a total of 9,457.14 tons (15.9 tons of hazardous material during IRM removal, and 9,440.76 tons of non-hazardous material during primary remediation removal) of soil, fill material and some concrete was removed from the Erie Harbor Site on NYSDEC Part 364-permitted trucks and disposed at a regulated landfill facility as part of the remedy. The removal work involved the following media:

PCB Transformer Areas

The two remaining PCB Transformers (i.e., Transformer #2 at 285 Mt. Hope Avenue, and Transformer #4 at 385 Mt. Hope Avenue), and the two non-PCB Transformers (i.e., Transformer #1 at 225 Mt. Hope Avenue and Transformer #3 at 345 Mt. Hope Avenue), and any contents, were disposed off-site in accordance with applicable regulations. The locations of the four transformer areas are shown on Figure 3. Soil, fill and concrete removal was subsequently required at three of the transformer areas, and confirmatory soil samples from these areas show PCB concentrations are below the Restricted Residential SCO for PCBs of 1.0 ppm. These transformer areas are as follows:

- Transformer #1 (225 Mt. Hope Avenue PCB Transformer). Removed material from this transformer area was disposed off-site as hazardous waste.
- Transformer #2 (285 Mt. Hope Avenue PCB Transformer). Based on supplemental testing, removed material from this transformer area was disposed off-site as non-hazardous waste.
- Transformer #3 (345 Mt. Hope Avenue PCB Transformer). Removed material from this transformer area was disposed off-site as hazardous waste and also as a non-hazardous waste based on PCB concentrations. This transformer area required more soil excavation (i.e., 20 feet deep, with a final excavation area of approximately 428 square feet, also discussed as the Area G excavation) than the other two transformer areas (refer to Figure 3) in order to meet the Restricted Residential SCO for PCBs of 1.0 ppm.

Excess Soil/Fill

The following areas of excess soil/fill material were removed from the Site:

- A pile of excess soil/fill and some topsoil that were generated as a result of constructing a paved parking lot on the northern portion of the Site for use by residents of the adjoining Hamilton apartment complex.
- A pile of excess topsoil/soil/fill material as a result of rough grading on the central portion of the Site.
- A pile of excess topsoil/soil/fill material as a result of rough grading on the central portion of the Site.

Topsoil Soil Removal (Areas A, B and C)

Topsoil (i.e., surface soil and shallow subsurface soil) present at locations across the Site that surrounded the footprints of apartment buildings and other site improvements prior to their demolition (i.e., covering a total of approximately 81,324 square feet) required removal in order to meet Restricted Residential SCOs for SVOCs, and also meet the Restricted Residential SCO for mercury in one limited location. Topsoil was removed from Area A (an approximate 74 square foot area) and Area B (an approximate 64 square foot area) as an IRM during the demolition of the apartment buildings at the Site (refer to Figure 3 and Figure 10). Area A was excavated to a depth of approximately 3.0 feet below the initial ground surface. Area B was excavated to depths ranging between approximately 2.5 feet and 3.2 feet below the initial ground surface. The results of final confirmatory soil samples from Area A and Area B are below Restricted Residential SCOs for SVOCs in Area A and Area B, and also for VOCs in the western portion of Area B, where unanticipated soil contamination with a citrus cleaner odor and elevated photoionization detector (PID) readings had been removed.

The results of twelve soil/fill samples collected at locations S-1 through S-12 immediately beneath the topsoil did not exceed Part 375 Restricted Residential Use SCOs for SVOCs (refer to Figure 10). These sub-soil samples were used as pre-excavation confirmatory soil samples for topsoil across remaining portions of the Site (i.e., designated as Area C covering approximately 81,186 square feet). The topsoil at Area C with an average thickness of 0.5 foot was subsequently removed (refer to Figure 10).

Area D Excavation

Subsurface fill was removed from the Area D excavation as shown on Figure 11. The fill material that was removed contained PAH SVOCs at concentrations exceeding Restricted Residential SCOs. The final excavation had an area of approximately 1,906 square feet with depths generally ranging between 6.8 feet and 10.5 feet below the existing ground surface. Fill was removed down to the top of indigenous soils, and until samples from each of four sidewalls and also two bottom samples were below the Restricted Residential Use SCOs for SVOCs.

Area E Excavation

Subsurface petroleum-contaminated soil and an empty UST were removed from the Area E excavation as shown on Figure 12. Further documentation pertaining to this removed UST is provided in the Final Engineering Report (FER). Where possible, soil was removed from the excavation until PID readings were at or below 25 ppm. The final excavation had an area of approximately 1,268 square feet with a depth of approximately 20 feet below the existing ground surface. Post-excavation soil samples were collected from excavation walls and bottom, and the results were below Restricted Residential Use SCOs for VOCs and SVOCs. In order to further remediate (i.e., polish) soil and groundwater within and in proximity to the Area E soil removal area, chemical oxidation and aerobic bioremediation products were placed in the excavation prior to backfilling (refer to Section 2.3.2.2).

Area F Excavation

Subsurface petroleum-contaminated soil was removed from the Area F excavation as shown on Figure 12. Soil was removed from the excavation until PID readings were at or below 25 ppm, except for the bottom of the excavation between two sheet pilings, which contained standing water and some sheen/petroleum globules and was located over a six-foot diameter storm sewer line. Approximately 5 boxes of absorbent pads (100 pads per box) and 4 boxes of absorbent socks (12 socks per box) were used to remove the majority of oil sheen/globules from the top of the standing water. Soil on the bottom of the Area F excavation that exhibited petroleum odors and PID readings greater than 1,000 ppm was not removed due to its proximity to the underlying storm sewer line. The final Area F excavation had an area of approximately 1,213 square feet with a depth generally ranging between 11 feet and 12 feet below the existing ground surface. As an exception, a portion of the excavation was only excavated to a depth of about 7 feet below the ground surface so that an east-west transecting sewer lateral would not be damaged (refer to Figure 12). Post-excavation soil samples were collected from excavation walls and bottom, and the results were below Restricted Residential Use SCOs for VOCs and SVOCs. In order to further remediate (i.e., polish) soil and groundwater within and in proximity to the Area F soil removal area, chemical oxidation and aerobic bioremediation products were placed in the excavation prior to backfilling (refer to Section 2.3.2.2).

Area F Extension Excavation

Subsurface petroleum-contaminated soil was removed from the Area F Extension excavation as shown on Figure 12. Where possible, soil was removed from the excavation until PID readings were at or below 25 ppm. The final excavation had an area of approximately 663 square feet with a depth of approximately 20 feet below the existing ground surface. Post-excavation soil samples were collected from excavation walls and bottom, and the results were below Restricted Residential Use SCOs for VOCs and SVOCs. However, soil from test boring T-1 immediately east of the eastern wall of the Area F Extension Excavation contained petroleum contaminants at concentrations that exhibited a peak PID reading of 1,878 ppm (refer to Figure 12). In order to further remediate (i.e., polish) soil and groundwater within and in proximity to the Area F Extension soil removal area, chemical oxidation and aerobic bioremediation products were placed in the excavation prior to backfilling and also outside the excavation including the area of Test Boring T-1 (refer to Section 2.3.2.2).

2.3.2.2 Site-Related Treatment Systems

In-Situ Chemical Oxidation and Bioremediation

Regenesis' RegenOx™ (RegenOx) and Oxygen Release Compound-Advanced® (ORC-A) were used for in-situ chemical oxidation and aerobic bioremediation on the southeast portion of the Site. Prior to backfilling, a total of approximately 2,000 pounds of RegenOx and 600 pounds of ORC-A were mixed with water and placed in the Area E, Area F, and Area F Extension F excavations. In addition, approximately 790 pounds of RegenOx and 350 pounds of ORC-A were mixed with water and injected at 6 injection points (i.e., I-1 through I-6) on the Site immediately east and south of the southeast corner of the backfilled Area F Extension excavation. Figure 12 shows the above-referenced excavation and subsequent injection point locations. Subsequent soil and groundwater performance monitoring have shown significant reductions in contaminant concentrations on this portion of the Site.

Soil Vapor Intrusion Mitigation Systems

With NYSDEC and NYSDOH input, it was determined during redevelopment planning that new Building #3 and new Building #4 constructed on the central portion of the Site (refer to "EC Area" on Figure 13) required soil vapor intrusion mitigation system engineering control. The purpose of this engineering control is to mitigate the potential for vapor intrusion into these two buildings on this portion of the Site. The engineering control at Building #3 and Building #4 consists of a SSDS.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Remedial Investigation/Remedial Alternatives Analysis Report dated February 2009 are as follows:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.

- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Soil Vapor

Although not identified in the RI/RAA report, the following soil vapor RAO for Public Health Protection is provided

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

2.5 Remaining Contamination

The Site has been remediated to meet Restricted Residential SCOs for soil and fill material. Subsequent to implementing the remedy, remaining contamination at the Site is identified below.

Subsurface contamination consisting of petroleum-related constituents (i.e., weathered gasoline) remains on the southeast corner of the Site. The residual contamination left behind after source removal generally meets Track 1 Unrestricted Use

SCOs. However, some petroleum contamination had to be left in the bottom of the Area F excavation shown on Figure 12. In general, the top of this petroleum contamination is located about 12 feet below the ground surface between two pre-existing sheet pilings that appear related to the previous installation of a 6-foot diameter storm sewer pipe that is beneath this excavation area. The presence of the active 6-foot storm sewer prohibited deeper excavation of contaminated media at this location. This area is within a 30-foot drainage easement that runs parallel to Mt. Hope Avenue. A total of 2,000 pounds of RegenOx and 600 pounds of ORC-A were placed in the excavations on this southeast portion of the Site prior to backfilling to assist with in-situ chemical oxidation and aerobic bioremediation of any remaining contamination. Some additional RegenOx and ORC-A were also placed immediately outside a limited portion of the area that was excavated (refer to Section 2.3.2.2). Further characteristics of the petroleum contamination are provided below.

- Contaminated soils below an approximately 12-foot depth beneath the Area F excavation, and also groundwater in this area, may exhibit petroleum-type nuisance odors when excavated.

- Brown petroleum globules and petroleum sheen may be encountered on the top of groundwater in or beneath the Area F excavation.

Confirmatory sampling/analysis and groundwater monitoring (including sampling/analysis) are planned for the southeast corner of the Site, which may show this petroleum contamination has been further remediated by the RegenOx and ORC-A excavation and in-situ applications

2.5.1 Soil

Table 15 (VOCs), Table 16 (Metals), Table 17 (Pesticides and PCBs) and Figure 14 summarize the results of all soil samples collected that exceed the Unrestricted Use SCOs at the site after completion of remedial action. As shown, this includes subsurface soil or historic subsurface fill at test pit, test boring and confirmatory sample locations for samples collected during previous investigations, the remedial investigation, the IRM work, and the remedial work.

2.5.3 Groundwater

TCE and Freon 12 remain in groundwater on the central portion of the Site. Some detected TCE and Freon 12 concentrations slightly exceed the TOGS 1.1.1 groundwater standard of 5 ug/l. In general, the detected concentrations of these VOCs do not appear to emit a noticeable odor or staining in the groundwater, but their presence can sometimes be detected with a PID or flame ionization detector (FID).

Table 9 (VOCs), Table 10 (SVOCs), Table 11 (Metals and Cyanide), Table 12 (Pesticides and PCBs) summarize the results of all samples of groundwater that exceed the SCGs after completion of the remedial action.

2.5.5 Soil Vapor

VOCs (e.g., acetone, benzene, cyclohexane, hexane, toluene, xylenes, etc.) were also detected in soil vapor in the central portion of the Site. While these VOCs do not exceed Track 1 Unrestricted SCOs and are therefore present at very low concentrations, nevertheless, their presence represents a potential for vapor intrusion into future buildings on this portion of the Site.

Table 13 and Table 14 summarize the results of all samples of soil vapor that exceed the SCGs after completion of the remedial action.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC project manager.

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix D) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC project manager.

3.2 Institutional Controls

A series of ICs is required by the Remedial Action Work Plan (RAWP) to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the site to restricted residential, commercial, and/or industrial uses only. Adherence to these ICs on the site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are included in the Environmental Easement These ICs are:

- The property may be used for: restricted residential, commercial, and/or industrial use;

- The property will not be used for a higher level of use, such as unrestricted use as defined in 6 NYCRR Part 375-6.8(a) without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;

- All ECs must be operated and maintained as specified in this SMP;

- All ECs must be inspected at a frequency and in a manner defined in the SMP;

- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Monroe County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP. Public health monitoring includes real-time air monitoring for particulates and VOCs when potentially impacted soil/fill are being disturbed;

- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;
- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement;
- The potential for vapor intrusion must be evaluated for any buildings developed in the central portion of the Site shown as "EC Area" on Figure 13, and any potential impacts that are identified must be monitored or mitigated;
- Vegetable gardens and farming on the site are prohibited;
- An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible; and
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any

changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an environmental expert that has been selected by the Volunteer and has been found acceptable to the NYSDEC.

3.2.1 Excavation Work Plan

The site has been remediated for restricted residential, commercial and/or industrial use. Any future intrusive work that will penetrate, encounter or disturb the remaining contamination will be performed in compliance with the EWP that is attached as Appendix D to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A sample HASP that includes the CAMP is attached as Appendix E to this SMP that is in current compliance with DER-10, and 29 Code of Federal Regulation (CFR) 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports referenced in Section 7.0.

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

3.2.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any enclosed structures located over areas that contain remaining contamination and the potential for soil vapor intrusion (SVI) has been identified (see “Area EC” on Figure 13), an SVI evaluation will be performed to determine whether actions are needed to address the potential for exposures related to soil vapor intrusion in the proposed structure. Alternatively, a soil vapor intrusion mitigation system may be installed as an element of the building foundation without first conducting an investigation. This soil vapor intrusion mitigation system will likely include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a soil vapor intrusion mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH “Guidance for Evaluating Vapor Intrusion in the State of New York”. Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation. If any indoor air test results exceed NYSDOH guidelines, relevant NYSDOH fact sheets will be provided to all tenants and occupants of the property within 15 days of receipt of validated data.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

3.3 Engineering Controls

3.3.1 Engineering Control Systems

Engineering Controls are required on the central portion of the Site as described below.

3.3.1.1 Soil Vapor Intrusion Mitigation System

Building #3 and Building #4 were constructed on the central portion of the Site designated as "EC Area" (refer to Figure 13). Each building is equipped with a SSDS that is designed to mitigate the potential for vapor intrusion into the buildings. Figure 15 and Figure 16 depict the locations of SSDS components in Building #3 and Building #4, respectively.

Procedures for operating and maintaining the SSDS system are documented in the Operation and Maintenance Plan (Section 5.0 of this SMP). As-built drawings are included as Figure 15 and Figure 16. Figure 13 shows the location of where ECs are required at the site.

3.3.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10. Unless waived by the NYSDEC, confirmation samples of applicable environmental media are required before terminating any remedial actions at the site. Confirmation samples require Category B deliverables and a Data Usability Summary Report (DUSR).

As discussed below, the NYSDEC may approve termination of a groundwater monitoring program. When a remedial party receives this approval, the remedial party will decommission all site-related monitoring, injection and recovery wells as per the NYSDEC Commissioner Policy CP-43.

The remedial party will also conduct any needed site restoration activities, such as asphalt patching and decommissioning treatment system equipment. In addition, the remedial party will conduct any necessary restoration of vegetation coverage, trees and wetlands, and will comply with NYSDEC and United States Army Corps of Engineers regulations and guidance. Also, the remedial party will ensure that no ongoing erosion is occurring on the site.

3.3.2.1 – Sub-Slab Depressurization System (SSDS)

The SSDS at Building #3 and Building #4 will not be discontinued unless prior written approval is granted by the NYSDEC and the NYSDOH project managers. If monitoring data indicates that the SSDS may no longer be required (e.g., sub-slab air, soil, and groundwater contain no VOC concentrations with potential to adversely impact indoor air), a proposal to discontinue the SSDS will be submitted by the property owner to the NYSDEC and NYSDOH project managers.

3.3.2.2 - Monitoring Wells associated with Monitored Natural Attenuation

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC project manager in consultation with NYSDOH project manager, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the site SCGs, or have become asymptotic at an acceptable level over an extended period. In the event that monitoring data indicates that monitoring for natural attenuation may no longer be required, a proposal to discontinue the monitoring will be submitted by the remedial party. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC project manager. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC project manager. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in the Quality Assurance Project Plan provided in Appendix F.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC SCGs, particularly groundwater standards and Part 375 SCOs for soil;
- Assessing achievement of the remedial performance criteria;
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;

- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site-Wide Inspection

Site-wide inspections will be performed on a regular schedule at a minimum of once per year. These periodic inspections must be conducted when the ground surface is visible (i.e. no snow cover). Site-wide inspections will be performed by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (P.E.) who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State. Modification to the frequency or duration of the inspections will require approval from the NYSDEC project manager. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix G – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;

- Whether stormwater management systems, such as basins and outfalls, are working as designed;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records are up to date.

Inspections of all remedial components installed at the site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date;
- Changes, or needed changes, to the remedial or monitoring system; and
- Changes in site condition or use.

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the site, verbal notice to the NYSDEC project manager must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as defined in 6 NYCCR Part 375. Written confirmation must be provided to the NYSDEC project manager within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public. The remedial party will submit follow-up status reports to the NYSDEC within 45 days of the event on actions taken to respond to any emergency event requiring ongoing responsive action, describing and documenting actions taken to restore the effectiveness of the ECs.

4.3 Treatment System Monitoring and Sampling

4.3.1 Remedial System Monitoring

Monitoring of the SSDS will be performed on a routine basis, as identified in Table 4.3.1 Remedial System Monitoring Requirements and Schedule (see below). The monitoring of remedial systems must be conducted by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (P.E.) who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager. A visual inspection of the complete system will be conducted during each monitoring event. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSDS has been reported or an emergency occurs that is deemed likely to affect the operation of the system. SSDS components to be monitored include, but are not limited to, the components included in Table 4.3.1 below.

Table 4.3.1 – Remedial System Monitoring Requirements and Schedule

Remedial System Component	Monitoring Parameter	Operating Range	Monitoring Schedule
SSDS Monitoring Points	Vacuum	<-0.004 inches of water column (in. w.c.)	Annually
SSDS Above-Ground Components	General Inspection	Duct/piping/fan speed control/etc. are in proper working order	Annually
Ventilation Fans	Operation	Fans operating in good order	Annually
Alarm	Operation	Alarm operating in good order	Annually

A complete list of components to be inspected is provided in the Inspection Checklist, provided in Appendix G – Site Management Forms. If any equipment readings are not within their specified operation range, any equipment is observed to be malfunctioning or the system is not performing within specifications; maintenance and repair, as per the Operation and Maintenance Plan, is required immediately.

4.4 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from monitoring wells on a biannual basis (i.e., every two years). Sampling locations, required analytical parameters and schedule are provided in Table 4.4 – Post Remedial System Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

Table 4.4 – Post Remediation Sampling Requirements and Schedule

Sampling Location	Analytical Parameters	Schedule
	TCL VOCs + TICs (EPA Method 8260)	
Monitoring Well MW-05	X	Biannually*
Monitoring Well DAYMW-05A	X	Biannually*
Monitoring Well DAYMW-08	X	Biannually*
Monitoring Well DAYMW-09A	X	Biannually*
Monitoring Well DAYMW-10	X	Biannually*

*= Every 2 years

Detailed sample collection and analytical procedures and protocols are provided in Appendix F – Quality Assurance Project Plan.

4.4.1 Groundwater Sampling

Groundwater monitoring will be performed biannually (i.e., every 2 years) to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

The network of monitoring wells has been installed to monitor on-site groundwater conditions at the site. The network of on-site wells has been designed based on the following criteria:

- The ability to provide data measuring the reduction of dissolved phase concentrations; and
- The ability to provide groundwater elevation data for development/analysis of groundwater flow direction.

Table 4.4.1 summarizes the wells' identification numbers, as well as the purpose, location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring, 5 on-site wells are sampled to evaluate the effectiveness of the remedial system. The remedial party will measure depth to the water table for each monitoring well in the network before sampling.

Table 4.4.1 – Monitoring Well Construction Details

Monitoring Well ID	Well Location	Coordinates (longitude/ latitude)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-05	On-Site	43.1427°N, 77.6124°W	2	512.22	512.47	504.47	494.47
DAYMW-05A	On-Site	43.1434°N, 77.6118°W	2	513.45	513.70	505.20	495.20
DAYMW-08	On-Site	43.1423°N, 77.6127°W	2	513.00	513.25	504.05	494.05
DAYMW-09A	On-Site	43.1420°N, 77.6129°W	2	514.62	514.87	504.87	494.87
DAYMW-10	On-Site	43.1435°N, 77.6121°W	2	513.89	514.14	504.14	494.17

Monitoring well construction logs are included in Appendix C of this document.

If biofouling or silt accumulation occurs in the on-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC project manager will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC project manager. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC project manager.

The sampling frequency may only be modified with the approval of the NYSDEC project manager. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC project manager.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.4.7 Monitoring and Sampling Protocol

4.4.7.1 Monitoring Well Sampling Protocol

Monitoring well sampling activities will be recorded in a field book. Other observations (e.g., groundwater monitoring well integrity) will be noted on log book.

Each groundwater monitoring event is anticipated to include collecting groundwater samples from the five groundwater monitoring wells for water quality measurements and analytical laboratory testing. Groundwater samples will be collected using the passive diffusion bag sampler method outlined in the Quality Assurance Project Plan (QAPP) included in Appendix F,

Using static water level measurements from the five wells, and the surveyed well elevations, groundwater elevations will be calculated for each groundwater monitoring event. With assistance of software, the well locations and corresponding groundwater elevations will be used to develop a groundwater potentiometric map for each groundwater monitoring event.

For each groundwater monitoring event, it is anticipated that the following QA/QC samples will be analyzed in accordance with the QAPP included in Appendix G:

- One matrix spike/matrix spike duplicate (MS/MSD) and one field blank (i.e., equipment rinsate) will be collected and tested for the same parameters as the accompanying field samples; and

- One trip blank will accompany each shipment of field samples, and the trip blank will an analyzed for target compound list (TCL) VOCs, including tentatively identified compounds (TICs).

The field samples and QA/QC samples will be analyzed by a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory, which will provide the results in Analytical Services Protocol (ASP) Category B deliverable reports. The detected concentrations of constituents (e.g., TCL VOCs) for each groundwater monitoring event will be compared on a summary table to TOGS 1.1.1 groundwater standards or guidance values. The test results will also be evaluated on a cumulative basis. A DUSR will be performed on at least two rounds of groundwater samples.

4.4.7.2 Monitoring Well Repairs, Replacement And Decommissioning

If biofouling or silt accumulation occurs in the on-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

4.4.7.3 Monitoring Quality Assurance/Quality Control

All sampling and analyses will be performed in accordance with the requirements of the QAPP that was prepared for the site (Appendix F). Main Components of the QAPP include:

- Project/Task Organization;
- Sampling Procedures;
- Decontamination Procedures;
- Analytical QA/QC Objectives for Data Measurement;
- Sampling Program:
    - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
    - Sample holding times will be in accordance with the NYSDEC ASP requirements.
    - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Handling and Custody;
- Operation and Calibration Procedures:
    - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
    - The laboratory will follow all calibration procedures and schedules as specified in United States Environmental Protection Agency (USEPA) SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;

- Record Keeping and Data Management;
- Preparation of DUSRs, which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method;
- Internal QC and Checks; and
- QA Performance and System Audits.

4.4.7.4 Monitoring Reporting Requirements

Forms and any other information generated during regular monitoring events and inspections will be maintained by the Volunteer. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

Monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. The report will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc.);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (o be submitted electronically in the NYSDEC-identified format);

- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in digital format.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

This Operation and Maintenance Plan provides a brief description of the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site. This plan will be kept on-site at the Erie Harbor office. This Operation and Maintenance Plan:

- Includes the procedures necessary to allow individuals unfamiliar with the site to operate and maintain the SSDS installed on Building #3 and Building #4 (refer to Figure 15 and Figure 16); and
- Will be updated periodically to reflect changes in site conditions or the manner in which the soil vapor intrusion mitigation systems are operated and maintained.

Further detail regarding the Operation and Maintenance of the SSDS is provided in Section 5.2 – Operation and Maintenance of Sub-Slab Depressurization System. A copy of this Operation and Maintenance Manual, along with the complete SMP, is to be maintained at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of this SMP.

5.2 Operation and Maintenance of Sub-Slab Depressurization System

As shown on Figure 15 and Figure 16, active SSDS have been installed on Building #3 and Building #4, which are situated on the central portion of the Site designated as "Area EC" on Figure 13 this portion of the Site.

For any new buildings to be constructed in the "Area EC" on Figure 13, evaluation of the need for a soil vapor intrusion mitigation system is required. If determined to be warranted for any new building, a soil vapor intrusion mitigation system must be designed and installed, and this Operation and Maintenance Plan will be updated and submitted to NYSDEC for approval. Where applicable, this will include information such as: drawings; system design information; system start-up and testing; and system operation (routine operation procedures, routine equipment maintenance, and non-routine equipment maintenance).

The following sections provide a description of the operations and maintenance of the SSDS that have been installed on Building #3 and Building #4. As-built drawings for the SSDS are provided in Figure 15 and Figure 16.

5.3.1 System Start-Up and Testing

The only mechanical portion of the system is the set of fans. Start-up of any of these fans from a shutdown condition requires only that power be restored to the fan. It is expected that the fans will be continuously maintained in an operational condition, and since these fans do not require any type of manual restart, the fans will restart automatically once power is restored to the building or circuit. In the event that a fan is de-energized for work on the fan or associated ductwork, re-energizing of the fan will similarly re-enable that portion of the soil vapor mitigation system.

5.3.2 Routine System Operation and Maintenance

As shown on Figure 15 and Figure 16, the SSDS on Building #3 and Building #4 are equipped with an alarm, monitoring points and a fan speed switch. During each site-wide inspection, the following performance monitoring should be conducted on the SSDS in Building #3 and the SSDS in Building #4:

1. Check that LED light on alarm module is lit green, If not green, the cause must be identified and resolved (e.g., repair or replace alarm module, etc.).

2. Test the alarm module on the SSDS by removing the SSDS vacuum tubing. If the alarm module activates when the tubing is disconnected, then the alarm is operating correctly. If the alarm module does not activate when the tubing is disconnected,

the cause must be identified and resolved (e.g., repair or replace alarm module, etc.).

3. Monitor the vacuum of the disconnected tubing at the alarm module using a portable micro-manometer. If the differential pressure between inside the alarm module tubing and ambient air is -0.004 inches of water column (in. w.c.) or less (i.e., a minimum vacuum of 0.004 in. w.c.), adequate vacuum is being produced. If the differential pressure between inside the alarm module tubing and ambient air is greater than -0.004 in. w.c., the cause must be identified and resolved (e.g., increase fan speed using fan speed switch, repair or replace fan speed switch or fan, etc.).

4. Monitor the vacuum at SSDS monitoring points using a micro-manometer. If the differential pressure between inside the SSDS monitoring point and ambient air is -0.004 in. w.c. or less, adequate vacuum is being produced. If the differential pressure between inside the SSDS monitoring point and ambient air is greater than -0.004 in. w.c., the cause must be identified and resolved (e.g., increase fan speed using fan speed switch, repair or replace fan speed switch or fan, etc.)

Checklists or forms (see Site Wide Inspection form in Appendix G) will be completed during each routine maintenance event. Checklists/forms will include, but not be limited to the following information:

- Date;
- Name, company, and position of person(s) conducting maintenance activities;
- Maintenance activities conducted;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

5.3.3 Non-Routine Operation and Maintenance

During each non-routine emergency maintenance event, a form will be completed which will include, but not be limited to, the following information:

- Date;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Presence of leaks;
- Date of leak repair;
- Other repairs or adjustments made to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and,
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

5.3.4 System Monitoring Devices and Alarms

The SSDS has a warning device to indicate that the system is not operating properly. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSDS will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

This section provides a current vulnerability assessment that evaluates the vulnerability of the site and/or engineering controls to severe storms/weather events and associated flooding. This section also identifies vulnerability assessment updates that will be conducted for the site in Periodic Review Reports.

- Flood Plain: Based on review of a Flood Insurance Rate Map for a portion of the City of Rochester, NY (Map 36055C0191G) acquired from the online FEMA Flood map services Center, the Site is identified with Zone X designation. This is defined as “Areas determined to be outside the 0.2% annual chance floodplain”. As such, the Site is considered outside the 100- year floodplain.

- Site Drainage and Storm Water Management: The existing Site development has adequate storm water management system.

- Erosion: A large portion of the Site is covered by buildings and asphalt-paved parking lots. The grade of the Site is such that erosion will not occur during periods of severe rain events.

- High Wind: A large portion of the Site is covered by existing buildings, asphalt paved parking lots and grassy areas. Remedial system components are not susceptible to damage from the wind itself or falling objects, such as trees or utility structures during periods of high wind.

- Electricity: The SSDS associated with mitigation of soil vapor intrusion is a component of the remediation that could be susceptible to power loss and/or dips/surges in voltage during severe weather events, including lighting strikes. It is anticipated that such disruptions would be temporary and would have minimal effect on human health since business operations at the Site would also be shut down during such events due to the lack of electricity.

- Spill/Contaminant Release: No areas of the Site and/or remedial system are anticipated to be susceptible to a spill or other contaminant release due to storm-related damage caused by flooding, erosion, high winds, loss of power, etc.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section provides an environmental footprint analysis of the remedy, as implemented at the time of this SMP. This section of the SMP also provides a summary of green remediation evaluations to be completed for the site during site management and reported in Periodic Review Reports (PRRs).

- Waste Generation: Waste generation is minimal due to the PDB sampling technique being used, and it does not appear that additional waste reduction efforts are necessary at this time.

- Energy usage: The SSDS is powered by electricity provided by an energy services company. The system has been engineered and calibrated to generally run on as little electrical energy as possible to maintain negative pressure beneath the portions of the building slab where mitigation of potential soil vapor intrusion is required. Other sources of electrical energy (hydro, solar, wind) may be cost prohibitive, may not be efficient, may not be available, or may not be reliable to solely maintain SSDS operation.

- Emissions: Potential emissions at the Site include operation of the SSDS, from automobiles used for transportation to and from the Site for inspections and/or sampling, and from equipment used at the Site for possible remedial investigations and actions. These emissions are considered typical in relation to the possible investigations and remedies.

- Water usage: Potable water use at the Site as part of the remediation is considered minimal (e.g., decontamination water), and will be procured from the City of Rochester public water system.

- Land and/or ecosystems: No disturbances or restoration of land or ecosystem is anticipated in relation to the remedy for the Site.

6.2.1 Timing of Green Remediation Evaluations

For major remedial system components, green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the NYSDEC project manager feels appropriate, (e.g. during significant maintenance events or in conjunction with storm recovery activities).

Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities after approval from the DER project manager. Reporting of these modifications will be presented in the PRR.

6.2.2 Remedial Systems

Remedial systems will be operated properly considering the current site conditions to conserve materials and resources to the greatest extent possible. Consideration will be given to operating rates and use of reagents and consumables. Spent materials will be sent for recycling, as appropriate. The SSDS will be evaluated as part of the green remediation evaluation.

6.2.3 Building Operations

Structures including buildings and sheds will be operated and maintained to provide for the most efficient operation of the remedy, while minimizing energy, waste generation and water consumption.

6.2.4 Frequency of System Checks, Sampling and Other Periodic Activities

Transportation to and from the Site, use of consumables in relation to visiting the Site in order to conduct system checks and/or collect samples, and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources.

Consideration shall be given to:

- Reduced sampling frequencies;
- Reduced site visits and system checks;
- Installation of remote sensing/operations and telemetry;

- Coordination/consolidation of activities to maximize foreman/labor time; and
- Use of mass transit for site visits, where available, and carpooling.

6.2.5 Metrics and Reporting

If in the future the Site is redeveloped with significantly different active remedial components and/or engineering controls, information on energy usage, solid waste generation, transportation and shipping, water usage and land use and ecosystems will be re-evaluated and a set of metrics may be developed. A green remediation metrics form is provided in Appendix G if deemed appropriate for use at that time. If warranted, the SMP will be modified accordingly to facilitate and document consistent implementation of green remediation during site management and to identify corresponding benefits.

6.3 Remedial System Optimization

A RSO study will be conducted any time that the NYSDEC project manager or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the Decision Document;
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;

- There is an anticipated transfer of the site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

7.0. REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix G. These forms are subject to NYSDEC revision. All site management inspection, maintenance, and monitoring events will be conducted by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (P.E.) who is licensed and registered in New York State, or a qualified person who directly reports to a P.E. who is licensed and registered in New York State.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 7.1 and summarized in the Periodic Review Report.

Table 7.1: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Periodic Review Report	Annually

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC project manager.

All interim monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;

- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting maintenance activities;
- Description of maintenance activities performed;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and

- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link http://www.dec.ny.gov/chemical/62440.html.

7.2 Periodic Review Report

A PRR will be submitted to the NYSDEC project manager beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the NYSDEC project manager or at another frequency as may be required by the NYSDEC project manager. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix A -

Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.
- Description of any change of use, import of materials, or excavation that occurred during the certifying period.
- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- Identification of any wastes generated during the reporting period, along with waste characterization data, manifests, and disposal documentation.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These tables and figures will include a presentation of past data as part of an evaluation of contaminant concentration trends.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC

EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the site-specific RAWP;
  - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
  - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;
  - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan;
  - The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional as defined in 6 NYCRR Part 375 or Professional Engineer licensed to practice and registered in New York State will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for the site, I certify that all of the following statements are true:*

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*

- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program [and generally accepted engineering practices]; and*
- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner/Remedial Party or Owner’s/Remedial Party’s Designated Site Representative] for the site.”

- *No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and*

Every five years the following certification will be added:

- *The assumptions made in the qualitative exposure assessment remain valid.*

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC project manager and the NYSDOH project manager. The Periodic Review Report may also need to be submitted in hard-copy format if requested by the NYSDEC project manager.

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control or failure to conduct site management activities, a Corrective Measures Work Plan will be submitted to the NYSDEC project manager for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC project manager.

8.0 REFERENCES

6 NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation".

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

TABLES

Table 1

205-405 MT. HOPE AVENUE, ROCHESTER, NEW YORK
NYSDEC SITE #C828125

RI ANALYTICAL LABORATORY SAMPLES

SAMPLE	DATE	LOCATION	DEPTH	MEDIA TYPE	LABORATORY ANALYSES
001	06/23/06	TP-3	2.7’	Subsurface soil	TCL VOC
002	07/25/06	DAYSS-01	0-2”	Surface soil	Full TCL/TAL + CN*
003	07/25/06	DAYSS-02	0-2”	Surface soil	Full TCL/TAL + CN
004	07/25/06	DAYSS-03	0-2”	Surface soil	Full TCL/TAL + CN
005	07/25/06	DAYSS-04	0-2”	Surface soil	Full TCL/TAL + CN
006	07/25/06	DAYSS-05	0-2”	Surface soil	Full TCL/TAL + CN
007	07/25/06	DAYSS-06	0-2”	Surface soil	Full TCL/TAL + CN
008	07/25/06	DAYSS-07	0-2”	Surface soil	Full TCL/TAL + CN
009	07/25/06	DAYSS-08	0-2”	Surface soil	Full TCL/TAL + CN
010	08/07/06	Tank Pit	6.3’	Subsurface soil	TCL VOC, TCL SVOC, Lead
011	08/14/06	DAYSB-13	0-4’	Subsurface fill	Full TCL/TAL + CN
012	08/14/06	DAYSB-07	15-17’	Subsurface soil	Full TCL/TAL + CN
013	08/14/06	DAYSB-06	8-12’	Subsurface fill	Full TCL/TAL + CN
014	08/15/06	DAYSB-03	12-15’	Subsurface soil	Full TCL/TAL + CN
015	08/14/06	DAYSB-02	4-8’	Subsurface soil	Full TCL/TAL + CN
016	08/15/06	DAYSB-04	4-8’	Subsurface fill	Full TCL/TAL + CN
017	08/15/06	DAYSB-04	12-15’	Subsurface soil	Full TCL/TAL + CN
018	08/15/06	DAYSB-05	4-8’	Subsurface fill	Full TCL/TAL + CN
019	08/15/06	DAYMW-03	4-8’	Subsurface fill	Full TCL/TAL + CN
020	08/15/06	DAYMW-03	8-12’	Subsurface soil	TCL VOC, TCL SVOC
021	08/15/06	DAYSB-01	12-15’	Subsurface fill	Full TCL/TAL + CN
022	08/15/06	DAYSB-18	4-8’	Subsurface soil	Full TCL/TAL + CN
023	08/15/06	Rinsate	NA	Water	Full TCL/TAL + CN
024	08/16/06	DAYSB-12	4-8’	Subsurface fill	Full TCL/TAL + CN
025	08/16/06	DAYSB-21	4-8’	Subsurface fill	Full TCL/TAL + CN
026	08/16/06	DAYSB-20	12-15’	Subsurface soil	Full TCL/TAL + CN
027	08/16/06	DAYSB-14	8-12’	Subsurface soil	Full TCL/TAL + CN
028	08/16/06	DAYSB-14	12-15’	Subsurface soil	Full TCL/TAL + CN
029	08/16/06	DAYSB-15A	8-12’	Subsurface soil	Full TCL/TAL + CN
030	08/16/06	DAYSB-14	0-4’	Subsurface fill	Full TCL/TAL + CN
031	08/17/06	DAYSB-25	12-15.7’	Subsurface fill	Full TCL/TAL + CN*
032	09/05/06	MW-URS1	NA	Groundwater	Full TCL/TAL + CN
033	09/06/06	MW-URS2	NA	Groundwater	Full TCL/TAL + CN*
034	09/06/06	TB090606	NA	Trip Blank	TCL VOC
035	09/07/06	DAYMW-02	NA	Groundwater	Full TCL/TAL + CN
036	09/07/06	RIN-090706	NA	Rinsate	Full TCL/TAL + CN
037	09/08/06	MW-8	NA	Groundwater	Full TCL/TAL + CN
038	09/08/06	TB-090806	NA	Trip Blank	TCL VOC
039	09/08/06	DAYMW-03	NA	Groundwater	Full TCL/TAL + CN
040	09/08/06	MW-5	NA	Groundwater	Full TCL/TAL + CN
041	09/08/06	TB090806-01	NA	Trip Blank	TCL VOC
042	09/09/06	MW-6	NA	Groundwater	Full TCL/TAL + CN
043	09/11/06	DAYMW-04	NA	Groundwater	Full TCL/TAL + CN
044	09/11/06	DAYMW-05	NA	Groundwater	Full TCL/TAL + CN
045	09/11/06	TB091106	NA	Trip Blank	TCL VOC
046	01/30/07	SLB-01	NA	Air	TO-15 VOC
047	01/30/07	IA-01	NA	Air	T)-15 VOC
048	01/30/07	SLB-02	NA	Air	TO-15 VOC

Full TCL/TAL + CN = Full Target Compound List/Target Analyte List parameters and Cyanide via ASP Methods OLM04.2 and ILM04.1
TAL Metals = Target analyte list metals and cyanide
Full TCL/TAL = Full target compound list / target analyte list parameters
NA = Not applicable
* = MS/MSD performed
TCL VOC = Target compound list volatile organic compounds via ASP Method OLM04.2
TCL SVOC = Target compound list semi-volatile organic compounds via ASP Method OLM04.2
Lead = Lead via ASP Method ILM04.1
TO-15 = VOCs using USEPA Method TO-15

Table 1 (Continued)

205-405 MT. HOPE AVENUE, ROCHESTER, NEW YORK
NYSDEC SITE #C828125

RI ANALYTICAL LABORATORY SAMPLES

SAMPLE	DATE	LOCATION	DEPTH	MEDIA TYPE	LABORATORY ANALYSES
049	01/30/07	IA-02	NA	Air	TO-15 VOC
050	01/30/07	SLB-03	NA	Air	TO-15 VOC
051	01/30/07	IA-03	NA	Air	TO-15 VOC
052	01/30/07	SLB-04	NA	Air	TO-15 VOC
053	01/30/07	IA-04	NA	Air	TO-15 VOC
054	01/30/07	SLB-05	NA	Air	TO-15 VOC
055	01/30/07	IA-05	NA	Air	TO-15 VOC
056	01/30/07	SLB-06	NA	Air	TO-15 VOC
057	01/30/07	IA-06	NA	Air	TO-15 VOC
058	01/30/07	BG-01	NA	Air	TO-15 VOC
059	01/30/07	BG-02	NA	Air	TO-15 VOC
060	04/04/07	DAYMW-02	NA	Groundwater	TCL VOC, TCL SVOC
061	04/05/07	DAYMW-03	NA	Groundwater	TCL VOC, TCL SVOC
062	04/04/07	DAYMW-04	NA	Groundwater	TCL VOC, TCL SVOC
063	04/04/07	DAYMW-05	NA	Groundwater	TCL VOC, TCL SVOC, TAL Metals
064	04/03/07	MW-5	NA	Groundwater	TCL VOC, TCL SVOC
065	04/03/07	MW-6	NA	Groundwater	TCL VOC, TCL SVOC
066	04/04/07	MW-8	NA	Groundwater	TCL VOC, TCL SVOC
067	04/02&05/07	MW-URS1	NA	Groundwater	TCL VOC, TCL SVOC*
068	04/03/07	MW-URS2	NA	Groundwater	TCL VOC, TCL SVOC
069	04/05/07	DAYMW-01	NA	Groundwater	TCL VOC, TCL SVOC, TAL Metals, CN*
070	05/23/07	DAYSB-15C	10-11’	Subsurface soil	TCL VOC, TCL SVOC
071	04/04/07	TB(4-4-07)	NA	Trip Blank	TCL VOC
072	04/05/07	TB(4-5-07)	NA	Trip Blank	TCL VOC
073	04/05/07	RIN(4-5-07)	NA	Rinsate	Full TCL/TAL + CN
074	05/23/07	DAYSB-15C	7-8’	Subsurface soil	TCL VOC, TCL SVOC
075	05/23/07	DAYSB-26	7-8’	Subsurface soil	TCL VOC, TCL SVOC
076	05/23/07	DAYSB-26	8-10.5’	Subsurface soil	TCL VOC, TCL SVOC
077	05/23/07	DAYSB-27	4-7’	Subsurface fill	TCL VOC, TCL SVOC*
078	05/23/07	DAYSB-28	2-4’	Subsurface fill	TCL SVOC*
079	05/23/07	RIN(5-23-07)	NA	Rinsate	TCL VOC, TCL SVOC*
Tank 1	06/23/06	UST	NA	Tank Contents	BNA SVOC, TCL/STARS VOC, TAL Metals
080	09/11/08	Rinsate 9-11-08	NA	Rinsate	TCL VOC
081	09/11/08	TW-3	NA	Groundwater	TCL VOC
082	09/11/08	BG Outdoor Air	NA	Air	TO-15 VOC
083	09/11/08	SV-1	NA	Air	TO-15 VOC
084	09/11/08	SV-2	NA	Air	TO-15 VOC
085	09/11/08	SV-3	NA	Air	TO-15 VOC
086	09/11/08	SV-4	NA	Air	TO-15 VOC
087	09/11/08	SV-5	NA	Air	TO-15 VOC
088	09/11/08	SV-6	NA	Air	TO-15 VOC
089	09/12/08	TW-5	NA	Groundwater	TCL VOC
090	09/12/08	TW-6	NA	Groundwater	TCL VOC
091	09/12/08	TW-4	NA	Groundwater	TCL VOC
092	098/12/08	TW-2	NA	Groundwater	TCL VOC
093	09/12/08	TW-1	NA	Groundwater	TCL VOC
094	09/01/08	TB-9-11-08	NA	Trip Blank	TCL VOC
095	12/05/08	SV-7	NA	Air	TO-15 VOC

Full TCL/TAL + CN = Full Target Compound List/Target Analyte List parameters and Cyanide via ASP Methods OLM04.2 and ILM04.1
TAL Metals = Target analyte list metals and cyanide
Full TCL/TAL = Full target compound list / target analyte list parameters
NA = Not applicable
* = MS/MSD performed
TCL VOC = Target compound list volatile organic compounds via ASP Method OLM04.2
TCL SVOC = Target compound list semi-volatile organic compounds via ASP Method OLM04.2
Lead = Lead via ASP Method ILM04.1
TO-15 = VOCs using USEPA Method TO-15
BNA SVOC = Base, neutral, acid SVOCs via USEPA Method 8270
TCL STARS VOC = Target Compound List and Spill technology and Remediation Series list VOCs via USEPA Method 8260

Table 2 (Page 1 of 2)

205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Nature and Extent of Contamination
RI Samples

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[b]	SCG[c] (ppb)[b]	Frequency of Exceeding SCG[c]
Volatile Organic Compounds (VOCs)	Dichlorodifluoromethane	ND – 8	5	2 of 25
	Benzene	ND – 13	1	2 of 25
	Trichloroethene	ND – 18	5	4 of 25
	Ethylbenzene	ND – 190	5	2 of 25
	Isopropylbenzene	ND – 38	5	2 of 25
	Toluene	ND – 8	5	2 of 25
	Total Xylenes	ND – 530	5	2 of 25
Semi-Volatile Organic Compounds (SVOCs)	Phenol	ND – 2	1	1 of 19
	Naphthalene	ND – 250	10	2 of 19
	Benzo(a)anthracene	ND – 2	0.002	1 of 19
	Chrysene	ND – 6	0.002	1 of 19
	Bis(2-ethylhexyl)phthalate	ND – 25	5	2 of 19
	Benzo(b)fluoranthene	ND – 7	0.002	1 of 19
	Benzo(k)fluoranthene	ND – 3	0.002	1 of 19
	Indeno(1,2,3-cd)pyrene	ND – 2	0.002	1 of 19
Inorganics	Antimony	ND – 10.2	3	2 of 11
	Arsenic	ND – 43.6	25	1 of 11
	Barium	ND – 1550	1000	2 of 11
	Beryllium	ND – 5.7	3	1 of 11
	Cadmium	ND – 6.9	5	1 of 11
	Chromium	ND – 206	50	1 of 11
	Copper	ND – 286	200	1 of 11
	Iron	ND – 179000	300	9 of 11
	Lead	ND – 251	25	1 of 11
	Magnesium	ND – 154000	35000	6 of 11
	Manganese	ND – 6110	300	6 of 11
	Nickel	ND – 239	100	1 of 11
	Selenium	ND – 27	10	3 of 11
	Sodium	ND – 665000	20000	8 of 11
	Thallium	ND – 26.8	0.5	6 of 11

205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Nature and Extent of Contamination
RI Samples

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	City of Rochester Maximum Background Concentrations (ppm)[d]	SCG[c] (ppm)[a]	Frequency of Exceeding SCG[c]
SVOCs	Benzo(a)anthracene	0.13 – 27	2.9	1	6 of 8
	Chrysene	0.17 – 34	3.6	3.9	3 of 8
	Benzo(b)fluoranthene	0.21 – 41	4.4	1	7 of 8
	Benzo(k)fluoranthene	0.088 – 19	3.7	3.9	2 of 8
	Benzo(a)pyrene	0.11 – 27	3.9	1	6 of 8
	Indeno(1,2,3-cd)pyrene	0.059 – 12	NL	0.5	3 of 8
	Dibenzo(a,h)anthracene	0.063 – 3.4	9	0.33	3 of 8
Inorganics	Mercury	ND – 3.1	NL	0.81	1 of 8

SUBSURFACE SOIL & FILL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	City of Rochester Maximum Background Concentrations (ppm)[d]	SCG[c] (ppm)[a]	Frequency of Exceeding SCG[c]
SVOCs	Benzo(a)anthracene	ND – 14	2.9	1	1 of 27
	Chrysene	ND – 13	3.6	3.9	1 of 27
	Benzo(b)fluoranthene	ND – 13	4.4	1	1 of 27
	Benzo(k)fluoranthene	ND – 5.5	3.7	3.9	1 of 27
	Benzo(a)pyrene	ND – 12	3.9	1	1 of 27
	Indeno(1,2,3-cd)pyrene	ND – 5.4	NL	0.5	1 of 27
	Dibenzo(a,h)anthracene	ND – 1.9	9	0.33	1 of 27

[a] ppm = parts per million, which is equivalent to milligrams per kilogram (mg/Kg) in soil

[b] ppb = parts per billion, which is equivalent to micrograms per liter (ug/L) in water

[c] SCG = standards, criteria and guidance: NYSDEC Part 375 Track 2 (Restricted Residential Use) SCOs for soil; NYSDEC TOGS 1.1.1 standards and guidance values for groundwater

[d] = Maximum background range detected in background surface soil samples in a document titled “Supplemental Groundwater and Background Surface Soil Sampling Report, Former APCO Property, 79 Woodstock Road, Rochester, New York” dated February 6, 1998 and prepared by Sear-Brown Group

ND = Not detected above reported analytical laboratory detection limit

NL = Not Listed

Table 3
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Semi-Volatile Organic Compounds (SVOCs)
in mg/Kg or Parts Per Million (ppm)

RI Surface Soil Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	002 DAYSS-01 (0-2")	003 DAYSS-02 (0-2")	004 DAYSS-03 (0-2")	005 DAYSS-04 (0-2")	006 DAYSS-05 (0-2")	007 DAYSS-06 (0-2")	008 DAYSS-07 (0-2")	009 DAYSS-08 (0-2")
Acetophenone	NA	NA	U	0.36 J	U	1.4 J	0.044 J	U	U	U
2-Methylnaphthalene	NA	NA	U	U R	U	U J	0.05 J	U	U	U
Acenaphthylene	100	100	U	0.047 J	U	U J	0.05 J	U	U	0.055 J
Acenaphthene	20	100	U	0.065 J	0.1 J	1.2 J	0.69	0.51 J	0.084 J	0.039 J
Dibenzofuran	7	59	U	U R	0.058 J	U J	0.4 J	U	0.055 J	U
Fluorene	30	100	U	0.081 J	0.11 J	1.3 J	0.8	0.55 J	0.093 J	0.052 J
Phenanthrene	100	100	0.11 J	1.7	2.1 J	24 J	10 D	13 J	1.6 J	0.85 J
Anthracene	100	100	U	0.27 J	0.22 J	3.8 J	1.3	1.3 J	0.17 J	0.18 J
Carbazole	NA	NA	U	0.17 J	0.15 J	3.3 J	0.97	1.7 J	0.11 J	0.13 J
Di-n-butylphthalate	NA	NA	U	0.2 J	U	U J	0.046 J	U	0.06 J	U
Fluoranthene	100	100	0.24 J	2.1 DJ	2.5 D	55 J	15 D	28 J	2.5 J	2 J
Pyrene	100	100	0.3 J	2.5 DJ	3.3 J	48 J	13 D	23 J	2.4 J	2.3 J
Butylbenzylphthalate	NA	NA	0.048 J	0.36 J	U	U J	U R	U	0.079 J	0.22 J
Benzo(a)anthracene	1	1	0.13 J	**2.2**	**1.1** J	**27** J	**5.2** D	**8.9** J	0.84 J	**1.1** J
Chrysene	1	3.9	0.17 J	2	1.5 J	**34** J	**7.5** D	**10** J	0.93 J	1.4 J
Bis(2-Ethylhexyl)phthalate	NA	NA	0.25 J	12 D	0.9 J	11 J	1.2	5.4 J	2.9 J	0.7 J
Di-n-Octylphthalate	NA	NA	U	0.46	U	U J	0.1 J	U	U	U
Benzo(b)fluoranthene	1	1	0.21 J	**2.2** DJ	**2.2** J	**41** J	**7.7** D	**19** J	**1.4** J	**2.3** J
Benzo(k)fluoranthene	0.8	3.9	0.088 J	1.3	0.65 J	**19** J	3.2 DJ	**6.9** J	0.5 J	0.88 J
Benzo(a)pyrene	1	1	0.11 J	**1.9**	**1.3** J	**27** J	**5.1** D	**10** J	0.81 J	**1.3** J
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.059 J	0.43	0.34 J	**12** J	**1.1**	**2.9** J	0.21 J	0.34 J
Dibenzo(a,h)anthracene	0.33	0.33	U	0.14 J	0.11 J	**3.4** J	**0.37** J	**1.1** J	0.063 J	0.096 J
Benzo(g,h,i)perylene	100	100	U	0.28 J	0.22 J	11 J	0.75	1.9 J	0.16 J	0.25 J
TOTAL SVOCS	NA	NA	1.715 J	30.763 DJ	16.858 DJ	323.4 J	74.526 DJ	134.16 J	14.964 J	14.192 J
TOTAL TICS	NA	NA	12.776 J	101.84 NJ	14.013 NJ	137.9 NJ	24.329 NJ	38.33 NJ	26.624 NJ	16.82 NJ
TOTAL SVOCS AND TICS	NA	NA	14.491 J	132.603 DNJ	30.871 DNJ	461.3 DNJ	98.855 DNJ	172.49 NJ	41.588 NJ	31.012 NJ

N = Indicates presumptive evidence of tentatively identified compound
D = Concentration obtained from a diluted analysis
R = rejected due to sample matrix effect

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

U = Not detected at concentration above reported analytical laboratory detection limit
J = Estimated value

1.9 = Exceeds Restricted Residential SCO
TIC = Tentatively identified compound
NA = Not available

Table 4
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Target Analyte List Metals and Cyanide
in mg/Kg or Parts Per Million (ppm)

RI Surface Soil Samples

Detected Analyte	Unrestricted SCO (1)	Restricted Residential SCO (2)	002 DAYSS-01 (0-2")	003 DAYSS-02 (0-2")	004 DAYSS-03 (0-2")	005 DAYSS-04 (0-2")	006 DAYSS-05 (0-2")	007 DAYSS-06 (0-2")	008 DAYSS-07 (0-2")	009 DAYSS-08 (0-2")
Aluminum	NA	NA	10100	7280	9430	10300	7970	8830	8410	7290
Antimony	NA	NA	U JN	U JN	U JN	U JN	U JN	U JN	U JN	0.68 BNJ
Arsenic	13	16	5.4	4.6	6.2	3.9	6.9	4.9	5.1	5.5
Barium	350	400	87	61.1	55	149	64.1	72.7	61.6	68
Beryllium	7.2	72	0.75 B	0.56 B	0.67 B	1.1	0.63 B	0.64 B	0.62 B	0.53 B
Cadmium	2.5	4.3	0.17 B	0.26 B	0.19 B	1.1	0.53 B	0.25 B	0.27 B	0.51 B
Calcium	NA	NA	11300	12600	4190	32200	7690	11100	7250	15000
Chromium	30	180	13.4 E	13.2 E	11.8 E	44.7 E	13.3 E	18.4 E	11.6 E	13.3 E
Cobalt	NA	NA	5.1 B	4.9 B	5.1 B	5.5 B	4.6 B	4.7 B	4.6 B	4.3 B
Copper	50	270	21.8	31.9	21.9	83.7	38	34.8	30	38.2
Iron	NA	NA	18100	13700	14000	22100	14100	13400	13300	14400
Lead	63	400	42.4	92.1	45.1	159	64	49.2	82.7	323
Magnesium	NA	NA	5830	5840	3220	15700	3550	5600	3890	8860
Manganese	1600	2000	535	404	397	343	487	411	385	407
Mercury	0.18	0.81	0.082 J	0.29 J	0.055 UJ	**3.1** J	0.2 J	0.046 UJ	0.19 J	0.16 J
Nickel	30	310	11.9 E	12.9 E	11.5 E	22.7 E	12.8 E	12.4 E	11.4 E	12.3 E
Potassium	NA	NA	1220	1020	1020	1540	747 B	1040	1160	981
Selenium	3.9	180	R	R	R	R	R	R	R	R
Silver	2	180	U	0.2 B	U	0.74 B	0.16 B	U	U	U
Sodium	NA	NA	107 B	178 B	99.5 B	602 B	96.8 B	155 B	99 B	828
Thallium	NA	NA	1.2 B	0.97 B	1.1 B	1.2 B	0.88 B	0.74 B	0.61 B	0.63 B
Vanadium	NA	NA	23.8	15.2	19.9	21.6	17.8	16.5	17.1	16.8
Zinc	109	10000	81.7	199	89.9	455	136	168	122	133
Cyanide	27	27	U	U	U	0.34 B	U	U	U	0.41 B

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

3.1 = Exceeds Restricted Residential SCO

U = Not detected at concentration above reported analytical laboratory detection limit

E = Reported value estimated due to interference

B= Reported value less than contract required detection limit, but greater than instrument detection limit

N = Spiked sample recovery not within control limits

J = Estimated value

Table 5 (Page 1 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Volatile Organic Compounds (VOCs)
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	001 TP-3 (2.7')	010 Tank Pit (6.3')	011 DAYSB-13 (0-4')	012 DAYSB-07 (15-17')	013 DAYSB-06 (8-12')	014 DAYSB-03 (12-15')	015 DAYSB-02 (4-8')
Acetone	0.05	100	U	0.024 J	0.03	U	0.014	U	0.01 J
Carbon Disulfide	NA	NA	U	U	U	U	U	0.001 J	U
Methylene Chloride	0.05	100	U	0.004 JB	U	U	U	U	U
Chloroform	0.37	49	0.003 J	0.003 JB	U	U	U	U	U
Cyclohexane	NA	NA	U	U	U	U	U	U	U
Trichloroethene	0.47	21	U	U	U	U	U	U	U
Methylcyclohexane	NA	NA	U	U	U	0.001 J	U	1.3 D	U
Toluene	0.7	100	0.003 JB	U	0.004 J	0.003 J	0.003 J	0.002 J	0.001 J
Ethylbenzene	1	41	U	U	U	U	U	0.16 D	U
Xylene (Total)	0.26	100	U	U	U	0.002 J	U	0.36 D	U
Isopropylbenzene	NA	NA	U	0.007 J	U	U	U	0.22 D	U
1,2-Dichlorobenzene	1.1	100	U	U	U	U	U	U	U
TOTAL VOCS*	NA	NA	0.003 J	0.031 J	0.034 J	0.006 J	0.017 J	2.043 J	0.011 J
TOTAL TICS*	NA	NA	U	22.87 NJ	U	U	U	42.21 J	U
TOTAL VOCS AND TICS*	NA	NA	0.003 J	22.901 NJ	0.034 J	0.006 J	0.017 J	44.253 J	0.011 J

NA = Not available   TIC = Tentatively identified compound   B = Detected in associated method blank   J = Estimated value

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

D = Compound identified in an analysis at a secondary dilution factor   U = Not detected at concentration above reported analytical laboratory detection limit

N = Indicates presumptive evidence of tentatively identified compound   * = Does not include compounds that were also detected in the associated method blank

Table 5 (Page 2 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Volatile Organic Compounds (VOCs)
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	016 DAYSB-04 (4-8')		017 DAYSB-04 (12-15')		018 DAYSB-05 (4-8')		019 DAYMW-03 (4-8')		020 DAYMW-03 (8-12')		021 DAYSB-01 (12-15')		022 DAYSB-18 (4-8')	
Acetone	0.05	100	U		0.018		0.023	J	0.079		0.065	J	0.021	J	0.046	
Carbon Disulfide	NA	NA	U		U		U	J	U		U	J	U	J	U	
Methylene Chloride	0.05	100	U		U		U	J	U		U	J	U	J	U	
Chloroform	0.37	49	U		U		U	J	U		U	J	U	J	U	
Cyclohexane	NA	NA	U		U		U	J	U		U	J	U	J	U	
Trichloroethene	0.47	21	U		U		U	J	U		U	J	U	J	U	
Methylcyclohexane	NA	NA	U		U		U	J	U		U	J	U	J	U	
Toluene	0.7	100	0.002	J	0.002	J	U	J	U		U	J	U	J	U	
Ethylbenzene	1	41	U		U		U	J	U		U	J	U	J	U	
Xylene (Total)	0.26	100	U		U		U	J	U		U	J	U	J	U	
Isopropylbenzene	NA	NA	U		U		U	J	U		U	J	U	J	U	
1,2-Dichlorobenzene	1.1	100	U		U		U	J	U		U	J	U	J	U	
TOTAL VOCS*	NA	NA	0.002	J	0.02	J	0.023		0.079		0.065	J	0.021	J	0.046	
TOTAL TICS*	NA	NA	U		U		U		U		U		U		U	
TOTAL VOCS AND TICS*	NA	NA	0.002	J	0.02	J	0.023		0.079		0.065	J	0.021	J	0.046	

NA = Not available TIC = Tentatively identified compound B = Detected in associated method blank J = Estimated value

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

D = Compound identified in an analysis at a secondary dilution factor

U = Not detected at concentration above reported analytical laboratory detection limit

N = Indicates presumptive evidence of tentatively identified compound

* = Does not include compounds that were also detected in the associated method blank

Table 5 (Page 3 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Volatile Organic Compounds (VOCs)
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	024 DAYSB-12 (4-8')		025 DAYSB-21 (4-8')		026 DAYSB-20 (12-15')		027 DAYSB-14 (8-12')		028 DAYSB-14 (12-15')		029 DAYSB-15A (8-12')		030 DAYSB-14 (0-4')	
Acetone	0.05	100	U		0.03		U		0.006	J	0.011	J	U		0.038	
Carbon Disulfide	NA	NA	U	J	U	J	U	J	U	J	0.001	J	U	J	U	J
Methylene Chloride	0.05	100	0.004	JB	0.005	JB	0.004	JB	0.003	JB	0.003	JB	0.003	JB	0.004	JB
Chloroform	0.37	49	0.002	JB	0.002	JB	0.001	JB	0.001	JB	0.001	JB	0.001	JB	0.001	JB
Cyclohexane	NA	NA	U		U		0.001	J	U		U		U		U	
Trichloroethene	0.47	21	U		U		U		U		U		U		U	
Methylcyclohexane	NA	NA	U		U		0.001	J	U		U		0.007	J	U	
Toluene	0.7	100	U		U		0.001	J	0.003	J	U		U		U	
Ethylbenzene	1	41	U		U		U		U		U		0.001	J	U	
Xylene (Total)	0.26	100	U		U		0.001	J	0.005	J	U		0.01	J	U	
Isopropylbenzene	NA	NA	U		U		U		U		U		0.037		U	
1,2-Dichlorobenzene	1.1	100	U		U		U		U		U		U		U	
TOTAL VOCS*	NA	NA	U		0.03		0.004	J	0.014	J	0.012	J	0.055	J	0.038	
TOTAL TICS*	NA	NA	U		U		1.622	NJ	2.472	NJ	0.427	NJ	6.57	NJ	0.007	J
TOTAL VOCS AND TICS*	NA	NA	U		0.03		1.626	NJ	2.486	NJ	0.439	NJ	6.625	NJ	0.045	J

NA = Not available TIC = Tentatively identified compound B = Detected in associated method blank J = Estimated value

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

D = Compound identified in an analysis at a secondary dilution factor

U = Not detected at concentration above reported analytical laboratory detection limit

N = Indicates presumptive evidence of tentatively identified compound

* = Does not include compounds that were also detected in the associated method blank

Table 5 (Page 4 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Volatile Organic Compounds (VOCs)
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	031 DAYSB-25 (12-15.7')	070 DAYSB-15C (10-11')	074 DAYSB-15C (7-8')	075 DAYSB-26 (7-8')	076 DAYSB-26 (8-10.5')	077 DAYSB-27 (4-7')	078 DAYSB-28 (2-4')
Acetone	0.05	100	0.005 J	U	U	U	U	U	U
Carbon Disulfide	NA	NA	U J	U	U	U	U	U	U
Methylene Chloride	0.05	100	0.003 JB	0.003 J	U	0.004 J	U	U	U
Chloroform	0.37	49	0.001 JB	U	U	U	U	U	U
Cyclohexane	NA	NA	U	U	U	U	U	U	U
Trichloroethene	0.47	21	U	U	0.008 JB	U	U	U	U
Methylcyclohexane	NA	NA	U	0.003 J	U	U	U	U	U
Toluene	0.7	100	U	U	U	U	U	U	U
Ethylbenzene	1	41	U	U	U	U	U	U	U
Xylene (Total)	0.26	100	U	U	U	U	U	U	U
Isopropylbenzene	NA	NA	U	U	U	U	U	U	U
1,2-Dichlorobenzene	1.1	100	0.003 J	U	U	U	U	U	U
TOTAL VOCS*	NA	NA	0.008 J	0.006 J	U	0.004 J	U	U	U
TOTAL TICS*	NA	NA	U	0.745 NJ	U	0.743 NJ	U	0.891 NJ	0.039 J
TOTAL VOCS AND TICS*	NA	NA	0.008 J	0.751 NJ	U	0.747 NJ	U	0.891 NJ	0.039 J

NA = Not available   TIC = Tentatively identified compound   B = Detected in associated method blank   J = Estimated value

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

D = Compound identified in an analysis at a secondary dilution factor   U = Not detected at concentration above reported analytical laboratory detection limit

N = Indicates presumptive evidence of tentatively identified compound   * = Does not include compounds that were also detected in the associated method blank

Table 6 (Page 1 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Semi-Volatile Organic Compounds (SVOCs)
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	010 Tank Pit (6.3')		011 DAYSB-13 (0-4')		012 DAYSB-07 (15-17')		013 DAYSB-06 (8-12')		014 DAYSB-03 (12-15')		015 DAYSB-02 (4-8')		016 DAYSB-04 (4-8')	
Acetophenone	NA	NA	U		U		U		0.063	J	U		U		U	
Naphthalene	12	100	U		U		U		U		0.087	J	U		0.041	J
Caprolactam	NA	NA	U		U		U		U		U		U		U	
2-Methylnaphthalene	NA	NA	U		U		U		U		0.059	J	U		0.06	J
1,1-Biphenyl	NA	NA	U		U		U		U		U		U		U	
Acenaphthylene	100	100	U		U		U		U		U		U		U	
Acenaphthene	20	100	U		U		U		U		U		U		U	
Dibenzofuran	7	59	U		U		U		U		U		U		U	
Fluorene	30	100	U		U		U		U		U		U		U	
Pentachlorophenol	0.8	6.7	U		U		U		U		U		U		U	
Phenanthrene	100	100	0.067	J	0.37	J	U		U		U		U		0.24	J
Anthracene	100	100	U		0.12	J	U		U		U		U		0.065	J
Carbazole	NA	NA	U		U		U		U		U		U		U	
Di-n-butylphthalate	NA	NA	U		U		U		U		U		U		U	
Fluoranthene	100	100	U		0.53		U		U		U		U		0.4	
Pyrene	100	100	0.049	J	0.54		U		U		U		0.046	J	0.4	
Benzo(a)anthracene	1	1	U		0.27	J	U		U		U		U		0.22	J
Chrysene	1	3.9	0.062	J	0.26	J	U		U		U		U		0.25	J
bis(2-Ethylhexyl)phthalate	NA	NA	0.16	JB	0.044	J	0.052	J	0.048	J	0.058	J	0.057	J	0.087	J
Benzo(b)fluoranthene	1	1	U		0.22	J	U		U		U		U		0.26	J
Benzo(k)fluoranthene	0.8	3.9	U		0.14	J	U		U		U		U		0.13	J
Benzo(a)pyrene	1	1	U		0.21	J	U		U		U		U		0.2	J
Indeno(1,2,3-cd)pyrene	0.5	0.5	U		0.11	J	U		U		U		U		0.13	J
Dibenzo(a,h)anthracene	0.33	0.33	U		U		U		U		U		U		0.039	J
Benzo(g,h,i)perylene	100	100	U		0.09	J	U		U		U		U		0.12	J
TOTAL SVOCS*	NA	NA	0.178	J	2.904	J	0.052	J	0.111	J	0.204	J	0.103	J	2.642	J
TOTAL TICS*	NA	NA	9.59	NJ	0.682	NJ	2.315	J	0.287	J	1.739	J	U		0.517	NJ
TOTAL SVOCS AND TICS*	NA	NA	9.768	NJ	3.586	NJ	2.367	J	0.398	J	1.943	J	0.103	J	3.159	NJ

NA = Not available TIC = Tentatively identified compound J = Estimated value B = Detected in associated method blank

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

U = Not detected at concentration above reported analytical laboratory detection limit N = Indicates presumptive evidence of tentatively identified compound

5.5 = Exceeds Restricted Residential SCO * = Does not include compounds that were also detected in the associated method blank

Table 6 (Page 2 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Semi-Volatile Organic Compounds (SVOCs)
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	017 DAYSB-04 (12-15')	018 DAYSB-05 (4-8')	019 DAYMW-03 (4-8')	020 DAYMW-03 (8-12')	021 DAYSB-01 (12-15')	022 DAYSB-18 (4-8')	024 DAYSB-12 (4-8')
Acetophenone	NA	NA	U	0.063 J	U	U	U	U	U
Naphthalene	12	100	U	0.16 J	13	U	U	U	0.046 J
Caprolactam	NA	NA	U	U	U	U	U	U	U
2-Methylnaphthalene	NA	NA	U	0.29 J	4.8 J	U	U	U	0.041 J
1,1-Biphenyl	NA	NA	U	0.051 J	1.3 J	U	U	U	U
Acenaphthylene	100	100	U	0.11 J	1.6 J	U	U	U	0.054 J
Acenaphthene	20	100	U	U	4.2 J	U	U	U	U
Dibenzofuran	7	59	U	0.15 J	6.7 J	U	U	U	U
Fluorene	30	100	U	0.06 J	7.5 J	U	U	U	U
Pentachlorophenol	0.8	6.7	U	U	U	U	U	U	U
Phenanthrene	100	100	U	0.9	57	U	0.067 J	0.069 J	0.67
Anthracene	100	100	U	0.21 J	7.8 J	U	U	U	0.12 J
Carbazole	NA	NA	U	0.086 J	5.5 J	U	U	U	0.095 J
Di-n-butylphthalate	NA	NA	U	U	1.5 J	U	U	U	U
Fluoranthene	100	100	U	1.3	38	U	0.096 J	0.092 J	1.1
Pyrene	100	100	U	1.2	37	U	0.095 J	0.1 J	0.94
Benzo(a)anthracene	1	1	U	0.74	**14**	U	0.056 J	0.065 J	0.44
Chrysene	1	3.9	U	0.84	**13**	U	0.051 J	0.072 J	0.49
bis(2-Ethylhexyl)phthalate	NA	NA	0.077 J	0.092 J	U	0.06 J	0.061 J	0.065 J	0.06 J
Benzo(b)fluoranthene	1	1	U	1	**13**	U	0.052 J	0.073 J	0.72
Benzo(k)fluoranthene	0.8	3.9	U	0.37 J	**5.5** J	U	U	0.05 J	0.26 J
Benzo(a)pyrene	1	1	U	0.7	**12**	U	0.049 J	0.062 J	0.55
Indeno(1,2,3-cd)pyrene	0.5	0.5	U	0.39 J	**5.4** J	U	U	U	0.29 J
Dibenzo(a,h)anthracene	0.33	0.33	U	0.13 J	**1.9** J	U	U	U	0.088 J
Benzo(g,h,i)perylene	100	100	U	0.33 J	5 J	U	U	U	0.27 J
TOTAL SVOCS*	NA	NA	0.077 J	9.17 J	255.7 J	0.06 J	0.527 J	0.648 J	6.234 J
TOTAL TICS*	NA	NA	0.804 J	6.53 NJ	52.2 NJ	U	1.414 J	12.699 NJ	2.066 NJ
TOTAL SVOCS AND TICS*	NA	NA	0.881 J	15.7 NJ	307.9 NJ	0.06 J	1.941 J	13.347 NJ	8.3 NJ

NA = Not available TIC = Tentatively identified compound J = Estimated value B = Detected in associated method blank

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

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Table 6 (Page 3 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Semi-Volatile Organic Compounds (SVOCs)
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	025 DAYSB-21 (4-8')	026 DAYSB-20 (12-15')	027 DAYSB-14 (8-12')	028 DAYSB-14 (12-15')	029 DAYSB-15A (8-12')	030 DAYSB-14 (0-4')	031 DAYSB-25 (12-15.7')
Acetophenone	NA	NA	U	U	0.071 J	U	0.037 J	U	U
Naphthalene	12	100	U	U	U J	U	U	U	U
Caprolactam	NA	NA	U	U	U J	U	U	U	U
2-Methylnaphthalene	NA	NA	U	U	U J	U	U	U	U
1,1-Biphenyl	NA	NA	U	0.35	U J	U	U	U	U
Acenaphthylene	100	100	U	U	U J	U	U	U	U
Acenaphthene	20	100	U	U	U J	U	U	U	U
Dibenzofuran	7	59	U	U	U J	U	U	U	U
Fluorene	30	100	U	U	U J	U	U	U	U
Pentachlorophenol	0.8	6.7	U	U	U	U	U	U	U
Phenanthrene	100	100	U	U	2.5 J	0.72 J	0.79 J	U	U
Anthracene	100	100	U	U	U J	U	U	U	U
Carbazole	NA	NA	U	U	U J	U	U	U	U
Di-n-butylphthalate	NA	NA	U	U	U J	U	U	U	U
Fluoranthene	100	100	U	U	U J	U	U	0.046 J	U
Pyrene	100	100	U	U	U J	U	U	0.052 J	U
Benzo(a)anthracene	1	1	U	U	U J	U	U	U	U
Chrysene	1	3.9	U	U	U J	U	U	U	U
bis(2-Ethylhexyl)phthalate	NA	NA	0.14 J	0.15 J	0.093 J	0.15 J	0.12 J	0.094 J	0.096 J
Benzo(b)fluoranthene	1	1	U	U	U J	U	U	U	U
Benzo(k)fluoranthene	0.8	3.9	U	U	U J	U	U	U	U
Benzo(a)pyrene	1	1	0.045 J	U	U J	U	U	U	U
Indeno(1,2,3-cd)pyrene	0.5	0.5	U	U	U J	U	U	U	U
Dibenzo(a,h)anthracene	0.33	0.33	U	U	U J	U	U	U	U
Benzo(g,h,i)perylene	100	100	U	U	U J	U	U	U	U
TOTAL SVOCS*	NA	NA	0.185 J	0.15 J	2.664 J	0.87 J	0.947 J	0.192 J	0.096 J
TOTAL TICS*	NA	NA	0.1 J	2.159 J	28.957 NJ	19.947 NJ	24.002 NJ	0.389 J	0.246 J
TOTAL SVOCS AND TICS*	NA	NA	0.285 J	2.309 J	31.621 NJ	20.817 NJ	24.949 NJ	0.581 J	0.342 J

NA = Not available TIC = Tentatively identified compound J = Estimated value B = Detected in associated method blank

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

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5.5 = Exceeds Restricted Residential SCO * = Does not include compounds that were also detected in the associated method blank

Table 6 (Page 4 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Semi-Volatile Organic Compounds (SVOCs)
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	070 DAYSB-15C (10-11')	074 DAYSB-15C (7-8')	075 DAYSB-26 (7-8')	076 DAYSB-26 (8-10.5')	077 DAYSB-27 (4-7')	078 DAYSB-28 (2-4')
Acetophenone	NA	NA	U J	U J	U J	U J	U J	U J
Naphthalene	12	100	U J	U J	U J	U J	U J	U J
Caprolactam	NA	NA	1.1 J	U J	U J	U J	0.62 J	U J
2-Methylnaphthalene	NA	NA	U J	U J	U J	U J	U J	U J
1,1-Biphenyl	NA	NA	U J	U J	U J	U J	U J	U J
Acenaphthylene	100	100	U J	U J	U J	U J	U J	0.048 J
Acenaphthene	20	100	U J	U J	U J	U J	U J	U J
Dibenzofuran	7	59	U J	U J	U J	U J	U J	U J
Fluorene	30	100	0.28 J	U J	0.28 J	U J	0.25 J	U J
Pentachlorophenol	0.8	6.7	U J	U J	U J	U J	U J	0.063 J
Phenanthrene	100	100	1.8 J	U J	1.5 J	U J	1.4 J	0.36 J
Anthracene	100	100	U J	U J	U J	U J	U J	0.097 J
Carbazole	NA	NA	U J	U J	U J	U J	U J	0.11 J
Di-n-butylphthalate	NA	NA	U J	U J	U J	U J	U J	U J
Fluoranthene	100	100	U J	U J	U J	U J	U J	0.73 J
Pyrene	100	100	U J	U J	U J	U J	U J	0.67 J
Benzo(a)anthracene	1	1	U J	U J	U J	U J	U J	0.35 J
Chrysene	1	3.9	U J	U J	U J	U J	U J	0.45 J
bis(2-Ethylhexyl)phthalate	NA	NA	U J	U J	U J	U J	U J	U J
Benzo(b)fluoranthene	1	1	U J	U J	U J	U J	U J	0.58 J
Benzo(k)fluoranthene	0.8	3.9	U J	U J	U J	U J	U J	0.22 J
Benzo(a)pyrene	1	1	U J	U J	U J	U J	U J	0.33 J
Indeno(1,2,3-cd)pyrene	0.5	0.5	U J	U J	U J	U J	U J	0.14 J
Dibenzo(a,h)anthracene	0.33	0.33	U J	U J	U J	U J	U J	0.04 J
Benzo(g,h,i)perylene	100	100	U J	U J	U J	U J	U J	0.12 J
TOTAL SVOCS*	NA	NA	3.18 J	U J	1.78 J	U J	2.27 J	4.308 J
TOTAL TICS*	NA	NA	19.64 NJ	0.98 NJ	22.27 NJ	0.13 NJ	24.16 J	1.491 NJ
TOTAL SVOCS AND TICS*	NA	NA	22.82 NJ	0.98 NJ	24.05 NJ	0.13 NJ	26.43 J	5.799 NJ

NA = Not available   TIC = Tentatively identified compound   J = Estimated value   B = Detected in associated method blank

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

U = Not detected at concentration above reported analytical laboratory detection limit   N = Indicates presumptive evidence of tentatively identified compound

5.5 = Exceeds Restricted Residential SCO   * = Does not include compounds that were also detected in the associated method blank

Table 7 (Page 1 of 3)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Target Analyte List Metals and Cyanide
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Analyte	Unrestricted SCO (1)	Restricted Residential SCO (2)	010 Tank Pit (6.3')		011 DAYSB-13 (0-4')		012 DAYSB-07 (15-17')		013 DAYSB-06 (8-12')		014 DAYSB-03 (12-15')		015 DAYSB-02 (4-8')	
Aluminum	NA	NA	NT		5520	J	1440	J	4370	J	3550	J	4310	J
Antimony	NA	NA	NT		U		U		U		U		U	
Arsenic	13	16	NT		6.2	J	4.8	J	3.7	J	4.9	J	5.5	J
Barium	350	400	NT		59.0	J	9.4	B	44.3	J	32.9	J	43.9	J
Beryllium	7.2	72	NT		0.32	B	0.077	B	0.23	B	0.21	B	0.28	B
Cadmium	2.5	4.3	NT		0.039	B	U		U		U		0.027	B
Calcium	NA	NA	NT		39800	J	140000	J	44900	J	69700	J	85100	J
Chromium	30	180	NT		8.4	J	3.1	J	7.4	J	6.6	J	6.2	J
Cobalt	NA	NA	NT		4.2	B	1.3	B	3.3	B	2.9	B	3.3	B
Copper	50	270	NT		23.4	J	4.6	J	7.8	J	9.6	J	12.0	J
Iron	NA	NA	NT		11200	J	3590	J	9090	J	8320	J	9080	J
Lead	63	400	3.8	*	93.5	J	4.1	J	3.8	J	10.9	J	14.5	J
Magnesium	NA	NA	NT		17600	J	71400	J	11600	J	21200	J	15500	J
Manganese	1600	2000	NT		315	J	293	J	325	J	309	J	384	J
Mercury	0.18	0.81	NT		0.25	J	U		U		U		U	
Nickel	30	310	NT		9.5	J	2.7	B	7.4	J	6.2	B	7.9	J
Potassium	NA	NA	NT		922	J	400	B	1080	J	1050	J	1490	J
Selenium	3.9	180	NT		U		U		U		U		U	
Silver	2	180	NT		0.76	B	U		0.54	B	0.44	B	0.44	B
Sodium	NA	NA	NT		190	B	255	B	220	B	165	B	133	B
Thallium	NA	NA	NT		1.3	B	0.93	B	0.76	B	U		1.1	B
Vanadium	NA	NA	NT		13.2	J	4.2	B	11.5	J	9.7	J	9.3	J
Zinc	109	10000	NT		71.4	J	26.1	J	23.8	J	21	J	68.1	J
Cyanide	27	27	NT		U		U		U		U		U	

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

U = Not detected at concentration above reported analytical laboratory detection limit

N = Spiked sample recovery not within control limits * = Duplicate analysis not within control limits

B = Reported value less than contract required detection limit, but greater than instrument detection limit

NT = Not Tested J = estimated value

Table 7 (Page 2 of 3)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Target Analyte List Metals and Cyanide
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Analyte	Unrestricted SCO (1)	Restricted Residential SCO (2)	016 DAYSB-04 (4-8')		017 DAYSB-04 (12-15')		018 DAYSB-05 (4-8')		019 DAYMW-03 (4-8')		021 DAYSB-01 (12-15')		022 DAYSB-18 (4-8')	
Aluminum	NA	NA	5090	J	5050	J	7350	J	7790	J	8120	J	9790	J
Antimony	NA	NA	U		U		U		U		U		U	
Arsenic	13	16	7.0	J	4.2	J	10.8	J	5.3	J	6.2	J	15.3	J
Barium	350	400	40.0	J	39.4	J	80.4	J	71.7	J	84.7	J	98.5	J
Beryllium	7.2	72	0.27	B	0.27	B	0.42	B	0.38	B	0.44	B	0.53	B
Cadmium	2.5	4.3	0.029	B	U		0.023	B	U		U		U	
Calcium	NA	NA	62500	J	48600	J	30300	J	5600	J	53800	J	11200	J
Chromium	30	180	6.9	J	8.0	J	10.4	J	10.1	J	12.7	J	12.6	J
Cobalt	NA	NA	3.9	B	3.7	B	11.2	J	5.9	B	6.2	B	8.4	B
Copper	50	270	24.9	J	9.4	J	33.3	J	16.8	J	15.2	J	141	J
Iron	NA	NA	10300	J	10500	J	16700	J	14100	J	15600	J	22500	J
Lead	63	400	41.0	J	4.3	J	147	J	73.7	J	8.7	J	59.3	J
Magnesium	NA	NA	13500	J	12100	J	13000	J	3630	J	15000	J	6490	J
Manganese	1600	2000	389	J	353	J	499	J	161	J	491	J	299	J
Mercury	0.18	0.81	0.070	B	U		0.3	J	0.089	B	U		U	
Nickel	30	310	8.8	J	8.5	J	13.5	J	13.0	J	15.0	J	20.6	J
Potassium	NA	NA	837	J	1180	J	910	B	953	J	1750	J	1160	J
Selenium	3.9	180	U		U		U		U		U		U	
Silver	2	180	0.65	B	0.63	B	1.3	B	1.1	B	1.0	B	1.9	J
Sodium	NA	NA	144	B	154	B	146	B	83.8	B	208	B	151	B
Thallium	NA	NA	0.86	B	0.81	B	1.5	B	0.95	B	1.1	B	1.3	B
Vanadium	NA	NA	11.4	J	13.3	J	16.2	J	15.2	J	20.1	J	21.4	J
Zinc	109	10000	64.0	J	21.6	J	133	J	58.0	J	36.3	J	89.1	J
Cyanide	27	27	U		U		0.18	B	U		U		U	

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U = Not detected at concentration above reported analytical laboratory detection limit

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Table 7 (Page 3 of 3)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Target Analyte List Metals and Cyanide
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Analyte	Unrestricted SCO (1)	Restricted Residential SCO (2)	024 DAYSB-12 (4-8')		025 DAYSB-21 (4-8')		026 DAYSB-20 (12-15')		027 DAYSB-14 (8-12')		029 DAYSB-15A (8-12')		030 DAYSB-14 (0-4')		031 DAYSB-25 (12-15.7')	
Aluminum	NA	NA	5760		7080		930		2900		2800		13200		5180	
Antimony	NA	NA	U	N	U	N	U	N	U	N	U	N	U	N	U	N
Arsenic	13	16	8.4	*	7.2	*	4.4	*	3.8	*	6.0	*	6.9	*	6.1	*
Barium	350	400	57.2		65.9		10.9	B	16.8	B	44.2		157		50.7	
Beryllium	7.2	72	0.36	BJ	0.31	BJ	0.060	BJ	0.15	BJ	0.16	BJ	0.70	BJ	0.28	BJ
Cadmium	2.5	4.3	0.16	B	0.017	U	0.41	B	U		U		U		U	
Calcium	NA	NA	38700	*	1660	*	162000	*	109000	*	62500	*	5810	*	38700	*
Chromium	30	180	8.6	J	10.3	J	1.9	J	4.6	J	4.4	J	13.3	J	9.3	J
Cobalt	NA	NA	4.7	BJ	5.4	BJ	0.72	BJ	2.0	BJ	2.3	BJ	7.6	BJ	4.4	BJ
Copper	50	270	76.7	N	7.5	N	3.9	BN	10.2	N	8.3	N	13.9	N	17.4	N
Iron	NA	NA	12700		14700		2510		6600		6730		19700		10800	
Lead	63	400	163	*J	12.2	*J	5.6	*J	8.4	*J	6.5	*J	31.2	*J	21.1	*J
Magnesium	NA	NA	12200		2880		76700		43300		37300		3510		12200	
Manganese	1600	2000	386		256		276		313		599		804		433	
Mercury	0.18	0.81	0.42		0.017	B	U		U		U		0.078	B	U	
Nickel	30	310	13.3		16.5		1.7	B	5.6	B	6.4		16.7		9.7	
Potassium	NA	NA	730	B	730	B	273	B	657	B	599	B	901		863	
Selenium	3.9	180	U	*J	U	*J	U	*J	U	*J	U	*J	2.3	*J	U	*J
Silver	2	180	0.99	B	1.1	B	U		0.18	B	0.31	B	1.6	B	0.63	B
Sodium	NA	NA	135	B	215	B	218	B	189	B	193	B	1510		120	B
Thallium	NA	NA	1.1	B	1.2	B	1.0	B	U		1.0	B	1.6	B	1.4	B
Vanadium	NA	NA	12.5		12.1		2.9	B	6.9	B	6.3	B	20.1		11.5	
Zinc	109	10000	152	N*J	130	N*J	205	N*J	63.5	N*J	100	N*J	63.8	N*J	51.2	N*J
Cyanide	27	27	U	N	U	N	U	N	U	N	U	N	U	N	U	N

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

U = Not detected at concentration above reported analytical laboratory detection limit

N = Spiked sample recovery not within control limits * = Duplicate analysis not within control limits

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Table 8 (Page 1 of 3)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of PCBs and Pesticides
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	011 DAYSB-13 (0-4')	012 DAYSB-07 (15-17')	013 DAYSB-06 (8-12')	014 DAYSB-03 (12-15')	015 DAYSB-02 (4-8')	016 DAYSB-04 (4-8')
Dieldrin	0.005	0.2	U	U	U	U	U	U
4,4'-DDE	0.0033	8.9	U	U	U	U	U	0.0017 JP
4,4'-DDT	0.0033	7.9	U	U	U	U	U	U
gamma-Chlordane	NA	NA	U	U	U	U	U	U
PCB	0.1	1	U	U	U	U	U	U

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

U = Not detected at concentration above reported analytical laboratory detection limit

P = Greater than 25% difference in detection between two GC columns used for primary and confirmation analyses. The lower of the two values is reported.

NA = Not available J = Estimated Value

Table 8 (Page 2 of 3)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of PCBs and Pesticides
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	017 DAYSB-04 (12-15')		018 DAYSB-05 (4-8')		019 DAYMW-03 (4-8')		021 DAYSB-01 (12-15')		022 DAYSB-18 (4-8')		024 DAYSB-12 (4-8')	
Dieldrin	0.005	0.2	U		0.0091		U		U		U		U	
4,4'-DDE	0.0033	8.9	U		U		U		U		U		U	
4,4'-DDT	0.0033	7.9	U		0.0048		U		U		U		0.0026	JP
gamma-Chlordane	NA	NA	U		0.0012	JP	U		U		U		U	
PCB	0.1	1	U		U		U		U		U		U	

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(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

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Table 8 (Page 3 of 3)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of PCBs and Pesticides
in mg/Kg or Parts Per Million (ppm)

RI Subsurface Soil and Fill Samples

Detected Compound	Unrestricted SCO (1)	Restricted Residential SCO (2)	025 DAYSB-21 (4-8')	026 DAYSB-20 (12-15')	027 DAYSB-14 (8-12')	029 DAYSB-15A (8-12')	030 DAYSB-14 (0-4')	031 DAYSB-25 (12-15.7')
Dieldrin	0.005	0.2	U	U	U	U	U	U
4,4'-DDE	0.0033	8.9	U	U	U	U	U	U
4,4'-DDT	0.0033	7.9	U	U	U	U	U	U
gamma-Chlordane	NA	NA	U	U	U	U	U	U
PCB	0.1	1	U	U	U	U	U	U

(1) = Unrestricted soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

(2) = Restricted residential soil cleanup objective (SCO) as referenced in 6 NYCRR Part 375 dated December 14, 2006.

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Table 9 (Page 1 of 5)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Volatile Organic Compounds (VOCs)
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Compound	Groundwater Standard or Guidance Value (1)	032 MW-URS1 09/05/06		033 MW-URS2 09/05/06		035 DAYMW-02 09/07/06		037 MW-8 09/08/06		039 DAYMW-03 09/08/06	
Dichlorodifluoromethane	5	U		U		U		U		U	
Acetone	50	U		U		U		U		U	
Cyclohexane	NA	130	D	U		U		U		U	
Benzene	1	**13**		U		U		U		U	
Trichloroethene	5	U		U		U		U		3	J
Methylcyclohexane	NA	100	D	U		U		U		U	
Toluene	5	**7**		U		U		U		U	
Ethylbenzene	5	**64**		U		U		U		U	
Xylene (total)	5	**330**		U		U		U		U	
Isopropylbenzene	5	**38**		U		U		U		U	
TOTAL VOCS	NA	682	D	U		U		U		3	J
TOTAL TICS	NA	2904	NJ	U		U		U		U	
TOTAL VOCS AND TICS	NA	3586	NJD	U		U		U		3	J

NA = Not available
J = Estimated value
TIC = Tentatively Identified Compound

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

13 = Exceeds groundwater standard or guidance value

D = Compound concentration was obtained from a diluted analysis.

U = Not detected at concentrations above reported analytical laboratory detection limits

N = Analyte passed identification criteria and is considered to be positively identified

Table 9 (Page 2 of 5)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Volatile Organic Compounds (VOCs)
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Compound	Groundwater Standard or Guidance Value (1)	040 MW-5 09/08/06	042 MW-6 09/09/06	043 DAYMW-04 09/11/06	044 DAYMW-05 09/11/06
Dichlorodifluoromethane	5	**7**	U	U	U
Acetone	50	U	U	U	U
Cyclohexane	NA	U	U	U	U
Benzene	1	U	U	U	U
Trichloroethene	5	U	U	U	**15**
Methylcyclohexane	NA	U	U	U	U
Toluene	5	U	U	U	U
Ethylbenzene	5	U	U	U	U
Xylene (total)	5	U	U	U	U
Isopropylbenzene	5	U	U	U	U
TOTAL VOCS	NA	7	U	U	15
TOTAL TICS	NA	U	U	U	U
TOTAL VOCS AND TICS	NA	7	U	U	15

NA = Not available J = Estimated value TIC = Tentatively Identified Compound

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

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N = Analyte passed identification criteria and is considered to be positively identified

Table 9 (Page 3 of 5)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Volatile Organic Compounds (VOCs)
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Compound	Groundwater Standard or Guidance Value (1)	060 DAYMW-02 04/04/07	061 DAYMW-03 04/05/07	062 DAYMW-04 04/04/07	063 DAYMW-05 04/04/07	064 MW-5 04/03/07
Dichlorodifluoromethane	5	U	U	U	U	**8** J
Acetone	50	U	U	15	U	U
Cyclohexane	NA	U	U	U	U	U
Benzene	1	U	U	U	U	U
Trichloroethene	5	U	U	U	**7** J	U
Methylcyclohexane	NA	U	U	U	U	U
Toluene	5	U	U	U	U	U
Ethylbenzene	5	U	U	U	U	U
Xylene (total)	5	U	U	U	U	U
Isopropylbenzene	5	U	U	U	U	U
TOTAL VOCS	NA	U	U	15	7 J	8 J
TOTAL TICS	NA	U	U	U	U	U
TOTAL VOCS AND TICS	NA	U	U	15	7 J	8 J

NA = Not available J = Estimated value TIC = Tentatively Identified Compound

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

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N = Analyte passed identification criteria and is considered to be positively identified

Table 9 (Page 4 of 5)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Volatile Organic Compounds (VOCs)
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Compound	Groundwater Standard or Guidance Value (1)	065 MW-6 04/03/07		066 MW-8 04/04/07		067 MW-URS1 04/02/07		068 MW-URS2 04/03/07		069 DAYMW-01 04/05/07	
Dichlorodifluoromethane	5	U		U		U		U		U	
Acetone	50	U		U		U		U		U	
Cyclohexane	NA	U		U		170	D	U		U	
Benzene	1	U		U		**12**		U		U	
Trichloroethene	5	U		U		U		U		U	
Methylcyclohexane	NA	U		U		200		U		U	
Toluene	5	U		U		**8**	J	U		U	
Ethylbenzene	5	U		U		**190**		U		U	
Xylene (total)	5	U		U		**530**	D	U		U	
Isopropylbenzene	5	U		U		**36**		U		U	
TOTAL VOCS	NA	U		U		1146	JD	U		U	
TOTAL TICS	NA	U		U		3415	NJ	U		U	
TOTAL VOCS AND TICS	NA	U		U		4561	NJD	U		U	

NA = Not available J = Estimated value TIC = Tentatively Identified Compound

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

13 = Exceeds groundwater standard or guidance value D = Compound concentration was obtained from a diluted analysis.

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N = Analyte passed identification criteria and is considered to be positively identified

Table 9 (Page 5 of 5)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Volatile Organic Compounds (VOCs)
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Compound	Groundwater Standard or Guidance Value (1)	081 TW-3 09/11/08	089 TW-5 09/12/08	090 TW-6 09/12/08	091 TW-4 09/12/08	092 TW-2 09/12/08	093 TW-1 09/12/08
Dichlorodifluoromethane	5	U	U	U	U	U	U
Acetone	50	U	U	U	U	U	U
Cyclohexane	NA	U	U	U	U	U	U
Benzene	1	U	U	U	U	U	U
Trichloroethene	5	**10**	U	U	U	U	**18**
Methylcyclohexane	NA	U	U	U	U	U	U
Toluene	5	U	U	U	U	U	U
Ethylbenzene	5	U	U	U	U	U	U
Xylene (total)	5	U	U	U	U	U	U
Isopropylbenzene	5	U	U	U	U	U	U
TOTAL VOCS	NA	10	U	U	U	U	18
TOTAL TICS	NA	U	U	U	U	U	U
TOTAL VOCS AND TICS	NA	10	U	U	U	U	18

NA = Not available J = Estimated value TIC = Tentatively Identified Compound

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

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Table 10 (Page 1 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Semi-Volatile Organic Compounds (SVOCs)
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Compound	Groundwater Standard or Guidance Value (1)	032 MW-URS1 09/05/06		033 MW-URS2 09/06/06		035 DAYMW-02 09/07/06		037 MW-8 09/08/06		039 DAYMW-03 09/08/06	
Phenol	1	U		U		U		U		U	
Isophorone	50	U		U		U		U		U	
2,4-Dimethylphenol	50	2	J	U		U		U		U	
Naphthalene	10	**90**	D	U		U		U		U	
Caprolactam	NA	U		U		U		U		U	
2-Methylnaphthalene	NA	19		U		U		U		U	
4-Nitrophenol	NA	U		U		U		U		U	
Diethylphthalate	50	U		U		1	J	U		U	
Fluorene	50	U		U		U		U		U	
Phenanthrene	50	U		U		U		U		U	
Carbazole	NA	U		U		U		U		U	
Fluoranthene	50	U		U		U		U		U	
Pyrene	50	U		U		U		U		U	
Benzo(a)anthracene	0.002	U		U		U		U		U	
Chrysene	0.002	U		U		U		U		U	
bis(2-Ethylhexyl)phthalate	5	**25**		U		1	J	U		U	
Benzo(b)fluoranthene	0.002	U		U		U		U		U	
Benzo(k)fluoranthene	0.002	U		U		U		U		U	
Benzo(a)pyrene	U	U		U		U		U		U	
Indeno(1,2,3-cd)pyrene	0.002	U		U		U		U		U	
Benzo(g,h,i)perylene	NA	U		U		U		U		U	
TOTAL SVOCS*	NA	136	JD	U		2	J	U		U	
TOTAL TICS*	NA	408	NJD	U		92	NJ	131	NJ	53	NJ
TOTAL SVOCS AND TICS*	NA	544	NJD	U		94	NJ	131	NJ	53	NJ

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

25 = Exceeds groundwater standard or guidance value

B = Compound also detected in associated method blank

D = Compound concentration was obtained from a diluted analysis.

NA = Not Available

U = Not detected at concentrations above reported analytical laboratory detection limits

J = Estimated Value

N = Analyte passed identification criteria and is considered to be positively identified

TIC = Tentatively Identified Compound

* = Does not include constituents that were detected in associated blank as well as in the sample

Table 10 (Page 2 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Semi-Volatile Organic Compounds (SVOCs)
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Compound	Groundwater Standard or Guidance Value (1)	040 MW-5 09/08/06		042 MW-6 09/09/06		043 DAYMW-04 09/11/06		044 DAYMW-05 09/11/06	
Phenol	1	U		U		U		U	
Isophorone	50	U		U		U		U	
2,4-Dimethylphenol	50	U		U		U		U	
Naphthalene	10	U		U		U		U	
Caprolactam	NA	U		U		2	J	U	
2-Methylnaphthalene	NA	U		U		U		U	
4-Nitrophenol	NA	U		U		U		U	
Diethylphthalate	50	U		U		U		U	
Fluorene	50	U		1	J	U		U	
Phenanthrene	50	U		2	J	U		U	
Carbazole	NA	U		U		U		U	
Fluoranthene	50	U		U		U		U	
Pyrene	50	U		U		U		U	
Benzo(a)anthracene	0.002	U		U		U		U	
Chrysene	0.002	U		U		U		U	
bis(2-Ethylhexyl)phthalate	5	U		2	JB	5	JB	4	JB
Benzo(b)fluoranthene	0.002	U		U		U		U	
Benzo(k)fluoranthene	0.002	U		U		U		U	
Benzo(a)pyrene	U	U		U		U		U	
Indeno(1,2,3-cd)pyrene	0.002	U		U		U		U	
Benzo(g,h,i)perylene	NA	U		U		U		U	
TOTAL SVOCS*	NA	U		3	J	2	J	U	
TOTAL TICS*	NA	366	NJ	183	NJ	287	NJ	141	NJ
TOTAL SVOCS AND TICS*	NA	366	NJ	186	NJ	289	NJ	141	NJ

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

25 = Exceeds groundwater standard or guidance value

B = Compound also detected in associated method blank

D = Compound concentration was obtained from a diluted analysis.

NA = Not Available

U = Not detected at concentrations above reported analytical laboratory detection limits

J = Estimated Value

N = Analyte passed identification criteria and is considered to be positively identified

TIC = Tentatively Identified Compound

* = Does not include constituents that were detected in associated blank as well as in the sample

Table 10 (Page 3 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Semi-Volatile Organic Compounds (SVOCs)
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Compound	Groundwater Standard or Guidance Value (1)	060 DAYMW-02 04/04/07		061 DAYMW-03 04/05/07		062 DAYMW-04 04/04/07		063 DAYMW-05 04/04/07		064 MW-5 04/03/07	
Phenol	1	U		U		**2**	J	U		U	
Isophorone	50	U		U		1	J	U		U	
2,4-Dimethylphenol	50	U		U		U		U		U	
Naphthalene	10	U		U		U		U		U	
Caprolactam	NA	10		U		26		U		U	
2-Methylnaphthalene	NA	U		U		U		U		U	
4-Nitrophenol	NA	U		U		2	J	U		U	
Diethylphthalate	50	U		U		U		U		U	
Fluorene	50	U		U		U		U		U	
Phenanthrene	50	U		U		5	J	U		U	
Carbazole	NA	U		U		2	J	U		U	
Fluoranthene	50	U		U		11		U		U	
Pyrene	50	U		U		7		U		U	
Benzo(a)anthracene	0.002	U		U		**2**	J	U		U	
Chrysene	0.002	U		U		**6**		U		U	
bis(2-Ethylhexyl)phthalate	5	U		U		**15**		U		U	
Benzo(b)fluoranthene	0.002	U		U		**7**		U		U	
Benzo(k)fluoranthene	0.002	U		U		**3**	J	U		U	
Benzo(a)pyrene	U	U		U		3	J	U		U	
Indeno(1,2,3-cd)pyrene	0.002	U		U		**2**	J	U		U	
Benzo(g,h,i)perylene	NA	U		U		3	J	U		U	
TOTAL SVOCS*	NA	10		U		97	J	U		U	
TOTAL TICS*	NA	4	J	10	J	311	NJ	U		93	NJ
TOTAL SVOCS AND TICS*	NA	14	J	10	J	408	NJ	U		93	NJ

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

25 = Exceeds groundwater standard or guidance value

B = Compound also detected in associated method blank

D = Compound concentration was obtained from a diluted analysis.

NA = Not Available

U = Not detected at concentrations above reported analytical laboratory detection limits

J = Estimated Value

N = Analyte passed identification criteria and is considered to be positively identified

TIC = Tentatively Identified Compound

* = Does not include constituents that were detected in associated blank as well as in the sample

Table 10 (Page 4 of 4)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Detected Semi-Volatile Organic Compounds (SVOCs)
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Compound	Groundwater Standard or Guidance Value (1)	065 MW-6 04/03/07		066 MW-8 04/04/07		067 MW-URS1 04/02/07		068 MW-URS2 04/03/07		069 DAYMW-01 04/05/07	
Phenol	1	U		U		U		U		U	
Isophorone	50	U		U		U		U		U	
2,4-Dimethylphenol	50	U		U		U		U		U	
Naphthalene	10	U		U		**250**	D	U		U	
Caprolactam	NA	U		U		U		U		U	
2-Methylnaphthalene	NA	U		U		71		U		U	
4-Nitrophenol	NA	U		U		U		U		U	
Diethylphthalate	50	U		U		U		U		U	
Fluorene	50	U		U		U		U		U	
Phenanthrene	50	U		U		U		U		U	
Carbazole	NA	U		U		U		U		U	
Fluoranthene	50	U		U		U		U		U	
Pyrene	50	U		U		U		U		U	
Benzo(a)anthracene	0.002	U		U		U		U		U	
Chrysene	0.002	U		U		U		U		U	
bis(2-Ethylhexyl)phthalate	5	2	J	1	J	2	J	U		U	
Benzo(b)fluoranthene	0.002	U		U		U		U		U	
Benzo(k)fluoranthene	0.002	U		U		U		U		U	
Benzo(a)pyrene	U	U		U		U		U		U	
Indeno(1,2,3-cd)pyrene	0.002	U		U		U		U		U	
Benzo(g,h,i)perylene	NA	U		U		U		U		U	
TOTAL SVOCS*	NA	2	J	1	J	323	J	U		U	
TOTAL TICS*	NA	246	NJ	4	J	2,632	NJ	77	J	11	J
TOTAL SVOCS AND TICS*	NA	248	NJ	5	J	2,995	NJ	77	J	11	J

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

25 = Exceeds groundwater standard or guidance value

B = Compound also detected in associated method blank

D = Compound concentration was obtained from a diluted analysis.

NA = Not Available

U = Not detected at concentrations above reported analytical laboratory detection limits

J = Estimated Value

N = Analyte passed identification criteria and is considered to be positively identified

TIC = Tentatively Identified Compound

* = Does not include constituents that were detected in associated blank as well as in the sample

Table 11 (Page 1 of 2)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Target Analyte List Metals and Cyanide
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Analyte	Groundwater Standard or Guidance Value (1)	032 MW-URS1 09/05/06		033 MW-URS2 09/06/06		035 DAYMW-02 09/07/06		037 MW-8 09/08/06		039 DAYMW-03 09/08/06	
Aluminum	NA	112	B	U		16100		U		263	
Antimony	3	U		U		U		U		U	
Arsenic	25	U		U		8.6	B	U		7.3	B
Barium	1000	466		117	B	234		160	B	758	
Beryllium	3	U		U		0.81	B	U		U	
Cadmium	5	0.24	B	0.33	B	0.53	B	U		0.24	B
Calcium	NA	118000		148000		208000		136000		181000	
Chromium	50	0.69	B	0.59	B	28.5		0.34	B	U	
Cobalt	NA	0.56	B	0.41	B	10.2	B	0.44	B	1.8	B
Copper	200	9.5	B	6.9	B	29		4	B	5.4	B
Iron	300	**8690**		47.6	B	**25700**		**963**		**7530**	
Lead	25	U		U		18.2		U		U	
Magnesium	35000	**61400**		30700		**54000**		25800		32800	
Manganese	300	45		5	B	**838**		141		**6110**	
Mercury	0.7	U		0.032	B	U		U		U	
Nickel	100	1.4	B	1.1	B	25.1	B	2	B	5.1	B
Potassium	NA	1590	B	8300		16600		8350		13900	
Selenium	10	U	N	U	N	U	N	U	N	U	N
Silver	50	U		U		U		U		U	
Sodium	20000	**23200**		11200		11700		**30500**		**135000**	
Thallium	0.5	**3.1**	B	U		**3.4**	B	U		**26.8**	
Vanadium	NA	0.75	B	U		30.8	B	U		0.82	B
Zinc	2000	16.9	B	25.8		88.5		8.8	B	25.1	
Cyanide	200	U		U		U		U		U	

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

6110 = Exceeds groundwater standard or guidance value   NT = Not Tested

B = Reported value less than contract required detection limit, but greater than instrument detection limit

N = Spiked sample recovery not within control limits   R = rejected due to 0% recovery in spiked sample

U = Not detected at concentrations above reported analytical laboratory detection limits

Table 11 (Page 2 of 2)
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Target Analyte List Metals and Cyanide
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Detected Analyte	Groundwater Standard or Guidance Value (1)	040 MW-5 09/08/06		042 MW-6 09/08/06		043 DAYMW-04 09/11/06		044 DAYMW-05 09/11/06		063 DAYMW-05 04/04/07		069 DAYMW-01 04/05/07	
Aluminum	NA	U		79.7	B	2510		128000		284		13100	
Antimony	3	U		U		U		U		**6.7**	BJ	**10.2**	BJ
Arsenic	25	U		6.5	B	U		**43.6**		U		20.9	
Barium	1000	152	B	**1550**		421		**1010**		309		375	
Beryllium	3	U		U		U		**5.7**		U		0.56	B
Cadmium	5	0.31	B	13.8		0.72	B	**6.9**		0.38	B	0.9	B
Calcium	NA	212000		117000		542000		485000		256000		227000	
Chromium	50	2.3	B	1.7	B	5.6	B	**206**		U		27.7	
Cobalt	NA	0.32	B	0.37	B	1.3	B	82.1		1.6	B	11.9	B
Copper	200	7.7	B	3.1	B	11.2	B	**286**		17.7	B	57.7	
Iron	300	104		**10900**		**11700**		**179000**		**473**		**31700**	
Lead	25	U		U		U		**251**		U		10	
Magnesium	35000	34000		34900		**116000**		**154000**		**45400**		**47100**	
Manganese	300	36.6		250		**608**		**4630**		**770**		**2170**	
Mercury	0.7	U		U		U		0.68		U		U	
Nickel	100	3.5	B	1.6	B	3.9	B	**239**		U		32.9	B
Potassium	NA	22800		10700		78400		28900		11900		20900	
Selenium	10	U	N	U	N	U	N	**17.2**	N	**18.4**		**27**	
Silver	50	U		U		U		U		R		R	
Sodium	20000	**362000**		**196000**		**665000**		**270000**		**300000**		16100	
Thallium	0.5	**2.5**	B	U		**2.4**	B	**3.4**	B	U		U	
Vanadium	NA	U		0.64	B	4.7	B	201		2	B	21.3	B
Zinc	2000	9.7	B	10.7	B	19.7	B	1920		40.5	E	225	E
Cyanide	200	U		U		U		U		NT		4.9	B

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

6110 = Exceeds groundwater standard or guidance value   NT = Not Tested

B = Reported value less than contract required detection limit, but greater than instrument detection limit

N = Spiked sample recovery not within control limits   R = rejected due to 0% recovery in spiked sample

U = Not detected at concentrations above reported analytical laboratory detection limits

Table 12
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Summary of Polychlorinated Biphenyls (PCBs) and Pesticides
in ug/L or Parts per Billion (ppb)

RI Groundwater Samples

Constituent	Groundwater Standard or Guidance Value (1)	032 MW-URS1 09/05/06	033 MW-URS2 09/05/06	035 DAYMW-02 09/07/06	037 MW-8 09/08/06	039 DAYMW-03 09/08/06	040 MW-5 09/08/06	042 MW-6 09/08/06	043 DAYMW-04 09/11/06	044 DAYMW-05 09/11/06
Pesticides	NA	U	U	U	U	U	U	U	U	U
Total Aroclors (PCBs)	0.09	U	U	U	U	U	U	U	U	U

NA = Not available

(1) = Groundwater standard or guidance value as referenced in NYSDEC TOGS 1.1.1dated June 1998 as amended by the NYSDEC's supplemental table dated April 2000

U = Not detected at concentrations above reported analytical laboratory detection limits

Table 13

Vapor Intrusion Evaluation Air Sample Results
205-405 Mt. Hope Ave., Rochester, New York

Summary of Detected Volatile Organic Compounds Reported in ug/m^3
RI Samples Collected January 30, 2007

Detected Constituent	NYSDOH Indoor (ug/m3)[(1)]	NYSDOH Outdoor (ug/m3)[(2)]	Sample Location													
			046 SLB-01	047 IA-01	048 SLB-02	049 IA-02	050 SLB-03	051 IA-03	052 SLB-04	053 IA-04	054 SLB-05	055 IA-05	056 SLB-06	057 IA-06	058 BG-01	059 BG-02
Chloromethane	4.13	4.13	U (<0.64)	0.87	U (<0.66)	U (<0.77)	U (<0.65)	U (<0.82)	U (<0.68)	U (<0.79)	U (<0.66)	U (<0.90)	U (<0.80)	U (<0.77)	U (<0.78)	U (<0.77)
Acetone	115.15	29.9	17	12	260	14	32	17	290	12	19	U (<9.0)	18 J	8.7	U (<7.8)	9.7
Trichlorofluoromethane	11.85	5.13	1.6	1.3	1.3	1.2	12	1.2 J	3.7	1.2	36	1.3	37	1.3	1.1	1.2
Trichlorotrifluoroethane	2.38	2.38	1.0	U (<0.64)	U (<0.66)	U (<0.77)	U (<0.65)	U (<0.82)	U (<0.68)	U (<0.79)	U (<0.66)	U (<0.90)	U (<0.80)	U (<0.77)	U (<0.78)	U (<0.77)
Carbon Disulfide	NA	NA	U (<0.64)	U (<0.64)	2.1	U (<0.77)	1.1	U (<0.82)	4.6 J	U (<0.79)	U (<0.66)	U (<0.90)	1.3	U (<0.77)	U (<0.78)	U (<0.77)
Vinyl Acetate	NA	NA	U (<1.3)	U (<1.3)	2.4 J	U (<1.5)	1.9 J	4.8 J	U (<1.4)	U (<1.6)	U (<1.3)	U (<1.8)	U (<1.6)	U (<1.5)	U (<1.6)	U (<1.5)
2-Butanone (MEK)	16.15	5.3	2.1	1.2	7.2	2.5	3.4	1.8	29	1.4	2.8	1.2	3.8	1.4	1.2	1.2
Chloroform	0.88	<0.25	5.3 J	U (<0.64)	3.0 J	U (<0.77)	0.98 J	U (<0.82)	1.4 J	U (<0.79)	U (<0.66)	U (<0.90)	U (<0.80)	U (<0.77)	U (<0.78)	U (<0.77)
Benzene	13.1	4.6	2.3	1.7 J	3.9	1.4 J	2.4 J	1.2 J	5.3	1.1 J	2.5 J	1.4 J	4.7	1.1 J	1.5 J	1.0 J
Trichloroethene [(3)]	<0.25	<0.25	7.1	U (<0.32)	5.9 J	U (<0.39)	12	U (<0.41)	2.7 J	U (<0.39)	0.5 J	U (<0.45)	U (<0.40)	U (<0.38)	U (<0.39)	U (<0.39)
4-Methyl-2-Pentanone	1.88	<0.25	1.1	U (<0.64)	2.1	U (<0.77)	1.6	U (<0.82)	3.7	U (<0.79)	1.7	U (<0.90)	1.6	U (<0.77)	U (<0.78)	U (<0.77)
Toluene	57.25	5.1	23	4.1 J	28	2.9 J	23	2.1 J	31	2.1 J	20	2.9 J	26	2.0 J	3.9 J	1.8 J
Tetrachloroethene [(4)]	2.38	0.38	1.8 J	U (<0.64)	3.7 J	U (<0.77)	2.5 J	U (<0.82)	4.8 J	U (<0.79)	1.9 J	U (<0.90)	2.4 J	U (<0.77)	U (<0.78)	U (<0.77)
Ethylbenzene	6.4	0.88	10	0.74	18	U (<0.77)	12	U (<0.82)	14	U (<0.79)	11	U (<0.90)	10	U (<0.77)	U (<0.78)	U (<0.77)
m/p-Xylene	10.75	0.88	40	3.1 J	65	2.4 J	40	U (<1.6)	56	1.7 J	41	2.3 J	37	U (<1.5)	**2.8 J**	U (<1.5)
Styrene	1.13	<0.25	1.6 J	U (<0.64)	3.9 J	U (<0.77)	2.6 J	U (<0.82)	3.2 J	U (<0.79)	1.6 J	U (<0.90)	1.7 J	U (<0.77)	U (<0.78)	U (<0.77)
o-Xylene	7.15	1.38	11	1.1 J	17	0.85 J	9.5	U (<0.82)	U (<0.68)	U (<0.79)	12	U (<0.90)	8.9	U (<0.77)	0.94 J	U (<0.77)
1,3-Dichlorobenzene	<0.25	<0.25	U (<0.64)	U (<0.64)	0.92	U (<0.77)	U (<0.65)	U (<0.82)	0.76	U (<0.79)	U (<0.66)	U (<0.90)	U (<0.80)	U (<0.77)	U (<0.78)	U (<0.77)
1,4-Dichlorobenzene	0.88	<0.25	2.6	**1.6**	5.1	U (<0.77)	2.9	U (<0.82)	4.3	U (<0.79)	19	**12**	2.9	U (<0.77)	U (<0.78)	U (<0.77)

U = Not detected at concentration above analytical laboratory reporting limit noted in parentheses. NA = Not Available.

[(1)] Indoor Air Upper Fence value calculated as 1.5 times the interquartile range (difference between the 25th and 75th percentile values) above the 75th percentile value of the specified compound as set forth in Section 3.2.4 of the New York State Department of Health (NYSDOH) document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006 (used to for comparison to indoor air sample results).

[(2)] Outdoor Air Upper Fence value calculated as 1.5 times the interquartile range (difference between the 25th and 75th percentile values) above the 75th percentile value of the specified compound as set forth in Section 3.2.4 of the New York State Department of Health (NYSDOH) document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006 (used for comparison to outdoor air background sample results).

25th percentiles that are reported as a detection limit (I.e., <0.25 ug/m^3) were assumed to equal an actual detected value (i.e., 0.25 ug/m^3) when calculating the Upper Fence values.

1.6 = exceeds Indoor Air Upper Fence Value   **2.8** = exceeds Outdoor Air Upper Fence Value   Sub-Slab results are not compared to Upper Fence values.   J = Estimated value

[(3)] The NYSDOH document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006 lists an air guidance value of 5 ug/m^3 for Trichloroethene (TCE).

[(4)] The NYSDOH document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006 lists an air guidance value of 100 ug/m^3 for Tetrachloroethene (PCE).

Table 14

Soil Vapor Sample Results
205-405 Mt. Hope Ave., Rochester, New York

Summary of Detected Volatile Organic Compounds Reported in ug/m^3
RI Samples Collected September 11, 2008 and December 5, 2008

Detected Constituent	NYSDOH Indoor (ug/m3)[1]	NYSDOH Outdoor (ug/m3)[2]	Sample Location							
			082 BG Outdoor Air	083 SV-1	084 SV-2	085 SV-3	086 SV-4	087 SV-5	088 SV-6	095 SV-7
			9/11/2008	9/11/2008	9/11/2008	9/11/2008	9/11/2008	9/11/2008	9/11/2008	12/5/2008
Acetone	115	30	7.8 J	510 J	64 J	130 J	150 J	150 J	270 J	34
Benzene	13	4.8	0.42 J	110	78	73	190	330	450	5
1,3-Butadiene	NA	NA	U	U	U	U	U	U	U	0.51
2-Butanone (MEK)	16	5.3	0.62	29	13	30	35	16	53	6.5
Carbon Disulfide	NA	NA	U	43	46	75	100	130	210	0.32
Carbon Tetrachloride	1.3	1.2	0.53 J	U	U	U	U	U	U	0.37
Chloroform	1.2	0.5	U	1.3 J	1.2 J	13	14	U	U	1.4 J
Chloromethane	4.2	4.3	1.0 J	U	1.0 J	U	U	U	U	0.82 J
Cyclohexane	6.3	0.9	U	100	98	320	78	310	640	8.3
1,4-Dichlorobenzene	1.2	0.5	U	U	1.5	U	U	U	U	U
Dichlorodifluoromethane	10	10	2.5	6600	1600	19000	14000	110	4100	1.5
1,2-Dichloroethane	0.4	0.4	U	U	2.9 J	U	U	U	U	U
cis-1,2-Dichloroethene	0.4	0.4	U	U	U	U	U	U	3.9	U
Ethanol	1300	34	3.6 J	36 J	49 J	32 J	41 J	63 J	60 J	22
Ethyl Acetate	NA	NA	U	U	25	U	U	U	U	U
Ethylbenzene	6.4	1.0	0.32 J	4.9 J	6.3 J	4.6 J	5.3 J	110	17 J	3.2 J
4-Ethyl Toluene	NA	NA	U	6.5	4.7	6.1	6.7	7.4	7.2	2.0
n-Heptane	18	4.5	0.15	36	20	74	85	440	690	8.6
Hexane	14	2.2	0.61	70	35	150	120	630	960	17
Isopropanol	NA	NA	0.35	13	36	11	10	12	13	7.3
Methylene Chloride [3]	16	1.6	U	5.1 J	29	2.3 J	1.2 J	2.0 J	2.2 J	11
4-Methyl-2-Pentanone (MIBK)	1.9	0.5	U	U	U	U	28	U	U	U
Styrene	1.4	0.5	U	1.0	20	1.2	1.1	1.2	1.2	0.15 J
Tetrachloroethene [4]	2.5	0.7	U	3.0	6.7	3.3	4.0	5.5	35	0.40
Tetrahydrofuran	0.8	0.4	U	3.1	3.5	4.1	5.7	U	5.0	22
Toluene	57	5.1	1.8 J	17	110	33	49	300	210	21
1,1,1-Trichloroethane	2.5	0.6	U	4.7 J	U	61	1.0 J	U	U	U
Trichloroethene [5]	0.5	0.4	U	1.0	4.9	1.4	0.99	1.9	57	11
Trichlorofluoromethane	12	5.1	1.4	2.4	5.2	3.7	22	U	6.2	1.4
1,1,2-Trichloro-1,2,2-Trifluoroethane	2.5	2.5	0.56	0.84	U	U	U	U	U	U
1,2,4-Trimethylbenzene	9.8	1.9	0.43	40	26	37	40	43	43	10
1,3,5-Trimethylbenzene	3.9	0.7	U	9.3	6.5	8.6	9.3	11	10	2.6
Vinyl Chloride	0.4	0.4	U	U	U	U	U	U	U	0.09 J
m/p-Xylene	11	1.0	U	17	U	17	20	250	50	11
o-Xylene	7.1	1.2	0.41 J	9.0 J	8.2	8.7 J	9.3 J	68	16 J	5.4 J

U = Not detected at concentration above analytical laboratory reporting limit. NA = Not Available.

[1] Indoor Air Upper Fence value referenced in Table C1 of the New York State Department of Health (NYSDOH) document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006.

[2] Outdoor Air Upper Fence value referenced in Table C1 of the NYSDOH document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006.

[3] The NYSDOH document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006 lists an air guidance value of 60 ug/m^3 for Methylene Chloride.

[4] The NYSDOH document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006 lists an air guidance value of 100 ug/m^3 for Tetrachloroethene.

[5] The NYSDOH document titled "Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006 lists an air guidance value of 5 ug/m^3 for Trichloroethene.

No NYSDOH criteria is available for soil vapor samples

J = Estimated value B = Compound also detected in associated method blank

Table 15
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

VOCs In Soil Samples Exceeding Unrestricted Use SCOs

		RI SAMPLES				REMEDIATION SAMPLES							
Contaminant	**A** Unrestricted Use SCO	**014 DAYSB-03 (12-15')**		**019 DAYMW-03 (8-12')**		**073 C - 12 (12') 03/18/10 S Bottom**		**074 C - 13 (7-10') 03/18/10 E Wall**		**088 T- 6 (18-20') 03/24/10**		**089 T- 1 (10-12') 03/24/10**	
Acetone	0.05	U		**0.065** J	**A**	0.014		U		U		U	
Xylene (mixed)	0.26	**0.36** D	**A**	U J		**0.44**	**A**	**0.5**	**A**	**0.28**	**A**	**1.8**	**A**

Values Are In Milligrams Per Kilogram (mg/kg) Or Parts Per Million (ppm)

Soil Cleanup Objectives (SCOs) Are As Referenced In 6 NYCRR Part 375-6, Remedial Program Soil Cleanup Objectives, Dated December 14, 2006

Volatile Organic Compounds (VOCs)

D = Diluted Sample

J = Estimated Value

U = Not Detected

Remedial Investigation (RI)

A = Exceeds Unrestricted Use SCO

Table 16
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Metals In Soil Samples Exceeding Unrestricted Use SCOs

		PHASE II SAMPLES				RI SAMPLES											
Contaminant	**A** Unrestricted Use SCO	**TB-21 (0-4') 8/25/00**		**TB-24 (0-4') 8/25/00**		**011 DAYSB-13 (0-4')**		**018 DAYSB-05 (4-8')**		**022 DAYSB-18 (4-8')**		**024 DAYSB-12 (4-8')**		**025 DAYSB-21 (4-8')**		**026 DAYSB-20 (12-15')**	
Arsenic	13	**13.1**	**A**	**17.2**	**A**	6.2 J		10.8 J		**15.3 J**	**A**	8.4 *		7.2 *		4.4 *	
Copper	50	NT		NT		23.4 J		33.3 J		**141 J**	**A**	**76.7** N	**A**	7.5 N		3.9 BN	
Lead	63	9.68		9.49		**93.5** J	**A**	**147** J	**A**	59.3 J		**163** *J	**A**	12.2 *J		5.6 *J	
Total Mercury	0.18	U		U		**0.25** J	**A**	**0.3** J	**A**	U		**0.42**	**A**	0.017 B		U	
Zinc	109	NT		NT		71.4 J		**133** J	**A**	89.1 J		**152** N*J	**A**	**130** N*J	**A**	**205** N*J	**A**

Values Are In Milligrams Per Kilogram (mg/kg) Or Parts Per Million (ppm)

Soil Cleanup Objectives (SCOs) Are As Referenced In 6 NYCRR Part 375-6, Remedial Program Soil Cleanup Objectives, Dated December 14, 2006

B = Trace Concentration Below Reporting Limit And Equal To Or Above Detection Limit

J = Estimated Value

N = Matrix Spike Recovery Falls Outside Control Limit

U = Not Detected

* = RPD Duplicate Analyses Outside Control Limit

Phase II Study (P II)

Remedial Investigation (RI)

A = Exceeds Unrestricted Use SCO

NT = Not Tested

Table 17
205-405 Mt. Hope Avenue, Rochester, New York
NYSDEC Site #C828125

Pesticides And PCBs in Soil Samples Exceeding Unrestricted Use SCOs

		RI SAMPLE		REMEDIATION SAMPLES															
Contaminant	**A** Unrestricted Use SCO	**018 DAYSB-05 (4-8')**		**022 / P-4 08/03/09**		**024 / P-6 08/03/09**		**026 / P-8 08/03/09**		**027 / P-9 08/03/09**		**028 / P-10 08/03/09**		**029 / P-11 08/03/09**		**030 / P-12 08/03/09**		**032 / P-14 08/03/09**	
4,4'-DDT	0.0033	**0.0048**	**A**	NT		NT		NT		NT		NT		NT		NT		NT	
Dieldrin	0.005	**0.0091**	**A**	NT		NT		NT		NT		NT		NT		NT		NT	
Polychlorinated biphenyls	0.1	U		**0.29**	**A**	**0.17**	**A**	**0.27**	**A**	**0.206**	**A**	**0.34 P**	**A**	**0.78 P**	**A**	**0.23**	**A**	**0.78**	**A**

Values Are In Milligrams Per Kilogram (mg/kg) Or Parts Per Million (ppm)

Soil Cleanup Objectives (SCOs) are as referenced in 6 NYCRR Part 375-6, Remedial Program Soil Cleanup Objectives, dated December 14, 2006

U = Not Detected

P = Lower Of Two Values Reported From Primary And Confirmation Analyses When > 25% Difference Detected

Remedial Investigation (RI)

A = Exceeds Unrestricted Use SCO

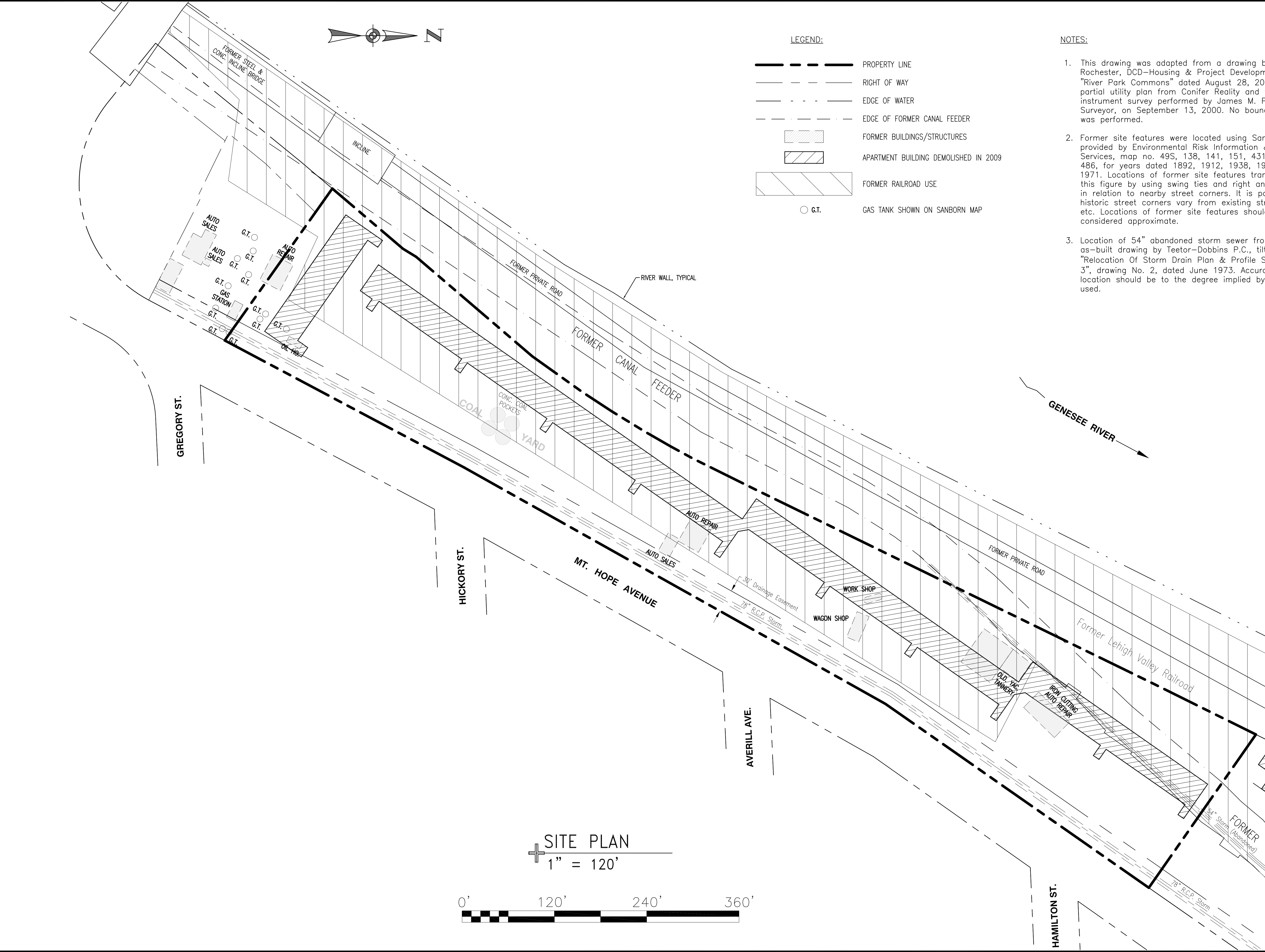
NT - Not Tested

FIGURES

Document Path: \\DAYGIS\GIS_Data\GIS Mapping\Erie Harbor\4155R-09ErieHa\SMP\4155R-1-SMP- Location Plan.mxd

Last Date Saved: 05 Jan 2018

Date 01-05-2018	**DAY ENGINEERING, PC.** **Environmental Engineering Consultants** **Rochester, New York 14606** **New York, New York 10170**	Project Title 205-405 MT. HOPE AVENUE ROCHESTER, NEW YORK BROWNFIELD CLEANUP PROGRAM	Project No. 4155R-09 FIGURE 1
Drawn By CPS			
Scale AS NOTED		Drawing Title Project Locus Map	



LEGEND:

- PROPERTY LINE
- RIGHT OF WAY
- EDGE OF WATER
- EDGE OF FORMER CANAL FEEDER
- FORMER BUILDINGS/STRUCTURES
- APARTMENT BUILDING DEMOLISHED IN 2009
- FORMER RAILROAD USE
- G.T. GAS TANK SHOWN ON SANBORN MAP

NOTES:

1. This drawing was adapted from a drawing by the City of Rochester, DCD—Housing & Project Development, titled "River Park Commons" dated August 28, 2000, untitled partial utility plan from Conifer Realty and from an instrument survey performed by James M. Parker, Land Surveyor, on September 13, 2000. No boundary survey was performed.
2. Former site features were located using Sanborn Maps provided by Environmental Risk Information & Imaging Services, map no. 49S, 138, 141, 151, 431, 432 and 486, for years dated 1892, 1912, 1938, 1950, and 1971. Locations of former site features transferred to this figure by using swing ties and right angle distances in relation to nearby street corners. It is possible that historic street corners vary from existing street corners, etc. Locations of former site features should be considered approximate.
3. Location of 54" abandoned storm sewer from an as—built drawing by Teetor—Dobbins P.C., titled "Relocation Of Storm Drain Plan & Profile Sheet 2 of 3", drawing No. 2, dated June 1973. Accuracy of location should be to the degree implied by the method used.

DATE	5-2010
DATE DRAWN	5-3-2010
DATE ISSUED	5-21-2010
FIELD VERIFIED BY	JAD
DRAWN BY	RJM
SCALE	As Noted

DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

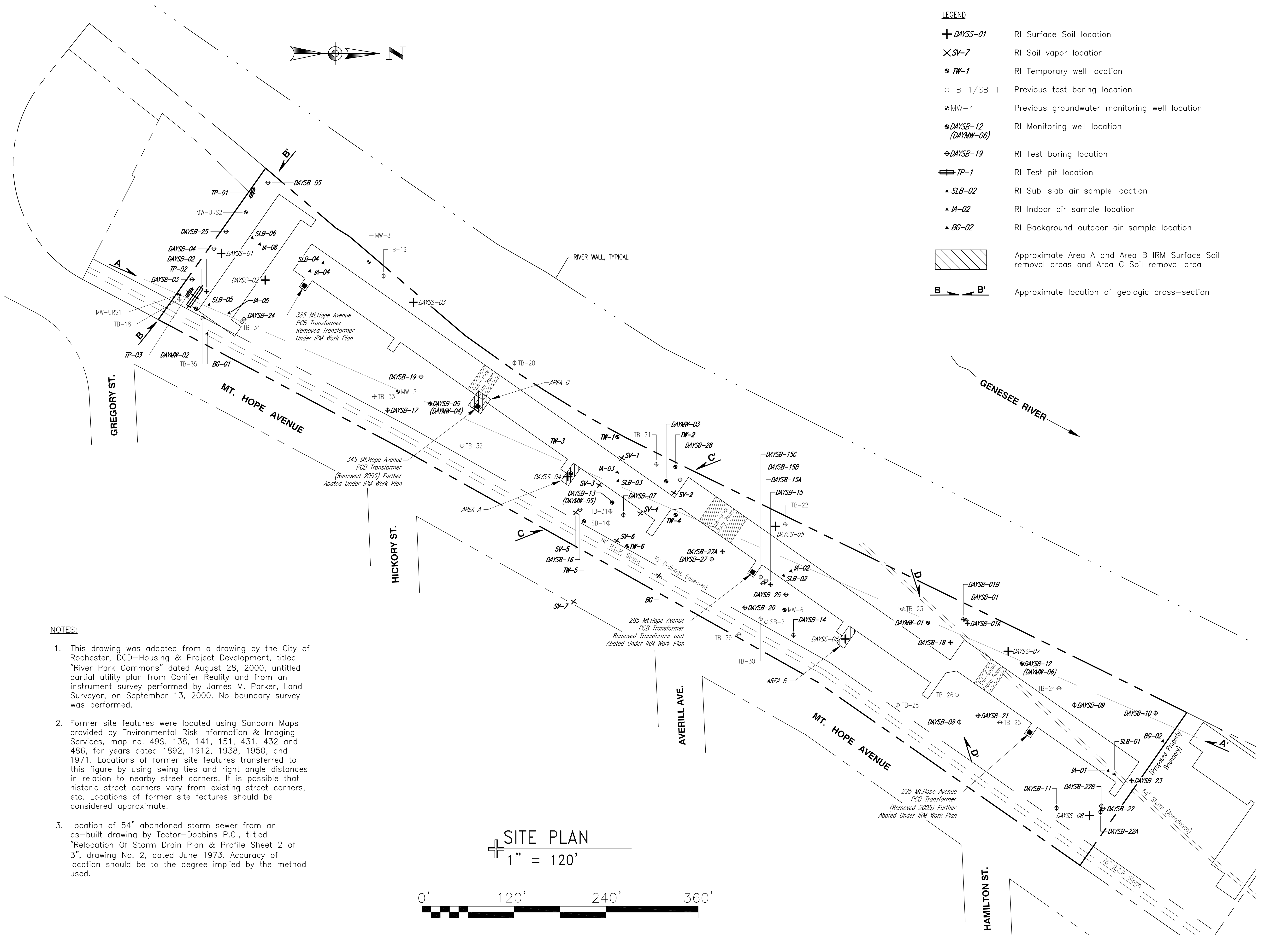
PROJECT TITLE
205-405 MT. HOPE AVENUE ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Site Plan Depicting Select Historical Uses

PROJECT NO.
4155R-09

FIGURE 2



NOTES:

1. This drawing was adapted from a drawing by the City of Rochester, DCD–Housing & Project Development, titled "River Park Commons" dated August 28, 2000, untitled partial utility plan from Conifer Reality and from an instrument survey performed by James M. Parker, Land Surveyor, on September 13, 2000. No boundary survey was performed.

2. Former site features were located using Sanborn Maps provided by Environmental Risk Information & Imaging Services, map no. 49S, 138, 141, 151, 431, 432 and 486, for years dated 1892, 1912, 1938, 1950, and 1971. Locations of former site features transferred to this figure by using swing ties and right angle distances in relation to nearby street corners. It is possible that historic street corners vary from existing street corners, etc. Locations of former site features should be considered approximate.

3. Location of 54" abandoned storm sewer from an as-built drawing by Teetor–Dobbins P.C., titled "Relocation Of Storm Drain Plan & Profile Sheet 2 of 3", drawing No. 2, dated June 1973. Accuracy of location should be to the degree implied by the method used.

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Ref1:
Ref2:
Ref3:

DATE	DATE DRAWN	DATE ISSUED
5-2010	5-5-2010	5-21-2010

FIELD VERIFIED BY	DRAWN BY	SCALE
JAD	RJM	As Noted

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

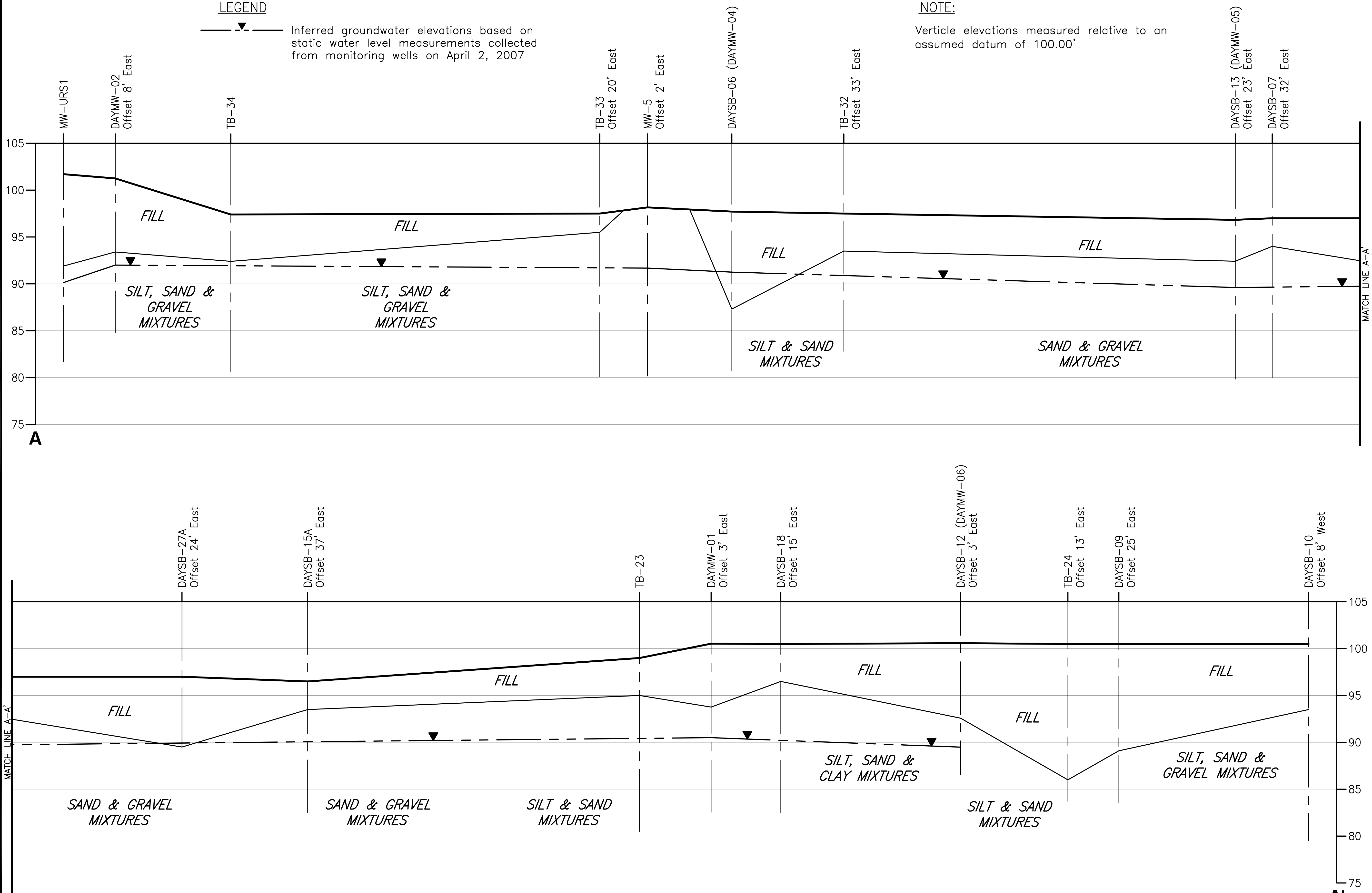
PROJECT TITLE
205-405 MT. HOPE AVENUE ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Site Plan With Select Test Locations

PROJECT NO.
4155R-09

FIGURE 3



GEOLOGIC CROSS-SECTION A-A'
1" = 50' Horizontal
1" = 10' Vertical

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Ref2:
Ref3:

Xerox432AnsiB-2: 11 x 17
Layout Name: Section A-A'
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DATE 5-2010	DATE DRAWN 5-5-2010	DATE ISSUED 5-21-2010
FIELD VERIFIED BY JAD	DRAWN BY RJM	SCALE As Noted

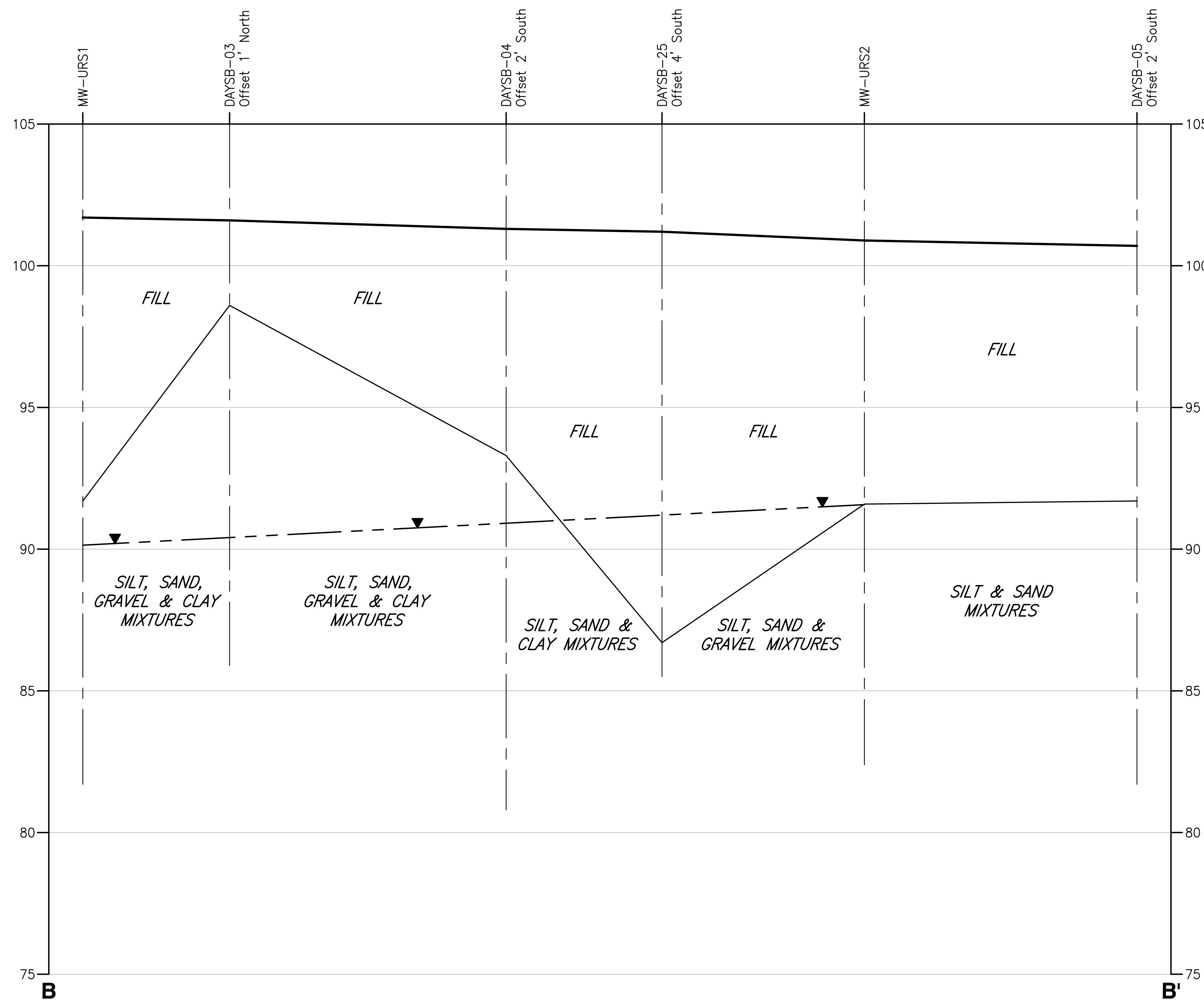
day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

PROJECT TITLE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK
BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Geologic Cross-Section A-A'

PROJECT NO.
4155R-09

FIGURE 4



GEOLOGIC CROSS-SECTION B-B'

1" = 20' Horizontal
1" = 4' Vertical

LEGEND

Inferred groundwater elevations based on static water level measurements collected from monitoring wells on April 2, 2007

NOTE:

Verticle elevations measured relative to an assumed datum of 100.00'

FIELD VERIFIED BY: JAD | DATE: 5-2010
DRAWN BY: RJM | DATE DRAWN: 5-5-2010
SCALE: As Noted | DATE ISSUED: 5-21-2010

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

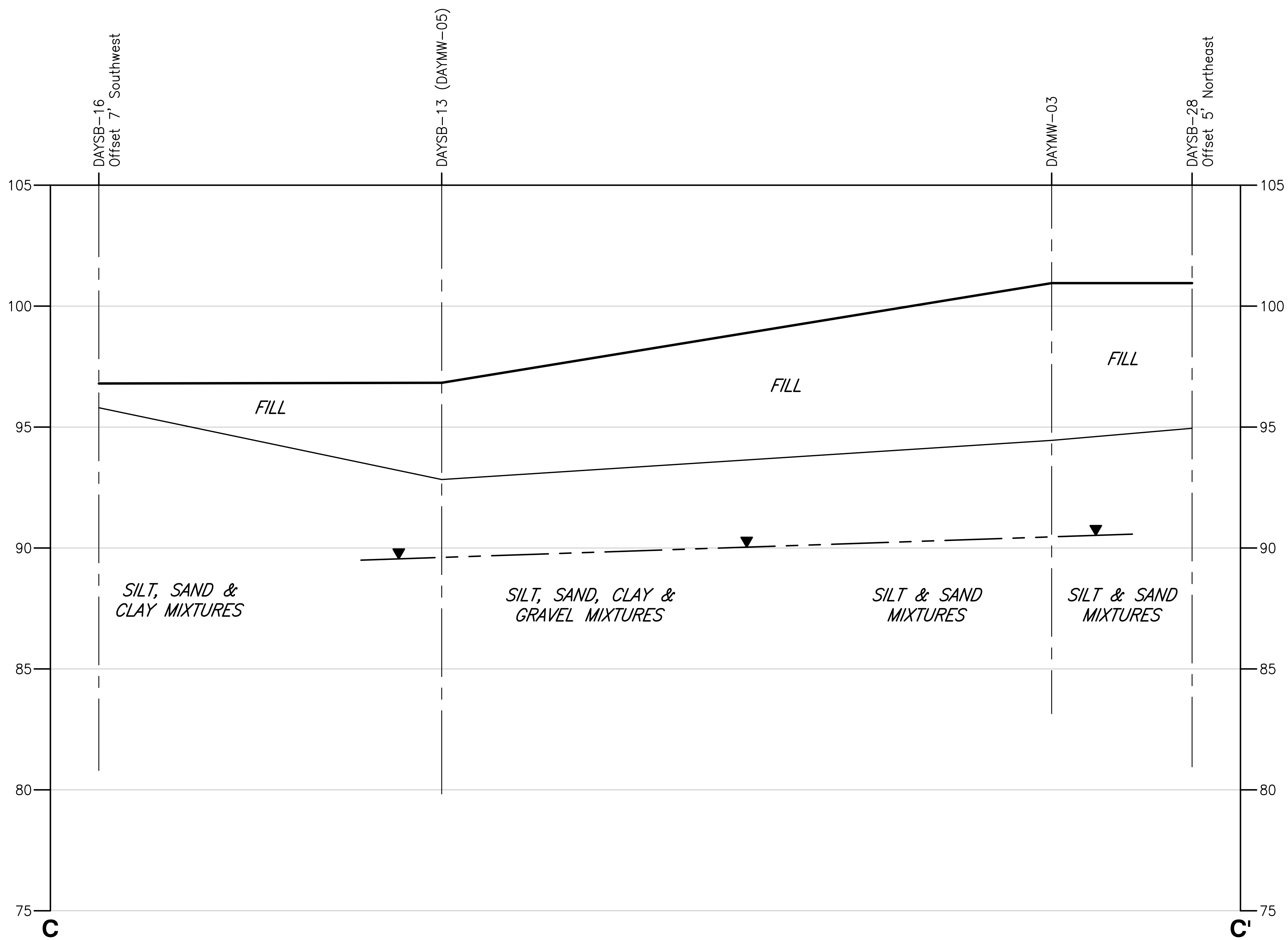
PROJECT TITLE: 205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE: Geologic Cross-Section B-B'

PROJECT NO. 4155R-09

FIGURE 5



GEOLOGIC CROSS-SECTION C-C'

1" = 15' Horizontal

1" = 5' Vertical

LEGEND

Inferred groundwater elevations based on static water level measurements collected from monitoring wells on April 2, 2007

NOTE:

Verticle elevations measured relative to an assumed datum of 100.00'

FIELD VERIFIED BY: JAD	DATE: 5-2010
DRAWN BY: RJM	DATE DRAWN: 5-5-2010
SCALE: As Noted	DATE ISSUED: 5-21-2010

day

DAY ENVIRONMENTAL, INC.
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ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

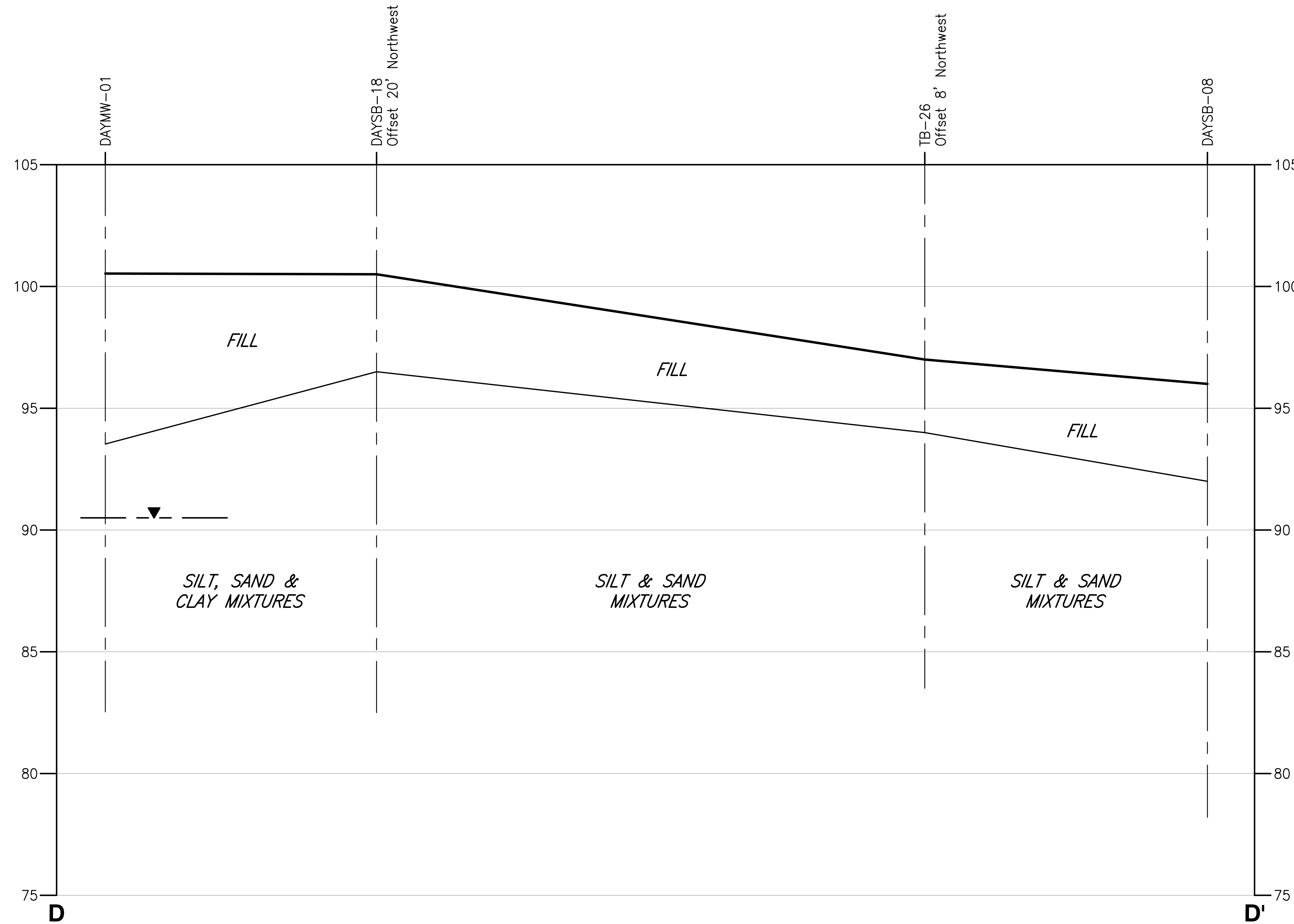
PROJECT TITLE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Geologic Cross-Section C-C'

PROJECT NO.
4155R-09

FIGURE 6



LEGEND

Inferred groundwater elevations based on static water level measurements collected from monitoring wells on April 2, 2007

NOTE:

Verticle elevations measured relative to an assumed datum of 100.00'

GEOLOGIC CROSS-SECTION D-D'
1" = 15' Horizontal
1" = 5' Vertical

FIELD VERIFIED BY: JAD
DATE: 5-2010
DRAWN BY: RJM
DATE DRAWN: 5-5-2010
SCALE: As Noted
DATE ISSUED: 5-21-2010

day
DAY ENVIRONMENTAL, INC.
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ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

PROJECT TITLE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK
BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Geologic Cross-Section D-D'

PROJECT NO.
4155R-09

FIGURE 7

NOTES:

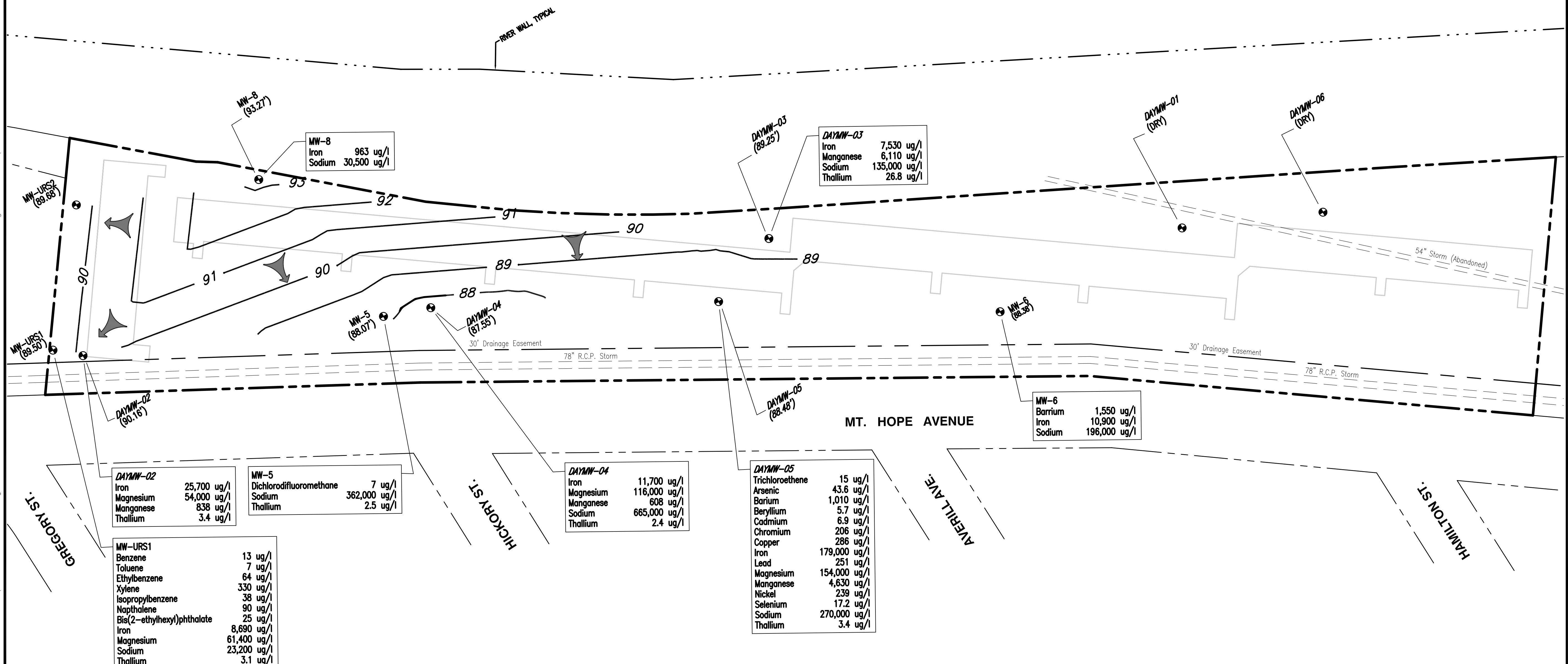
1. This drawing was adapted from a drawing by the City of Rochester, DCD–Housing & Project Development, titled "River Park Commons" dated August 28, 2000, untitled partial utility plan from Conifer Reality and from an instrument survey performed by James M. Parker, Land Surveyor, on October 2006. No boundary survey was performed.
2. Detected concentrations of constituents that exceed NYSDEC TOGS 1.1.1 Groundwater Standard or Guidance values are provided as shown.
3. Metals concentrations in groundwater sample from DAYMW–05 appear elevated due to high turbidity of sample.
4. Groundwater samples could not be obtained from monitoring wells DAYMW–01 or DAYMW–06 during the September 2006 sampling event.

LEGEND:

—90— GROUNDWATER CONTOUR

MW-8 (93.27') MONITORING WELL WITH GROUND WATER ELEVATION OBTAINED ON SEPTEMBER 5, 2006

— — — PROPERTY LINE



SITE PLAN

1" = 100'

0' 100' 200' 300'

Ref1:
Ref2:
Ref3:

Xerox432AnsiB-2; 11 x 17
Layout Name: Layout1
Pen Setting File: 800psFullcolor.ctb

Time Plotted: Friday, May 21, 2010 8:55:37 AM
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FIELD VERIFIED BY: JAD	DATE: 5-2010
DRAWN BY: RJM	DATE DRAWN: 5-5-2010
SCALE: As Noted	DATE ISSUED: 5-21-2010

day DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

PROJECT TITLE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Potentiometric Groundwater Contour Map For September 5, 2006

PROJECT NO.
4155R-09

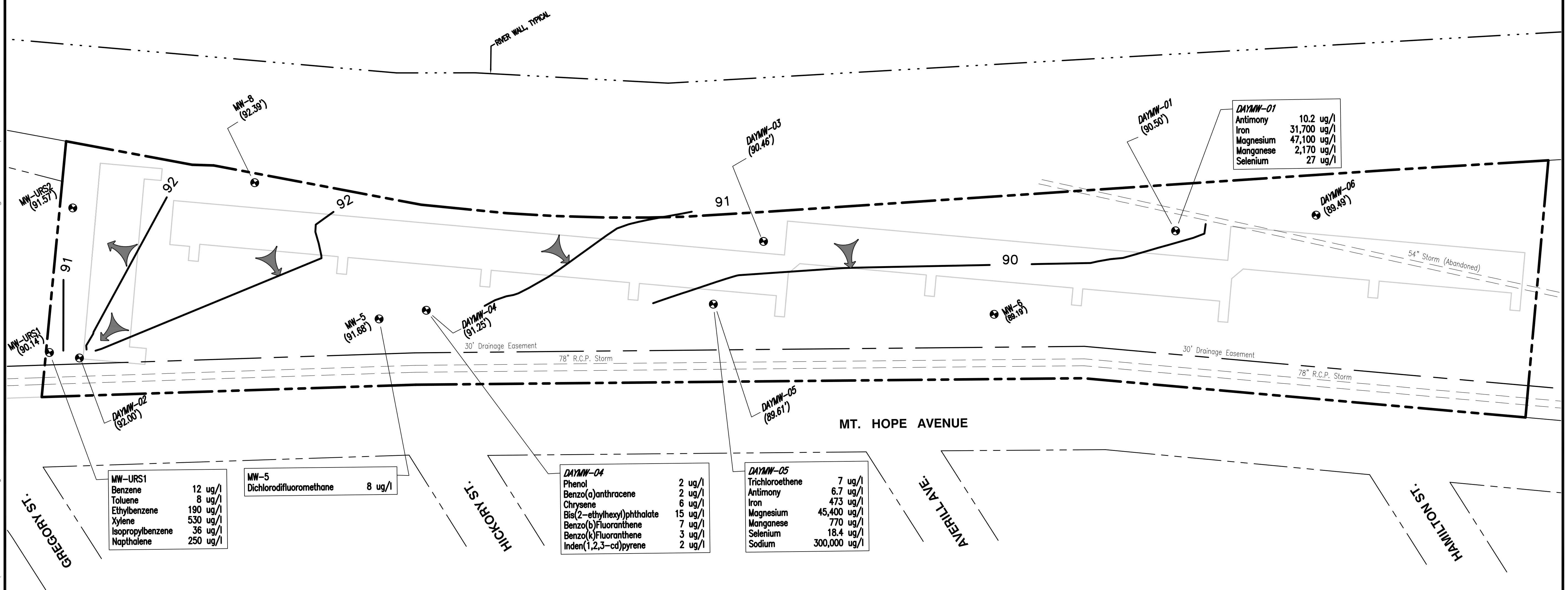
FIGURE 8

NOTES:

1. This drawing was adapted from a drawing by the City of Rochester, DCD–Housing & Project Development, titled "River Park Commons" dated August 28, 2000, untitled partial utility plan from Conifer Reality and from an instrument survey performed by James M. Parker, Land Surveyor, on October 2006. No boundary survey was performed.
2. Detected concentrations of constituents that exceed NYSDEC TOGS 1.1.1 Groundwater Standard or Guidance values are provided as shown.
3. Groundwater sample could not be obtained from monitoring well DAYMW–06 during the April 2007 sampling event.

LEGEND:

- —90— GROUNDWATER CONTOUR
- MW–8 (92.38') MONITORING WELL WITH GROUND WATER ELEVATION OBTAINED ON APRIL 2, 2007
- — — — PROPERTY LINE



SITE PLAN
1" = 100'

0' 100' 200' 300'

FIELD VERIFIED BY: JAD	DRAWN BY: RJM	SCALE: As Noted
DATE: 5-2010	DATE DRAWN: 5-5-2010	DATE ISSUED: 5-21-2010

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

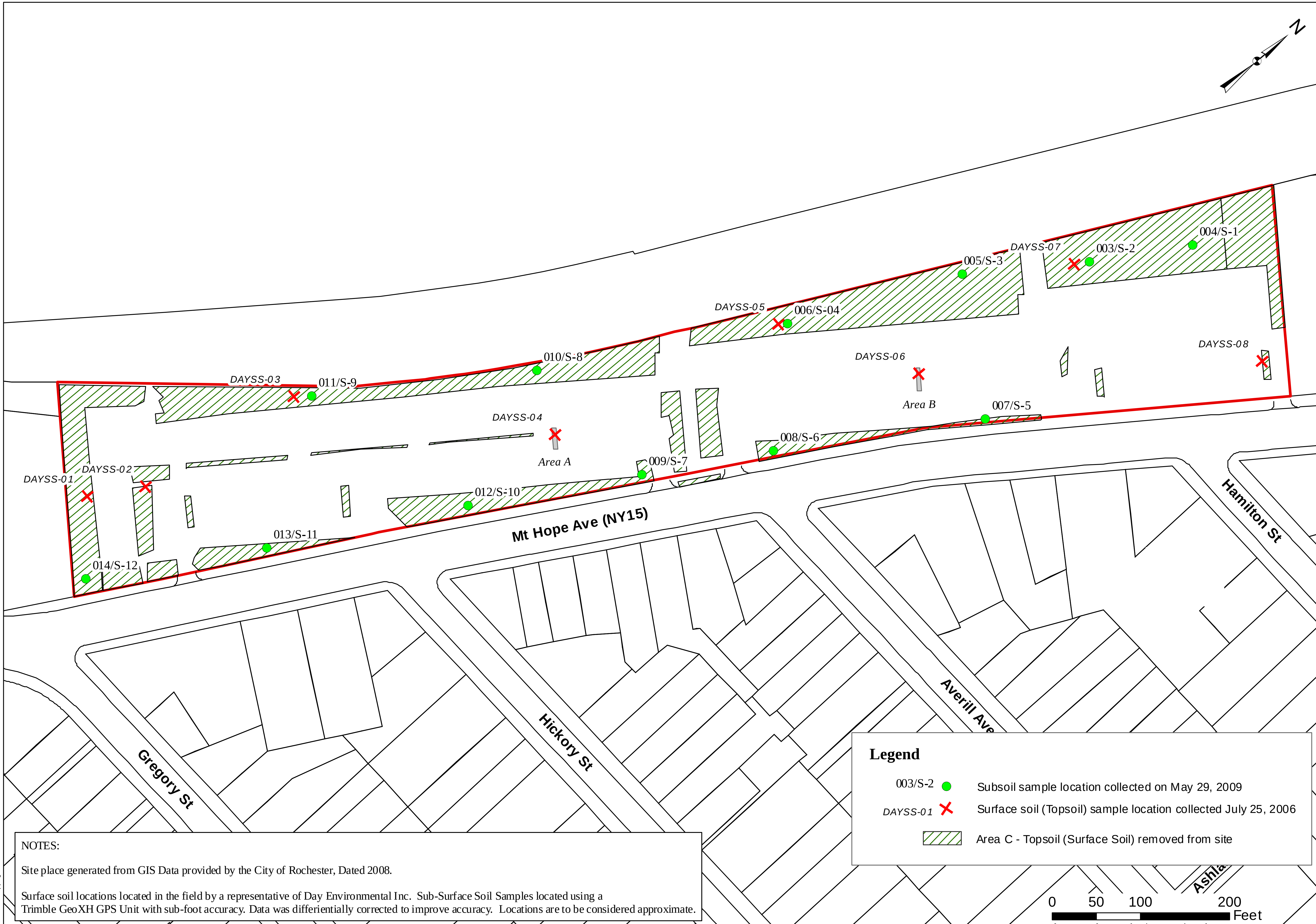
PROJECT TITLE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Potentiometric Groundwater Contour Map For April 2, 2007

PROJECT NO.
4155R-09

FIGURE 9



NOTES:

Site place generated from GIS Data provided by the City of Rochester, Dated 2008.

Surface soil locations located in the field by a representative of Day Environmental Inc. Sub-Surface Soil Samples located using a Trimble GeoXH GPS Unit with sub-foot accuracy. Data was differientially corrected to improve accuracy. Locations are to be considered approximate.

DESIGNED BY: JAD	DATE: 05-07-2010
DRAWN BY: CPS	DATE DRAWN: 05-07-2010
SCALE: AS NOTED	DATE ISSUED: 05-07-2010

DAY ENVIRONMENTAL, INC.
Environmental Consultants
Rochester, New York 14614-1008
New York, New York 10016-0710

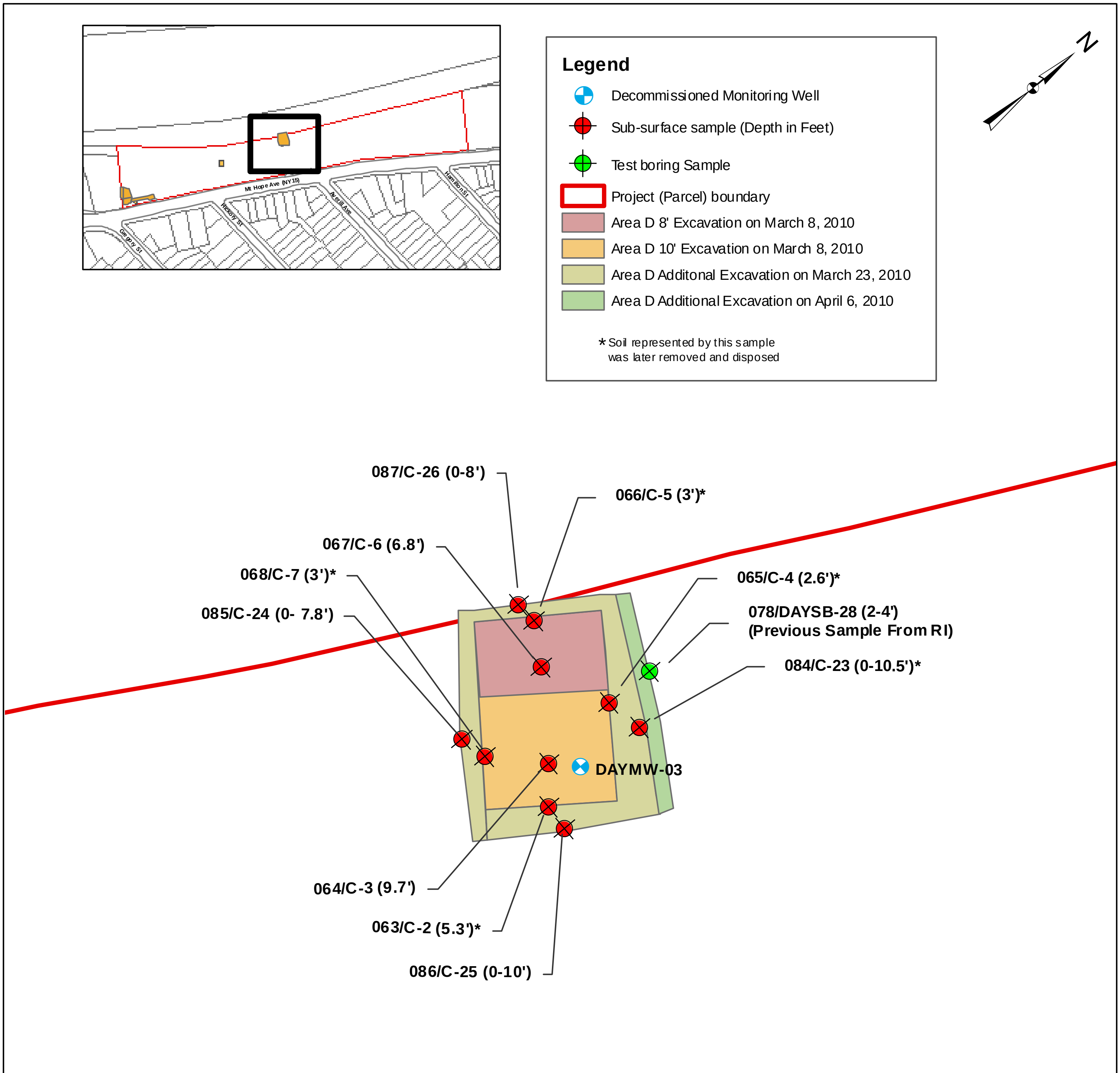
Project Title: 205-405 MT HOPE AVENUE
ROCHESTER, NEW YORK
BROWNFIELD CLEANUP PROGRAM

Drawing Title: Site Plan with Surface Soil (Topsoil) and Subsoil Sample Locations

Project No. 4155R-09

FIGURE 10

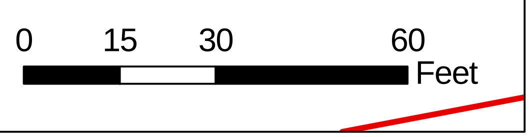
C:\GIS\GIS Mapping\4155R-09ErieHa\4155R-15



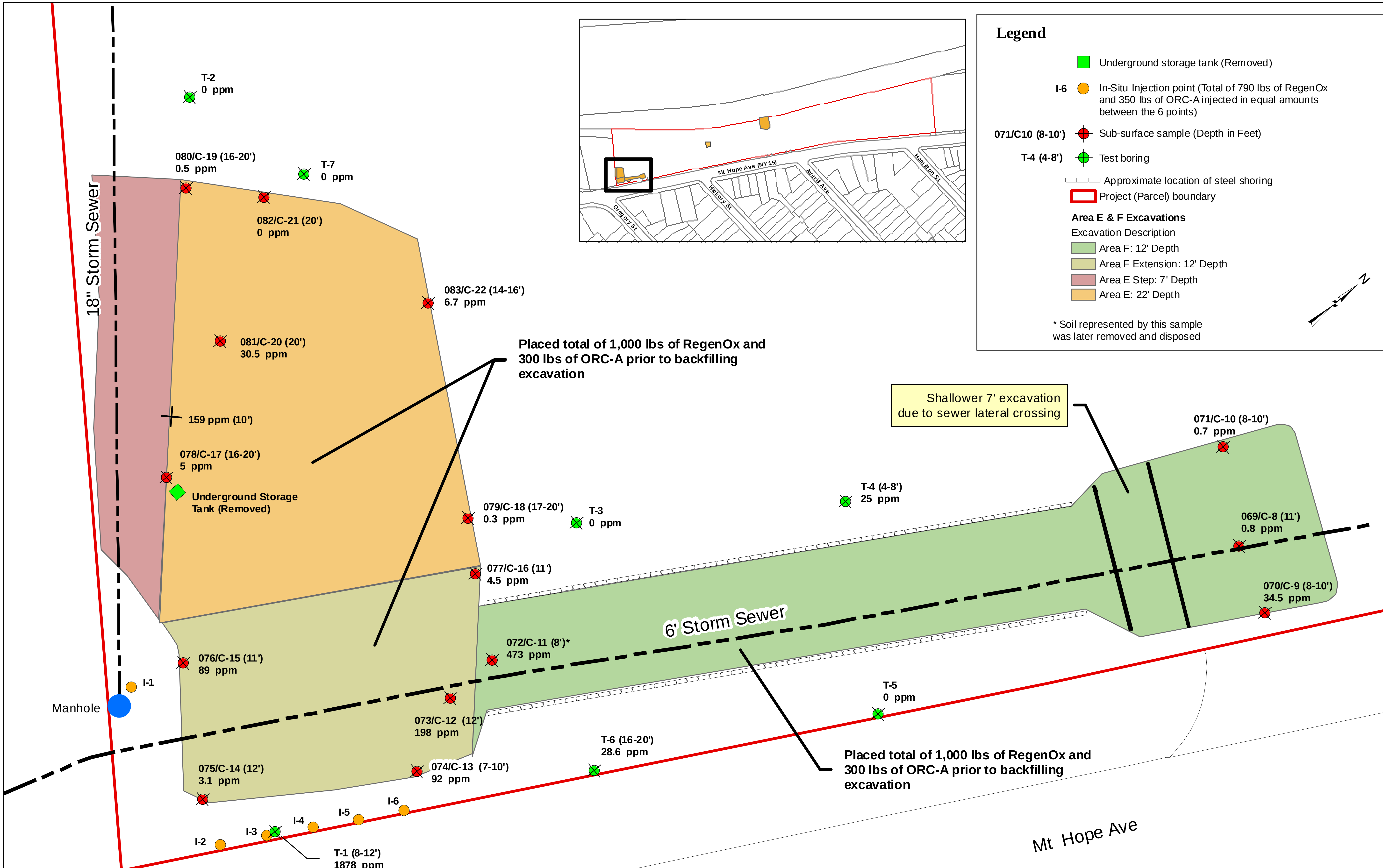
NOTES:

Site plan generated from GIS Data provided by the City of Rochester, Dated 2008.

Sub-Surface samples, test pits, test boring and additional features located in the field by a representative of Day Environmental Inc. using a Trimble GeoXH GPS Unit with sub-foot accuracy. Data was differientially corrected to improve accuracy. Locations are to be considered approximate.



Date 06-18-2010 Drawn By CPS Scale AS NOTED	day DAY ENVIRONMENTAL, INC. **Environmental Consultants** **Rochester, New York 14614-1008** **New York, New York 10016-0701**	Project Title 205-405 MT HOPE AVENUE ROCHESTER, NEW YORK BROWNFIELD CLEANUP PROGRAM Drawing Title Excavation and Sampling Locations for Fill Removal Area D	Project No. 4155R-09 FIGURE 11



NOTES:

Site plan generated from GIS Data provided by the City of Rochester, Dated 2008.

Sub-Surface samples, test pits, test boring and additional features located in the field by a representative of Day Environmental Inc. using a Trimble GeoXH GPS Unit with sub-foot accuracy. Data was differientially corrected to improve accuracy. Locations are to be considered approximate.

DATE	06-07-2010
DATE DRAWN	05-07-2010
DATE ISSUED	06-17-2010
DESIGNED BY	JAD
DRAWN BY	CPS
SCALE	AS NOTED

day
DAY ENVIRONMENTAL, INC.
Environmental Consultants
Rochester, New York 14614-1008
New York, New York 10016-0710

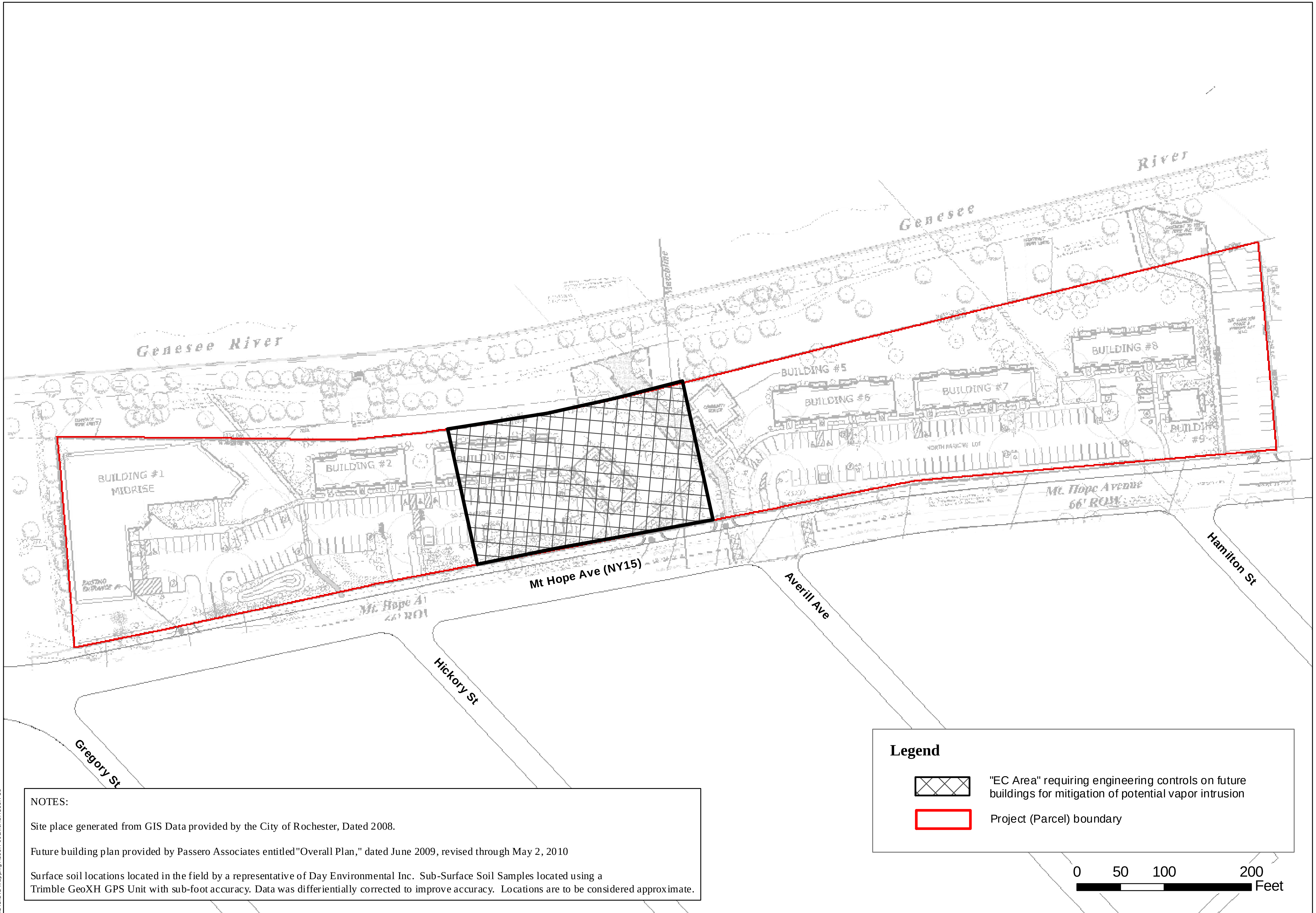
Project Title
205-405 MT HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

Drawing Title
Excavation and Sampling Plan for Soil Removal Area E, Area F and Area F Extension, and location of In-Situ Injection Points

Project No.
4155R-09

FIGURE 12



NOTES:

Site place generated from GIS Data provided by the City of Rochester, Dated 2008.

Future building plan provided by Passero Associates entitled "Overall Plan," dated June 2009, revised through May 2, 2010

Surface soil locations located in the field by a representative of Day Environmental Inc. Sub-Surface Soil Samples located using a Trimble GeoXH GPS Unit with sub-foot accuracy. Data was differientially corrected to improve accuracy. Locations are to be considered approximate.

Legend

- "EC Area" requiring engineering controls on future buildings for mitigation of potential vapor intrusion
- Project (Parcel) boundary

DATE	DATE DRAWN	DATE ISSUED
05-07-2010	05-07-2010	05-07-2010

DESIGNED BY	DRAWN BY	SCALE
JAD	CPS	AS NOTED

DAY ENVIRONMENTAL, INC.
Environmental Consultants
Rochester, New York 14614-1008
New York, New York 10016-0710

Project Title
205-405 MT HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

Drawing Title
Location of Area Requiring Engineering Controls on Future Buildings

Project No.
4155R-09

FIGURE 13

C:\GIS\GIS Mapping\4155R-09\EntHa\4155R-18

Ref1:
Ref2:
Ref3:

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Layout Name: Layout1
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Time Plotted: Friday, May 21, 2010 8:58:00 AM
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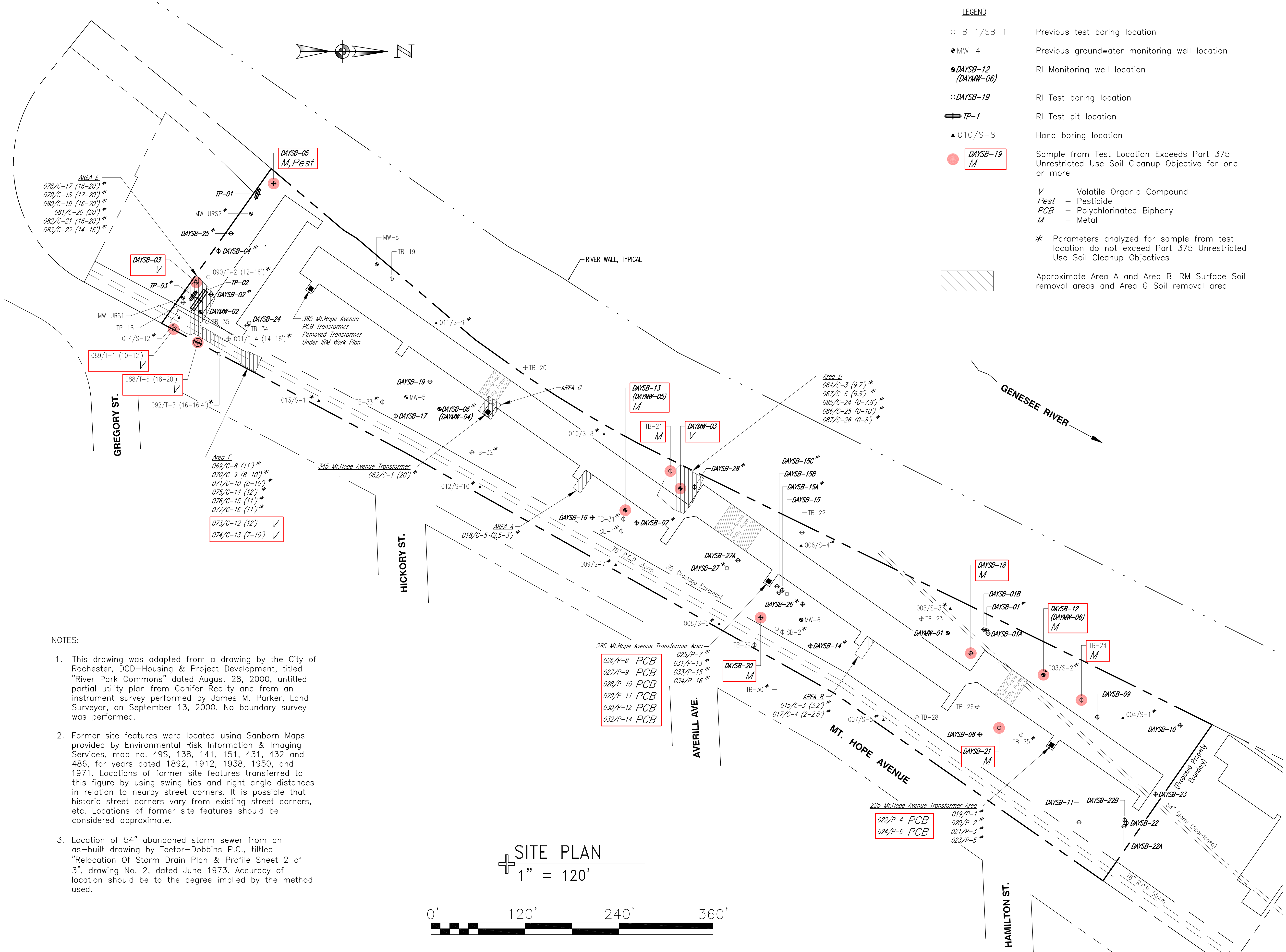


LEGEND

⊕ TB-1/SB-1	Previous test boring location
MW-4	Previous groundwater monitoring well location
DAYSB-12 (DAYMW-06)	RI Monitoring well location
⊕ DAYSB-19	RI Test boring location
TP-1	RI Test pit location
▲ 010/S-8	Hand boring location
DAYSB-19 M	Sample from Test Location Exceeds Part 375 Unrestricted Use Soil Cleanup Objective for one or more

V – Volatile Organic Compound
Pest – Pesticide
PCB – Polychlorinated Biphenyl
M – Metal

* Parameters analyzed for sample from test location do not exceed Part 375 Unrestricted Use Soil Cleanup Objectives

Approximate Area A and Area B IRM Surface Soil removal areas and Area G Soil removal area

NOTES:

1. This drawing was adapted from a drawing by the City of Rochester, DCD–Housing & Project Development, titled "River Park Commons" dated August 28, 2000, untitled partial utility plan from Conifer Realty and from an instrument survey performed by James M. Parker, Land Surveyor, on September 13, 2000. No boundary survey was performed.

2. Former site features were located using Sanborn Maps provided by Environmental Risk Information & Imaging Services, map no. 49S, 138, 141, 151, 431, 432 and 486, for years dated 1892, 1912, 1938, 1950, and 1971. Locations of former site features transferred to this figure by using swing ties and right angle distances in relation to nearby street corners. It is possible that historic street corners vary from existing street corners, etc. Locations of former site features should be considered approximate.

3. Location of 54" abandoned storm sewer from an as-built drawing by Teetor-Dobbins P.C., titled "Relocation Of Storm Drain Plan & Profile Sheet 2 of 3", drawing No. 2, dated June 1973. Accuracy of location should be to the degree implied by the method used.

SITE PLAN
1" = 120'

0' 120' 240' 360'

DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

DATE	5-2010
DATE DRAWN	5-5-2010
DATE ISSUED	5-21-2010
FIELD VERIFIED BY	JAD
DRAWN BY	RJM
SCALE	As Noted

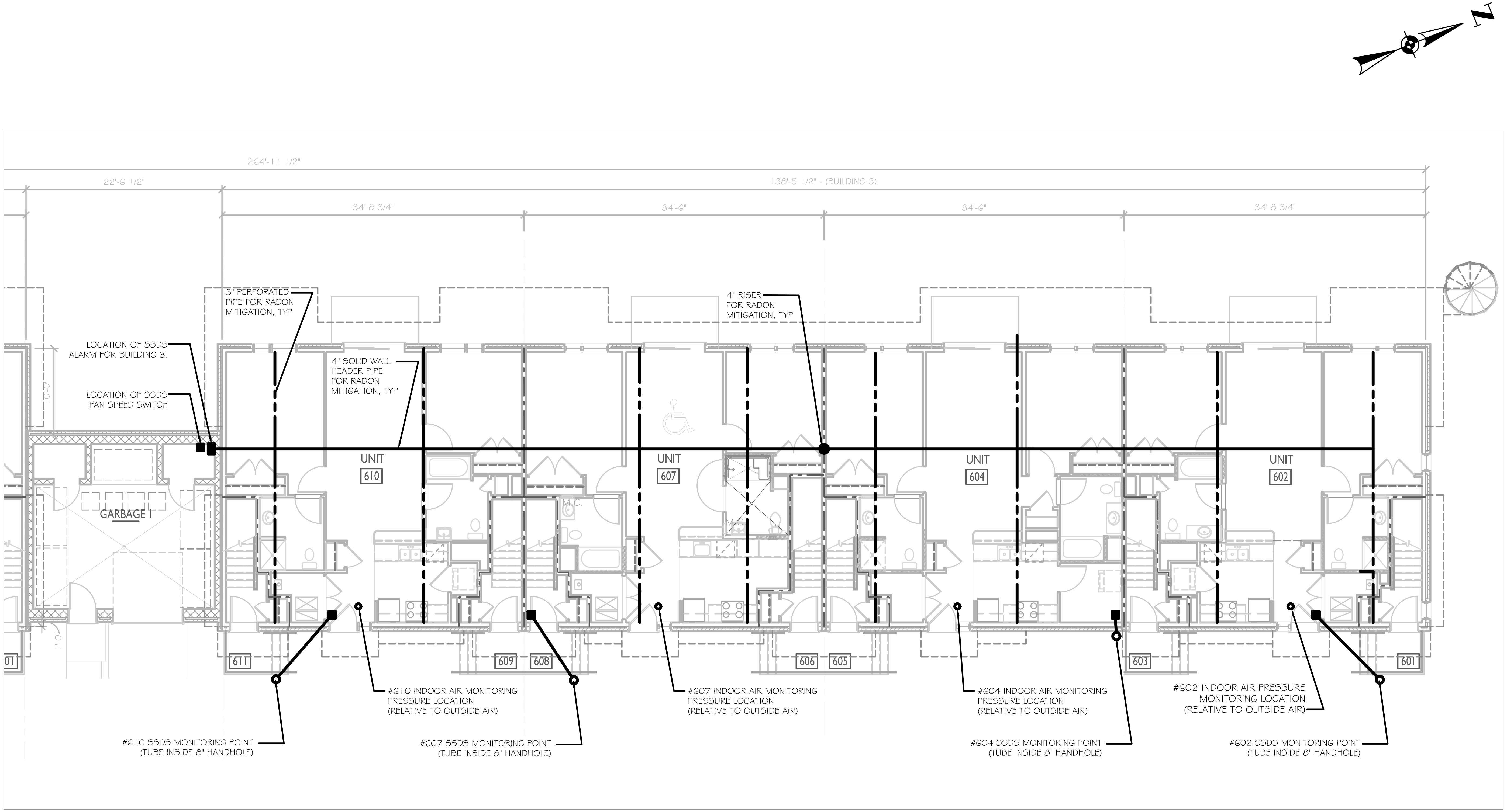
PROJECT TITLE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Cumulative Test Location Plan Depicting Sample Locations Exceeding/Not Exceeding Part 375 Unrestricted Use Soil Cleanup Objectives

PROJECT NO.
4155R-09

FIGURE 14



BUILDING #3 SSDS COMPONENTS

Not To Scale

Ref1:
Ref2:
Ref3:

Xerox432AnsiB-2; 11 x 17
Layout Name: Layout2
Pen Setting File: Conifer Grayscale.ctb

Time Plotted: Thursday, January 11, 2018 7:16:07 AM
File Name: P:\Drawings\Conifer\4155R-09 Revised SMP\Bldg 3 SSDS Components.dwg

DATE	1-2018
DATE DRAWN	1-10-2018
DATE ISSUED	1-11-2018
DESIGNED BY	BFK
DRAWN BY	RJM
SCALE	Not To Scale

day

DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14606
NEW YORK, NEW YORK 10016-0710

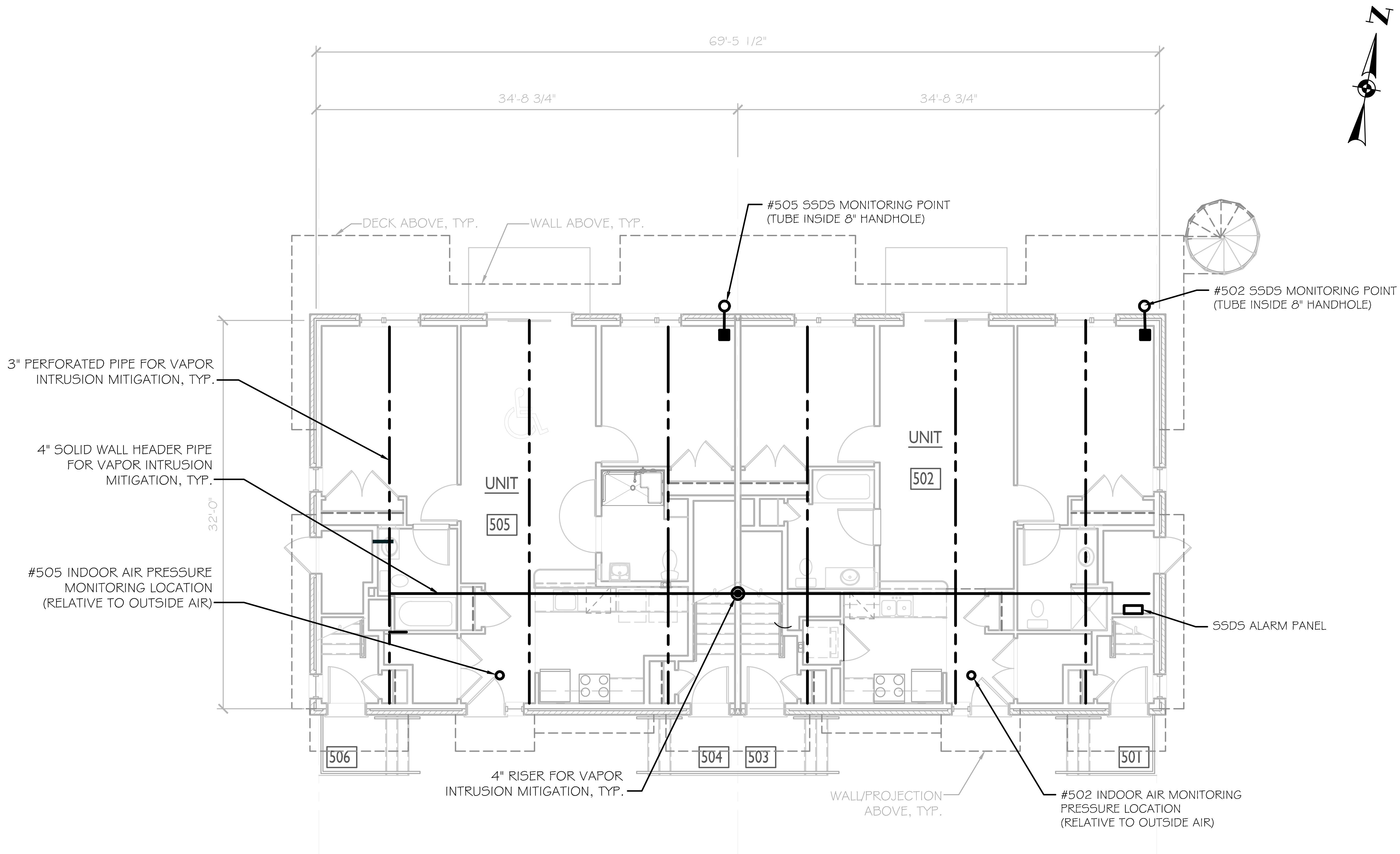
PROJECT TITLE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Building #3 SSDS Components

PROJECT NO.
4155R-09

FIGURE 15



BUILDING #4
SSDS COMPONENTS
1/8" = 1'-0"

DATE 1-2018
DATE DRAWN 1-10-2018
DATE ISSUED 1-10-2018
DESIGNED BY BFK
DRAWN BY RJM
SCALE As Noted

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14606
NEW YORK, NEW YORK 10016-0710

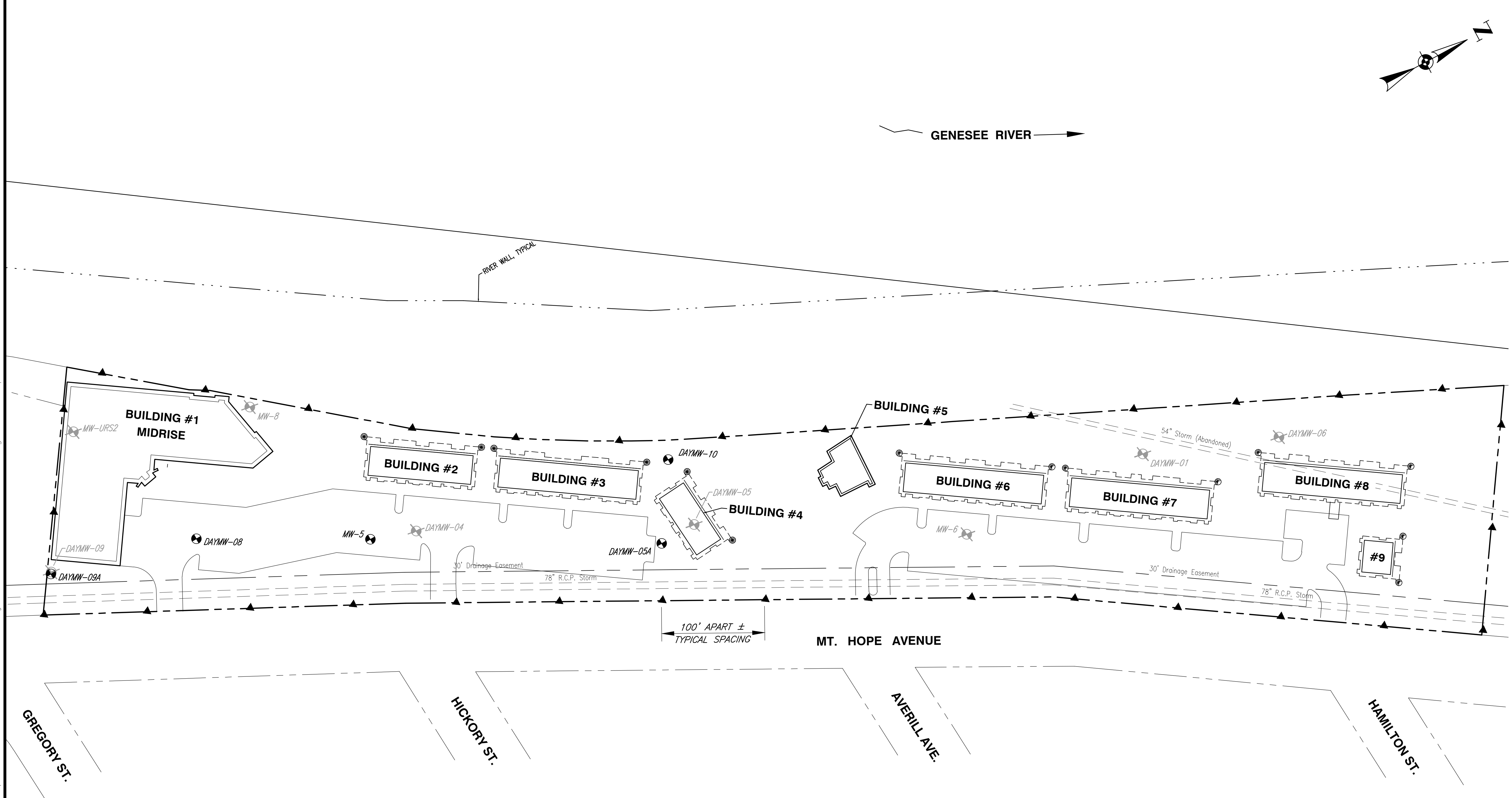
PROJECT TITLE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Building #4 SSDS Components

PROJECT NO.
4155R-09

FIGURE 16



LEGEND:

MW-5	Existing Monitoring Well Location
DAYMW-04	Former Monitoring Well Location
▲	Tentative Community Air Monitoring Plan (CAMP) Perimeter Monitoring Station. Actual locations may vary depending on field conditions encountered.

SITE PLAN

1" = 100'

0' 100' 200' 300'

Ref1:
Ref2:
Ref3:

Xerox432AnsiB-2; 11 x 17
Layout Name: Layout1
Pen Setting File: 800psHalfScaleColor.ctb

Time Plotted: Thursday, January 11, 2018 7:31:27 AM
File Name: P:\Drawings\Conifer\4155R-09 Revised SMP\Site Plan with Revised SMP Locations.dwg

FIELD VERIFIED BY JAD	DRAWN BY RJM	SCALE As Noted
DATE 1-2018	DATE DRAWN 1-10-2018	DATE ISSUED 1-11-2018

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14606
NEW YORK, NEW YORK 10170

PROJECT TITLE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK

BROWNFIELD CLEANUP PROGRAM

DRAWING TITLE
Well Location Plan and Tentative CAMP Perimeter Monitoring Stations

PROJECT NO.
4155R-09

FIGURE 17

APPENDIX A

ENVIRONMENTAL EASEMENT

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 1st day of September, 2010, between Owner(s) Erie Harbor, LLC, having an office at 183 East Main Street, Suite 600, Rochester, County of Monroe, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 205-405 Mount Hope Avenue in the City of Rochester, County of Monroe and State of New York, known and designated on the tax map of the County Clerk of Monroe as tax map parcel numbers: Section 121.55 Block 01 Lot 59.001, being the same as that property conveyed to Grantor by deed dated October 23, 2008 and recorded in the Monroe County Clerk's Office in Instrument No. 200810240385, comprising approximately 6.016 ± acres, and hereinafter more fully described in the Land Title Survey dated May 14, 2010, last revised on June 16, 2010, and signed June 30, 2010 prepared by Passero Associates, which will be attached to the Site Management Plan. The property description (the "Controlled Property") is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of human health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: B8-0637-04-08S, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP.

(4) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(5) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(6) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(7) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.

(8) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

(9) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for raising livestock or producing animal products for human consumption, and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Regional Remediation Engineer
NYSDEC – Region 8
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, New York 14414,
Phone: 585-226-2466

or

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental

Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved b the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: C828125
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Erie Harbor, LLC, by Conifer Realty, LLC:

By: ______________________

Print Name: Timothy D. Fournier

Title: President + CEO Date: 8/18/10

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the 18th day of August, in the year 2010, before me, the undersigned, personally appeared Timothy Fournier, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Patricia Bartnicki
Notary Public - State of New York

PATRICIA BARTNICKI
Notary Public, State of New York
Reg. No. 01BA4767424
Qualified in Monroe County
Commission Expires 5/31/14

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: ______________________________
Dale A. Desnoyers, Director
Division of Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Albany)

On the 1st day of September in the year 2010, before me, the undersigned, personally appeared Dale Desnoyers, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2014

SCHEDULE "A" PROPERTY DESCRIPTION

PARCEL A

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Rochester, County of Monroe, State of New York, being more particularly bounded and described as follows:

BEGINNING at a point on the westerly right-of-way of Mt. Hope Avenue (66 feet wide), said point being located north 28 41' 31" east, 142.00 feet from the northerly end of a 170.44 foot radius junction curve formed by the northerly right-of-way of Clarissa Street and the aforesaid right-of way of Mt. Hope Avenue; thence

(1) north 60 38' 29" west a distance of 199.91 feet to a point; thence

(2) south 45 21' 31" west, a distance of 8.24 feet to a point; thence

(3) north 54 21' 30" west, a distance of 37.90 feet to a point; thence

(4) north 41 08' 15" east, a distance of 334.06 feet to a point; thence

(5) northeasterly, on a curve to the left, having a radius of 2,010.08 feet, a distance of 321.82 feet to a point; thence

(6) north 26 52' 15" east, a distance of 761.09 feet to a point; thence

(7) north 35 38' 30" east, a distance of 179.66 feet to a point; thence

(8) south 54 21' 30" east, a distance of 175.00 feet to a point; thence

(9) south 36 08' 10" west, a distance of 22.57 feet to a point; thence

(10) north 54 22' 20" west, a distance of 8.47 feet to a point; thence

(11) southwesterly on a curve to the right, having a radius of 6875.50 feet a distance of 181.92 feet to a point; thence

(12) southwesterly on a curve to the right, having a radius of 11,459.27 feet a distance of 174.00 feet to a point; thence

(13) south 54 21' 30" east a distance of 119.99 feet to a point; thence

(14) south 35 38' 30" west, along the aforesaid right of way of Mt. Hope Avenue, a distance of 234.46 feet to a point; thence

(15) south 30 00' 19" west along the aforesaid right of way of Mt. Hope Avenue, a distance of 628.07 feet to a point; thence

(16) south 28 41' 31" west along the aforesaid right of way of Mt. Hope Avenue, a distance of 321.80 feet to the first mentioned point or beginning.

PARCEL II

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Rochester, County of Monroe, State of New York being more particularly bounded and described as follows:

BEGINNING at a point on the westerly right-of-way of Mt. Hope Avenue (66 feet wide), said point being located north 28 41' 31" east, 463.80 feet; thence north 30 00' 19" east, 628.07 feet; thence north 35 38' 30" east, 234.46 feet from the northerly right-of-way of Clarissa Street and the aforesaid right-of-way of Mt. Hope Avenue; thence

(1) north 54 21' 30" west, a distance of 119.99 feet to a point; thence

(2) northeasterly, on a curve to the left, having a radius of 11,459.27 feet a distance of 174.00 feet to a point; thence

(3) northeasterly, on a curve to the left, having a radius of 6,875.50 feet, a distance of 181.92 feet to a point; thence

(4) south 54 22' 20" east, a distance of 8.47 feet to a point; thence

(5) north 36 08' 10" east, a distance of 22.57 feet to a point; thence

(6) north 54 21' 30" west, a distance of 175.00 feet to a point; thence

(7) south 35 38' 30" west, a distance of 179.66 feet to a point; thence

(8) north 26 52' 15" east, a distance of 32.79 feet to a point; thence

(9) north 35 38' 30" east, a distance of 150.25 feet to a point; thence

(10) south 54 21' 30" east, a distance of 249.90 feet to a point; thence

(11) south 35 38' 30" west, along the westerly right-of-way line of Mt. Hope Avenue, a distance of 379.07 feet to the point of beginning.

PARCEL III

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Rochester, County of Monroe, State of New York and being more particularly bounded and described as follows:

BEGINNING at a point on the westerly right-of-way of Mt. Hope Avenue (66 feet wide), said point being located north 28 41' 31" east, 111.78 feet from the northerly end of a 170.44 foot radius junction curve formed by the northerly right-of-way of Clarissa Street and the aforesaid right-of-way of Mt. Hope Avenue; thence

(1) north 54 21' 30" west, a disatance of 203.76 feet to a point; thence

(2) north 45 21' 31" east, a distance of 8.24 feet to a point; thence

(3) south 60 38' 29" east, a distance of 199.91 feet to a point; thence

(4) south 28 41' 31" west, along the aforesaid right-of-way of Mt. Hope Avenue, a distance of 30.22 feet to the first mentioned point or place of beginning.

EXCEPTING AND RESERVING ALL that tract or parcel of land, situated in the City of Rochester, County of Monroe, State of New York, and being more particularly described as follows:

BEGINNING on the westerly right-of-way of Mt. Hope Avenue, (66' row), at the Southeasterly property corner of Tax Account No. 121.55-01-058;

RUNNING THENCE south 34 degrees 59 minutes 13 seconds West, along said right-of-way, a distance of 196.00 feet to a point;

RUNNING THENCE North 55 degrees 00 minutes 47 seconds West, a distance of 242.84 feet to a point;

RUNNING THENCE North 34 degrees 59 minutes 13 seconds East, a distance of 150.25 feet to a point;

RUNNING THENCE South 55 degrees 00 minutes 47 seconds East, a distance of 249.90 feet to the point of beginning.

Receipt# 421412

CHERYL DINOLFO
COUNTY CLERK
OFFICE OF THE COUNTY CLERK
39 WEST MAIN STREET
ROCHESTER, NY
14614

Doc#: 201009090719 Pgs: 10
Ref2: TT0000001795
Type: EASEMENT AGREEMENT
Book: 10920 Pages: 219-228
Name: PEOPLE OF THE STATE OF NEW YORK
Name: ERIE HARBOR LLC
Name: ERIE HARBOR LLC
Name: PEOPLE OF THE STATE OF NEW YORK
Time: 4:07:55 PM

STATE FEE TRANSFER TAX	$	0.00
STATE FEE CULTURAL EDUCA	$	14.25
STATE FEE RECORDS MANAGE	$	4.75
COUNTY FEE RECORDING	$	8.00
COUNTY FEE NUMBER PAGES	$	30.00
COUNTY FEE TP584	$	5.00

Total	$	62.00
Check(s) Tendered	$	62.00
Balance	$	0.00

CHECK Number 3205	$	62.00

Total Documents: 1
Total Fees: 6

Client Name GENERAL PUBLIC
Sep 9 2010 4:09:29 PM

Cashier: RoseM

REFERENCE:

1.) TITLE REPORT PREPARED BY MONROE TITLE INSURANCE CORPORATION, TITLE NO. 201–032250, DATED 03/23/04.

2.) MAP PREPARED BY PASSERO SCARDETTA ASSOCIATES, ENTITLED "INSTRUMENT LOCATION MAP, FINAL AS–BUILT SURVEY", PROJECT NO. 7639H–1, DRAWINGS NO. 1 & 2, LAST DATED APRIL 27, 1977.

3.) CITY OF ROCHESTER DEPT. ENVIRONMENTAL SERVICES, MAPS & SURVEYS RECORD INFORMATION FOR THE RIGHT OF WAY OF MT. HOPE AVENUE, DISTRICT 22, MAP 9; DISTRICT 22 MAP 12; DISTRICT 22 MAP 14.

4.) CITY OF ROCHESTER DEPT. ENVIRONMENTAL SERVICES, MAPS & SURVEY DEPT. RECORD INFORMATION AND SURVEY DATA FOR EAST GENESEE RIVER WALL.

5.) LIBER 4769 DEEDS, PAGE 227.

6.) LIBER 4424 DEEDS, PAGE 79.

7.) MAP PREPARED BY SEAR BROWN ASSOCIATES, P.C. ENTITLED "PLAN OF PARCELS 1 THRU 11, GENESEE GATEWAY HOUSING", DRAWING NO. 1463.03–03, DATED DECEMBER 11, 1973.

8.) LIBER 325 MAPS, PAGE 37, DATED SEPTEMBER 28, 2005

9.) TITLE COMMITMENT NO. CL090046446, PREPARED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY, DATED APRIL 14, 2009

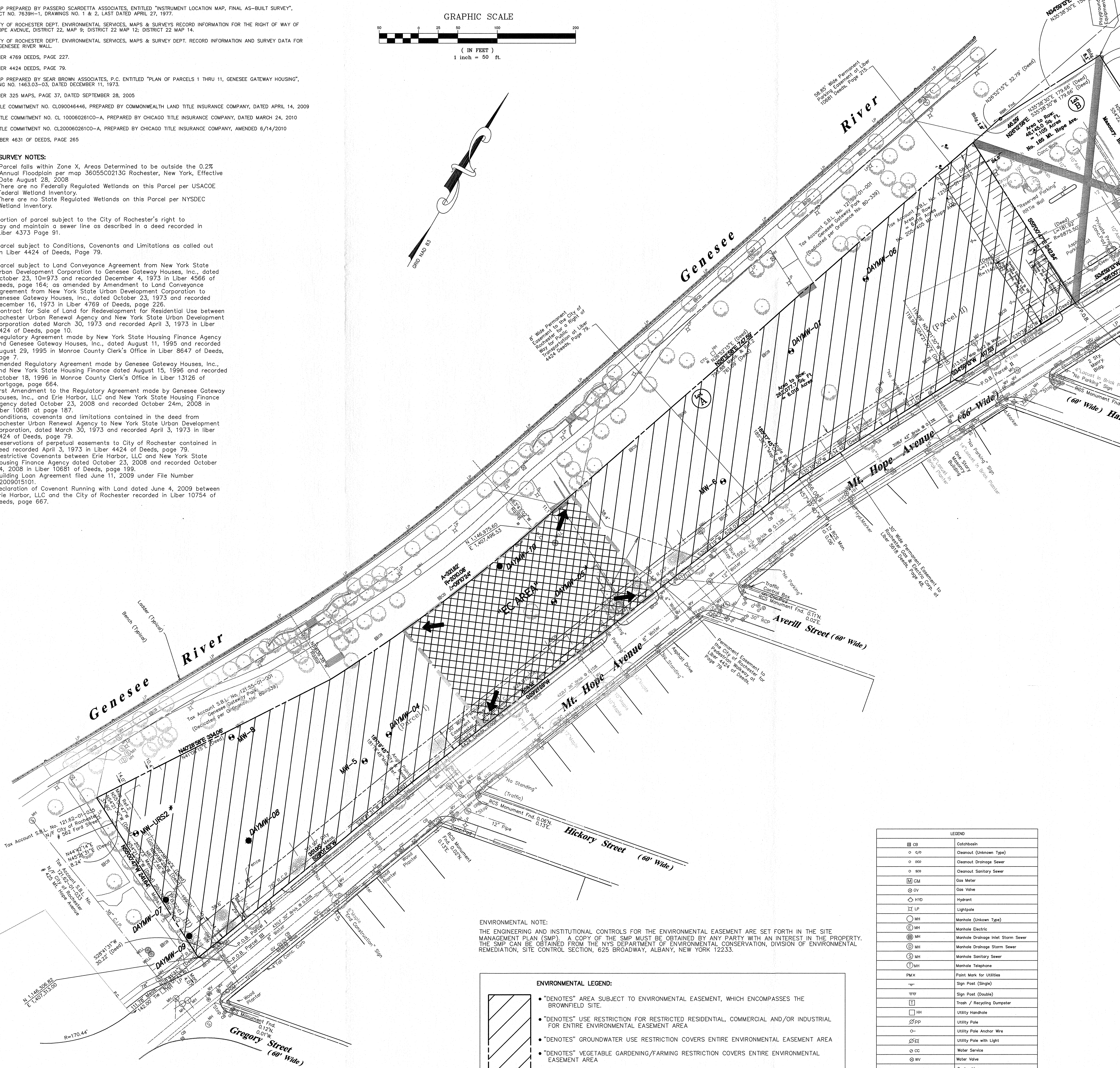
10.) TITLE COMMITMENT NO. CL 100060261CO–A, PREPARED BY CHICAGO TITLE INSURANCE COMPANY, DATED MARCH 24, 2010

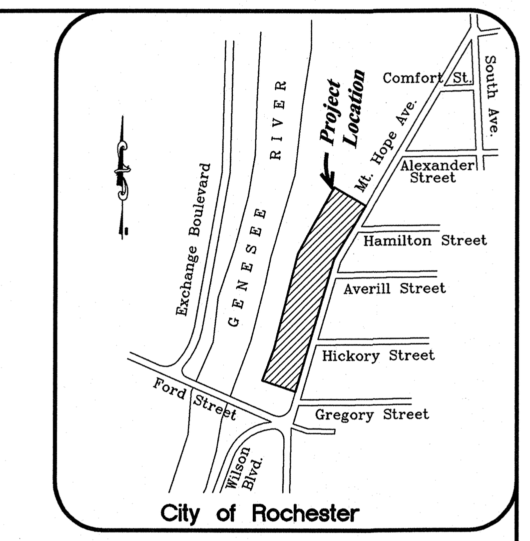
11.) TITLE COMMITMENT NO. CL200060261CO–A, PREPARED BY CHICAGO TITLE INSURANCE COMPANY, AMENDED 6/14/2010

12.) LIBER 4631 OF DEEDS, PAGE 265

SURVEY NOTES:

1. Parcel falls within Zone X, Areas Determined to be outside the 0.2% Annual Floodplain per map 36055C0213G Rochester, New York, Effective Date August 28, 2008
   There are no Federally Regulated Wetlands on this Parcel per USACOE Federal Wetland Inventory.
   There are no State Regulated Wetlands on this Parcel per NYSDEC Wetland Inventory.
2. Portion of parcel subject to the City of Rochester's right to lay and maintain a sewer line as described in a deed recorded in Liber 4373 Page 91.
3. Parcel subject to Conditions, Covenants and Limitations as called out in Liber 4424 of Deeds, Page 79.
4. Parcel subject to Land Conveyance Agreement from New York State Urban Development Corporation to Genesee Gateway Houses, Inc., dated October 23, 10=973 and recorded December 4, 1973 in Liber 4566 of Deeds, page 164; as amended by Amendment to Land Conveyance Agreement from New York State Urban Development Corporation to Genesee Gateway Houses, Inc., dated October 23, 1973 and recorded December 16, 1973 in Liber 4769 of Deeds, page 226.
5. Contract for Sale of Land for Redevelopment for Residential Use between Rochester Urban Renewal Agency and New York State Urban Development Corporation dated March 30, 1973 and recorded April 3, 1973 in Liber 4424 of Deeds, page 10.
6. Regulatory Agreement made by New York State Housing Finance Agency and Genesee Gateway Houses, Inc., dated August 11, 1995 and recorded August 29, 1995 in Monroe County Clerk's Office in Liber 8647 of Deeds, page 7.
   Amended Regulatory Agreement made by Genesee Gateway Houses, Inc., and New York State Housing Finance dated August 15, 1996 and recorded October 18, 1996 in Monroe County Clerk's Office in Liber 13126 of Mortgage, page 664.
   First Amendment to the Regulatory Agreement made by Genesee Gateway Houses, Inc., and Erie Harbor, LLC and New York State Housing Finance Agency dated October 23, 2008 and recorded October 24m, 2008 in Liber 10681 at page 187.
7. Conditions, covenants and limitations contained in the deed from Rochester Urban Renewal Agency to New York State Urban Development Corporation, dated March 30, 1973 and recorded April 3, 1973 in liber 4424 of Deeds, page 79.
8. Reservations of perpetual easements to City of Rochester contained in deed recorded April 3, 1973 in Liber 4424 of Deeds, page 79.
9. Restrictive Covenants between Erie Harbor, LLC and New York State Housing Finance Agency dated October 23, 2008 and recorded October 24, 2008 in Liber 10681 of Deeds, page 199.
10. Building Loan Agreement filed June 11, 2009 under File Number B2009015101.
11. Declaration of Covenant Running with Land dated June 4, 2009 between Erie Harbor, LLC and the City of Rochester recorded in Liber 10754 of Deeds, page 667.





LOCATION SKETCH

N.T.S.

Property Description

Address: 205– 405 Mt. Hope Avenue, Rochester, NY
Tax Id No: 121.55–1–59.001

Parcel 1

ALL THAT TRACT OR PARCEL OF LAND containing 6.177 acres, more or less, situated in the City of Rochester, County of Monroe, State of New York, being more particularly bounded and described as follows:

BEGINNING at a point on the westerly right–of–way of Mt. Hope Avenue (66 feet wide), said point being located north 28 41' 31" east, 142.00 feet from the northerly end of a 170.44 foot radius junction curve formed by the northerly right–of–way of Clarissa Street and the aforesaid right–of–way of Mt. Hope Avenue; thence (1) north 60 38' 29" west a distance of 199.91 feet to a point; thence (2) south 45 21' 31" west, a distance of 8.24 feet to a point; thence (3) north 54 21' 30" west, a distance of 37.90 feet to a point; thence (4) north 41 08" 15" east, a distance of 334.06 feet to a point; thence (5) northeasterly, on a curve to the left, having a radius of 2,010.08 feet, a distance of 321.82 feet to a point; thence (6) north 26 52' 15" east, a distance of 761.09 feet to a point; thence (7) north 35 38' 30" east, a distance of 179.66 feet to a point; thence (8) south 54 21' 30" east, a distance of 175.00 feet to a point; thence (9) south 36 08' 10" west, a distance of 22.57 feet to a point; thence (10) north 54 22' 20" west, a distance of 8.47 feet to a point; thence (11) southwesterly on a curve to the right, having a radius of 6875.50 feet a distance of 181.92 feet to a point; thence (12) southwesterly on a curve to the right, having a radius of 11,459.27 feet a distance of 174.00 feet to a point; thence(13) south 54 21' 30" east a distance of 119.99 feet to a point; thence (14) south 35 38' 30" west, along the aforesaid right of way of Mt. Hope Avenue, a distance of 234.46 feet to a point; thence(15) south 30 00' 19" west along the aforesaid right of way of Mt. Hope Avenue, a distance of 628.07 feet to a point; thence (16) south 28 41' 31" west along the aforesaid right of way of Mt. Hope Avenue, a distance of 321.80 feet to the first mentioned point or beginning.

Parcel II

ALL THAT TRACT OR PARCEL OF LAND containing 0.875 acres, more or less, situated in the City of Rochester, county of Monroe, State of New York being more particularly bounded and described as follows:

BEGINNING at a point on the westerly right–of–way of Mt. Hope Avenue (66 feet wide), said point being located north 28 41' 31" east, 463.80 feet; thence north 30 00' 19" east, 628.07 feet; thence north 35 38' 30" east, 234.46 feet from the northerly right–of–way of Clarissa Street and the aforesaid right–of–way of Mt. Hope Avenue; thence (1) north 54 21' 30" west, a distance of 119.99 feet to a point; thence (2) northeasterly, on a curve to the left, having a radius of 11,459.27 feet a distance of 174.00 feet to a point; thence (3) northeasterly, on a curve to the left, having a radius of 6,875.50 feet, a distance of 181.92 feet to a point; thence (4) south 54 22' 20" east, a distance of 8.47 feet to a point; thence (5) north 36 08' 10" east, a distance of 22.57 feet to a point; thence (6) north 54 21' 30" west, a distance of 175.00 feet to a point; thence (7) south 35 38' 30" west, a distance of 179.66 feet to a point; thence (8) north 26 52' 15" east, a distance of 32.79 feet to a point; thence (9) north 35 38' 30" east, a 150.25 feet to a point; thence (10) south 54 21' 30" east, a distance of 249.90 feet to a point; thence (11) south 35 38' 30" west, along the westerly right–of–way line of Mt. Hope Avenue, a distance of 379.07 feet to the point of beginning.

PARCEL III

ALL THAT TRACT OR PARCEL OF LAND containing 0.088 acres, more or less, situated in the City of Rochester., County of Monroe, State of New York and being more particularly bounded and described as follows:

BEGINNING at a point on the westerly right–of–way of Mt. Hope Avenue (66 feet wide), said point being located north 28 41' 31" east, 111.78 feet from the northerly end of a 170.44 foot radius junction curve formed by the northerly right–of–way of Clarissa Street and the aforesaid right–of–way of Mt. Hope Avenue; thence (1) north 54 21' 30" west, a distance of 203.76 feet to a point; thence (2) north 45 21' 31" east, a distance of 8.24 feet to a point; thence (3) south 60 38' 29" east, a distance of 199.91 feet to a point; thence (4) south 28 41' 31" west, along the aforesaid right–of–way of Mt. Hope Avenue, a distance of 30.22 feet to the first mentioned point or place of beginning.

EXCEPTING AND RESERVING ALL that tract or parcel of land, situated in the City of Rochester, County of Monroe, State of New York, and being more particularly described as follows: BEGINNING on the westerly right–of–way of Mt. Hope Avenue, (66' row), at the Southeasterly property corner of Tax Account No. 121.55–01–058; RUNNING THENCE south 34 degrees 59 minutes 13 seconds West, along said right–of–way, a distance of 196.00 feet to a point; RUNNING THENCE North 55 degrees 00 minutes 47 seconds West, a distance of 242.84 feet to a point; RUNNING THENCE North 26°12'58" East, a distance of 46.29 feet to a point; RUNNING THENCE North 34 degrees 59 minutes 13 seconds East, a distance of 150.25 feet to a point; RUNNING THENCE South 55 degrees 00 minutes 47 seconds East, a distance of 249.90 feet to the point of beginning.

ALSO DESCRIBED AS:

ALL THAT TRACT OR PARCEL OF LAND, SITUATED IN PORTION OF THE FORMER LEHIGH VALLEY RAILROAD & PART OF THE JF BERNARD SUBDIVISION, IN THE CITY OF ROCHESTER, COUNTY OF MONROE, AND STATE OF NEW YORK, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING ON THE NORTHWESTERLY RIGHT OF WAY OF MT. HOPE AVENUE (66' ROW) AT THE SOUTHEASTERLY PROPERTY CORNER OF TAX ACCOUNT NUMBER 121.55-01-058, SAID POINT BEING 123.41 FEET SOUTHWESTERLY OF AN ANGLE POINT IN THE NORTHWESTERLY RIGHT OF WAY OF MT. HOPE AVENUE; THENCE, SOUTH 34° 59'13" WEST, ALONG SAID RIGHT OF WAY, A DISTANCE OF 196.00 FEET TO THE POINT OF BEGINNING; THENCE,

1. **SOUTH 34°59'13" WEST, ALONG SAID RIGHT OF WAY, A DISTANCE OF 417.53 FEET TO A POINT; THENCE,**
2. **SOUTH 29°21'28" WEST, ALONG SAID RIGHT OF WAY, A DISTANCE OF 628.14 FEET TO A POINT; THENCE,**
3. **SOUTH 28°01'43" WEST, ALONG SAID RIGHT OF WAY, A DISTANCE OF 351.95 FEET TO A POINT; THENCE,**
4. **NORTH 55°00'47" WEST, ALONG THE EASTERLY PROPERTY LINE OF LANDS OF NOW OR FORMERLY THE CITY OF ROCHESTER, TAX ACCOUNT NUMBER 121.62-01-033 AND 121.62-01-035, A DISTANCE OF 241.64 FEET TO A POINT; THENCE,**
5. **NORTH 40°28'58" EAST, ALONG THE SOUTHERLY PROPERTY LINE OF LANDS OF NOW OR FORMERLY GENESEE GATEWAY PARK, TAX ACCOUNT NUMBER 121.55-01-001, A DISTANCE OF 334.06 FEET TO A POINT; THENCE,**
6. **NORTHEASTERLY, ALONG A CURVE TO THE LEFT, HAVING A CENTRAL ANGLE OF 0910'24", A RADIUS OF 2010.08 FET AND AN ARC LENGTH OF 321.82 FEET TO A POINT; THENCE,**
7. **NORTH 26°12'58" EAST, ALONG SAID PROPERTY LINE, A DISTANCE OF 747.59 FEET TO A POINT; THENCE,**
8. **SOUTH 55°00'47" EAST, A DISTANCE OF 242.84 FEET TO THE POINT OF BEGINNING, ENCOMPASSING 6.016 ACRES OF LAND, MORE OR LESS.**

CERTIFICATION:

THE UNDERSIGNED DOES HEREBY CERTIFIY TO 1.) THE PEOPLE OF THE STATE IF NEW YORK ACTING THROUGH THEIR COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, 2.) ERIE HARBOR, LLC, 3.) CONIFER DEVELOPMENT, INC., 4.) KNAUF SHAW LLP, 5.) CHICAGO TITLE INSURANCE COMPANY, THAT THIS SURVEY WAS MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS" JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND ACSM IN 2005, INCLUDES ITEMS 1–4, 6, 7a, 8–10, 11a, 13 AND 18 OF TABLE A, AND ALSO IN ALL RESPECTS MEETS THE REQUIREMENTS OF ALL APPLICABLE LAW. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA, NSPS AND ACSM AND IN EFFECT ON TYHE DATE OF THIS CERTIFICATION, THE UNDERSIGNED FURTHER CERTIFIES THAT THE POSITIONAL UNCERTAINTIES RESULTING FROM THE SURVEY MEASUREMENTS MADE ON THE SURVEY DO NOT EXCEEED THE ALLOWABLE POSITIONAL TOLERANCE, AS DEFINED THEREIN.

STATE OF NEW YORK · EDWARD J. FREEMAN · 49771 · LICENSED LAND SURVEYOR

6/30/10

EDWARD J. FREEMAN N.Y.S.P.L.S. NO. 049771

NOTES:

1.) SHADED AREA DENOTES EASEMENT TO THE PEOPLE OF THE STATE OF NEW YORK ACTING THROUGH THEIR COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.
2.) BASE MAP PREPARED BY PASSERO ASSOCIATES.
3.) ENVIRONMENTAL / INSTITUTIONAL CONTROLS WERE PREPARED BY DAY ENVIRONMENTAL, INC. AND ARE SUBJECT TO THE RESTRICTIONS OF THE ENVIRONMENTAL EASEMENT.

LICENSED PROFESSIONAL ENGINEER · TIMOTHY K. HAMPTON · STATE OF NEW YORK

6/30/10

DAY ENVIRONMENTAL, INC. — DATE
40 COMMERCIAL STREET
ROCHESTER, NY 14614 585–424–0210

ENVIRONMENTAL NOTE:

THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THE ENVIRONMENTAL EASEMENT ARE SET FORTH IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP CAN BE OBTAINED FROM THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NEW YORK 12233.

ENVIRONMENTAL LEGEND:

- "DENOTES" AREA SUBJECT TO ENVIRONMENTAL EASEMENT, WHICH ENCOMPASSES THE BROWNFIELD SITE.
- "DENOTES" USE RESTRICTION FOR RESTRICTED RESIDENTIAL, COMMERCIAL AND/OR INDUSTRIAL FOR ENTIRE ENVIRONMENTAL EASEMENT AREA
- "DENOTES" GROUNDWATER USE RESTRICTION COVERS ENTIRE ENVIRONMENTAL EASEMENT AREA
- "DENOTES" VEGETABLE GARDENING/FARMING RESTRICTION COVERS ENTIRE ENVIRONMENTAL EASEMENT AREA
- "DENOTES" ALL FUTURE ACTIVITIES ON THE PARCEL REQUIRING DISTURBANCE OF REMAINING CONTAMINATED MATERIAL UNDER TOP TWO FEET OF SOIL SHALL BE CONDUCTED IN ACCORDANCE WITH THE SITE MANAGEMENT PLAN
- "DENOTES" GROUNDWATER MONITORING WELLS SHALL BE MONITORED, MAINTAINED AND REPLACED AS REQUIRED IN SITE MANAGEMENT PLAN

- "DENOTES" VAPOR INTRUSION POTENTIAL MUST BE EVALUATED FOR ANY BUILDINGS WITHIN THE ENVIRONMENTAL CONTROL AREA DESIGNATED AS "EC AREA".

DAYMW–05	EXISTING MONITORING WELL LOCATION
DAYMW–10	TENTATIVE LOCATION OF NEW MONITORING WELL TO BE INSTALLED SUBSEQUENT TO SITE REDEVELOPMENT
*	EXISTING MONITORING WELL MAY BE DECOMMISSIONED AND REPLACED WITH NEW MONITORING WELL AT DIFFERENT LOCATION BASED ON REDEVELOPMENT PLAN

NOTE: SEE ENVIRONMENTAL EASEMENT FOR DETAILS ON THE CONTROLS

LEGEND	
CB	Catchbasin
C/O	Cleanout (Unknown Type)
DCO	Cleanout Drainage Sewer
SCO	Cleanout Sanitary Sewer
M GM	Gas Meter
GV	Gas Valve
HYD	Hydrant
LP	Lightpole
MH	Manhole (Unkown Type)
E MH	Manhole Electric
MH	Manhole Drainage Inlet Storm Sewer
D MH	Manhole Drainage Storm Sewer
S MH	Manhole Sanitary Sewer
T MH	Manhole Telephone
PM×	Paint Mark for Utilities
	Sign Post (Single)
	Sign Post (Double)
T	Trash / Recycling Dumpster
HH	Utility Handhole
PP	Utility Pole
	Utility Pole Anchor Wire
	Utility Pole with Light
CC	Water Service
WV	Water Valve
	Center Line
	Concrete
	Easement (Approximate Location)
	Electric Lines (Approximate Location)
	Drainage Sewer (Approximate Location)
	Fence
	Gas Lines (Approximate Location)
	Overhead Wires
	Property Line
	Sanitary Sewer (Approximate Location)
	Setback Line
	Water Lines (Approximate Location)

Revisions

Passero Associates

Engineering Architecture — Surveying Planning

Genesee Gateway
No.205-405 Mt. Hope Ave.

ALTA Survey

Conifer Realty LLC
183 E. Main St.
Rochester, NY 14604

Project No. 24000103.0012

Drawing No. ALTA-1

Scale: 1" = 50'

Date: May 14, 2010

APPENDIX B

LIST OF SITE CONTACTS

Name	Phone/Email Address
Timothy Fournier, Erie Harbor, LLC (Site Owner and Remedial Party)	585-324-0500 Timf@coniferllc.com
Day Environmental, Inc. (Remedial Party's Consultant)	585-454-0210
Mackenzie Osypian NYSDEC Project Manager	585-226-5409 Mackenzie.osypian@dec.ny.gov
David Pratt NYSDEC DER Project Manager's Supervisor	(585) 226-5449 david.pratt@dec.ny.gov
Site Control Section Chief	DERSiteControl@dec.ny.gov
Julia Kenney NYSDOH Project Manager	julia.kenney@health.ny.gov
Michelle Szczerba On-Site Access Contact	mszczerba@coniferllc.com 585-440-4912

APPENDIX C
MONITORING WELL BORING LOGS
AND CONSTRUCTION DIAGRAMS

Boring DAYMW-05A

Project #:	4155R-09
Project Address:	205-405 Mt. Hope Ave.
	Rochester, NY
DAY Representative:	W. Batiste
Drilling Contractor:	Nothnagle Drilling
Sampling Method:	MacroCore w/CME-85 Rotary Rig

Ground Elevation: 513.45' Datum: 515.13' (MW-207 TOC)
Date Started: 6/29/2012 Date Ended: 6/29/2012
Borehole Depth: 19.0' Borehole Diameter: 8"
Completion Method: ■ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings
Water Level (Date): 502.88' (7-12-2012)

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	Headspace PID (ppm)	PID Reading (ppm)	Sample Description	Notes
							0.0	MULCH	
1							0.0	Light Gray, Sand, some Silt and fine to medium Gravel, some Concrete, moist (FILL)	
2	NA	S-1	0-4	30	NA	0.0	0.0		
3							0.0		
4							0.0		
5							0.0	Brown, Silty fine SAND, some fine Gravel, moist	
6	NA	S-2	4-8	60	NA	0.0	0.0		513.45'
7							0.0		
8							0.0		
9							0.0		
10	NA	S-3	8-12	40	NA	0.0	0.0		
11							0.0	Brown, SILT and fine Sand, some fine Gravel, wet	
12							0.0	Brown, Silty fine SAND, some fine to coarse Gravel, wet	
13							0.0		
14	NA	S-4	12-15	60	NA	0.0	0.0		
15									
16									

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) Stratification lines represent approximate boundaries. Transitions may be gradual.
3) PID readings are referenced to a benzene standard measured in the headspace above the sample using a MiniRae 2000 equipped with a 10.6 eV lamp.
4) NA = Not Available or Not Applicable
5) Headspace PID readings may be influenced by moisture

Boring DAYMW-05A

day
DAY ENVIRONMENTAL, INC.

ENVIRONMENTAL CONSULTANTS
AN AFFILIATE OF DAY ENGINEERING, P.C.

Project #:	4155R-09		**Boring DAYMW-05A**
Project Address:	205-405 Mt. Hope Ave. Rochester, NY	Ground Elevation: 513.45'	Datum: 515.13' (MW-207 TOC)
DAY Representative:	W. Batiste	Date Started: 6/29/2012	Date Ended: 6/29/2012
Drilling Contractor:	Nothnagle Drilling	Borehole Depth: 19.0'	Borehole Diameter: 8"
Sampling Method:	MacroCore w/CME-85 Rotary Rig	Completion Method: ■ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings	
		Water Level (Date): 502.88' (7-12-2012)	

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	Headspace PID (ppm)	PID Reading (ppm)	Sample Description	Notes
							0.0		
17	NA	S-5	15-19	50	NA	0.0	0.0	Brown, fine SAND, some Silt and fine to medium Gravel, wet	
18							0.0		
19								Auger Refusal @ 19.0'	
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) Stratification lines represent approximate boundaries. Transitions may be gradual.
3) PID readings are referenced to a benzene standard measured in the headspace above the sample using a MiniRae 2000 equipped with a 10.6 eV lamp.
4) NA = Not Available or Not Applicable
5) Headspace PID readings may be influenced by moisture

Boring DAYMW-05A

1563 LYELL AVENUE
ROCHESTER, NEW YORK 14606
(585) 454-0210
FAX (585) 454-0825

www.dayenvironmental.com

420 LEXINGTON AVENUE, SUITE 300
NEW YORK, NEW YORK 10170
(212) 986-8645
FAX (212) 986-8657

Project #: 4155R-09
Project Address: 205-405 Mt. Hope Ave.
Rochester, NY
DAY Representative: W. Batiste
Drilling Contractor: Nothnagle Drilling
Sampling Method: MacroCore w/CME-85 Rotary Rig

Boring DAYMW-08

Page 1 of 2

Ground Elevation: 513.31'   Datum: 515.13' (MW-207 TOC)
Date Started: 6/29/2012   Date Ended: 6/29/2012
Borehole Depth: 19.2'   Borehole Diameter: 8"
Completion Method: ☒ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings
Water Level (Date): 503.33' (7-12-2012)

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	Headspace PID (ppm)	PID Reading (ppm)	Sample Description	Notes
							0.0	ASPHALT	
1	NA	S-1	0-3	60	NA	0.0	0.0	Light Gray, fine Sand, some fine to medium Gravel and Concrete, moist (FILL)	
2							0.0		
3								MacroCore refusal @ 3.0' No data, Auger to 4'	
4							0.0	Brown, SILT, little Clay, some fine to coarse Gravel, moist	
5							0.0		
6	NA	S-2	4-8	50	NA	0.0	0.0	Brown, SILT, some Clay, little Sand, some fine to coarse Gravel, moist	
7							0.0	...wet	
8							0.0	Brown, SAND, trace Silt, some fine to coarse Gravel, wet	
9							0.0		
10	NA	S-3	8-12	70	NA	0.0	0.0	Grayish-Brown, SILT, little fine SAND, trace fine Gravel, wet	
11							0.0	...moist	
12							0.0	Reddish-Brown, SILT, little fine Sand, trace fine Gravel, moist	
13							0.0		
14	NA	S-4	12-15	100	NA	0.0	0.0		
15									
16									

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) Stratification lines represent approximate boundaries. Transitions may be gradual.
3) PID readings are referenced to a benzene standard measured in the headspace above the sample using a MiniRae 2000 equipped with a 10.6 eV lamp.
4) NA = Not Available or Not Applicable
5) Headspace PID readings may be influenced by moisture

Boring DAYMW-08

Boring DAYMW-08

Project #:	4155R-09
Project Address:	205-405 Mt. Hope Ave. Rochester, NY
DAY Representative:	W. Batiste
Drilling Contractor:	Nothnagle Drilling
Sampling Method:	MacroCore w/CME-85 Rotary Rig

Ground Elevation: 513.31'   Datum: 515.13' (MW-207 TOC)
Date Started: 6/29/2012   Date Ended: 6/29/2012
Borehole Depth: 19.2'   Borehole Diameter: 8"
Completion Method: ☒ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings
Water Level (Date): 503.33 (7-12-2012)

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	Headspace PID (ppm)	PID Reading (ppm)	Sample Description	Notes
							0.0	Brown, Clayey SILT, some fine to medium Gravel, wet	
17							0.0		
18	NA	S-5	15-19.2	100	NA	NA	0.0		
19							0.0		
20								Equipment Refusal @ 19.2'	
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) Stratification lines represent approximate boundaries. Transitions may be gradual.
3) PID readings are referenced to a benzene standard measured in the headspace above the sample using a MiniRae 2000 equipped with a 10.6 eV lamp.
4) NA = Not Available or Not Applicable
5) Headspace PID readings may be influenced by moisture

Boring DAYMW-08

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Boring DAYMW-09A

Project #:	4155R-09
Project Address:	205-405 Mt. Hope Ave. Rochester, NY
DAY Representative:	W. Batiste
Drilling Contractor:	Nothnagle Drilling
Sampling Method:	MacroCore w/CME-85 Rotary Rig
Ground Elevation:	514.95'
Datum:	515.13' (MW-207 TOC)
Date Started:	6/28/2012
Date Ended:	6/28/2012
Borehole Depth:	20.0'
Borehole Diameter:	8"
Completion Method:	■ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings
Water Level (Date):	502.83' (7-12-2012)

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	Headspace PID (ppm)	PID Reading (ppm)	Sample Description	Notes
							0.0	MULCH	
1								Brown, Silt, little Clay, trace fine Gravel, moist (FILL)	
								Light Gray, Sand, little Silt, some fine to medium Gravel, some Concrete, moist (FILL)	
2	NA	S-1	0-4	30	NA	0.0	0.0		
3							0.0		
4							0.0	Brown, Silt, trace fine Sand, little Clay, some fine Gravel, moist (FILL)	
5									
6	NA	S-2	4-8	40	NA	0.0	0.0		
								Light Gray, Sand, little Silt, some fine to medium Grave, some Concrete, moist (FILL)	
7							0.0		
8							0.0	Greenish-Brown, SILT, little fine Sand, some fine to medium Gravel, moist	
9									
10	NA	S-3	8-12	20	NA	0.0	0.0		
11							0.0		
12							0.0	Reddish-Brown, SILT and fine SAND, some fine to medium Gravel, wet	
13									
14	NA	S-4	12-15	20	NA	2.2	0.0		
15									
16									

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) Stratification lines represent approximate boundaries. Transitions may be gradual.
3) PID readings are referenced to a benzene standard measured in the headspace above the sample using a MiniRae 2000 equipped with a 10.6 eV lamp.
4) NA = Not Available or Not Applicable
5) Headspace PID readings may be influenced by moisture

Boring DAYMW-09A

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AN AFFILIATE OF DAY ENGINEERING, P.C.

Boring DAYMW-09A

Project #:	4155R-09	Ground Elevation: 514.95'	Datum: 515.13' (MW-207 TOC)
Project Address:	205-405 Mt. Hope Ave. Rochester, NY	Date Started: 6/28/2012	Date Ended: 6/28/2012
DAY Representative:	W. Batiste	Borehole Depth: 20.0'	Borehole Diameter: 8"
Drilling Contractor:	Nothnagle Drilling	Completion Method: ☒ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings	
Sampling Method:	MacroCore w/CME-85 Rotary Rig	Water Level (Date): 502.83' (7-12-2012)	

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	Headspace PID (ppm)	PID Reading (ppm)	Sample Description	Notes
							0.0	Light Brown, SILT and fine Sand and fine to coarse Gravel, wet	
17	NA	S-5	15-19	10	NA	0.0	0.0		
18							0.0		
19	NA	S-6	19-20	0	NA	NA	0.0		
							0.0		
20								End of Test Boring @ 20.0'	
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) Stratification lines represent approximate boundaries. Transitions may be gradual.
3) PID readings are referenced to a benzene standard measured in the headspace above the sample using a MiniRae 2000 equipped with a 10.6 eV lamp.
4) NA = Not Available or Not Applicable
5) Headspace PID readings may be influenced by moisture

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AN AFFILIATE OF DAY ENGINEERING, P.C.

Project #: 4155R-09
Project Address: 205-405 Mt. Hope Ave.
Rochester, NY
DAY Representative: W. Batiste
Drilling Contractor: Nothnagle Drilling
Sampling Method: MacroCore w/CME-85 Rotary Rig

Boring DAYMW-10

Ground Elevation: 514.21'
Datum: 515.13' (MW-207 TOC)
Date Started: 6/28/2012
Date Ended: 6/28/2012
Borehole Depth: 20.0'
Borehole Diameter: 8"
Completion Method: ■ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings
Water Level (Date): 502.68' (7-12-2012)

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	Headspace PID (ppm)	PID Reading (ppm)	Sample Description	Notes
							0.0	TOPSOIL	
1							0.0	Brown, Silt, trace fine Sand, some fine to medium Gravel, some Brick, Concrete, Black Charred Material (FILL)	
2	NA	S-1	0-4	70	NA	0.0	0.0	Light Brown, fine SAND, little Silt, some fine to coarse Gravel, moist	
3							0.0		
4							0.0	Dark Brown, SILT, some fine Sand, little fine to medium Gravel, moist	
5							0.0	Light Brown, SILT, some fine Sand, trace fine to medium Gravel, moist	
6	NA	S-2	4-8	90	NA	0.0	0.0		
7							0.0		
8							0.0		
9									
10	NA	S-3	8-12	40	NA	0.0	0.0		
11								...wet	
							0.0	Brown, fine SAND, little Silt, some coarse Gravel, wet	
12							0.0		
13							0.0	...fine to coarse Gravel	
14	NA	S-4	12-15	70	NA	0.0	0.0		
15								Brown, fine SAND, trace Silt and medium to coarse Gravel, wet	
16									

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) Stratification lines represent approximate boundaries. Transitions may be gradual.
3) PID readings are referenced to a benzene standard measured in the headspace above the sample using a MiniRae 2000 equipped with a 10.6 eV lamp.
4) NA = Not Available or Not Applicable
5) Headspace PID readings may be influenced by moisture

Boring DAYMW-10

Project #:	4155R-09
Project Address:	205-405 Mt. Hope Ave.
	Rochester, NY
DAY Representative:	W. Batiste
Drilling Contractor:	Nothnagle Drilling
Sampling Method:	MacroCore w/CME-85 Rotary Rig

Boring DAYMW-10

Ground Elevation: 514.21'
Datum: 515.13' (MW-207 TOC)
Date Started: 6/28/2012
Date Ended: 6/28/2012
Borehole Depth: 20.0'
Borehole Diameter: 8"
Completion Method: ■ Well Installed ☐ Backfilled with Grout ☐ Backfilled with Cuttings
Water Level (Date): 502.68' (7-12-2012)

Depth (ft)	Blows per 0.5 ft.	Sample Number	Sample Depth (ft)	% Recovery	N-Value or RQD%	Headspace PID (ppm)	PID Reading (ppm)	Sample Description	Notes
							0.0	Brown, fine SAND, little Silt, some fine to medium Gravel, wet	
17	NA	S-5	15-19	80	NA	0.0	0.0		
18							0.0	...trace Clay	
19	NA	S-6	19-20	80	NA	0.0	0.0	...reddish Brown	
							0.0		
20								End of Test Boring @ 20.0'	
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) Stratification lines represent approximate boundaries. Transitions may be gradual.
3) PID readings are referenced to a benzene standard measured in the headspace above the sample using a MiniRae 2000 equipped with a 10.6 eV lamp.
4) NA = Not Available or Not Applicable
5) Headspace PID readings may be influenced by moisture

Boring DAYMW-10

Day Environmental, Inc.
2144 Brighton-Henrietta T.L. Rd.
Rochester, New York 14623
(716) 292-1090

BORING NUMBER: MW-5

Project: Mt. Hope Avenue, Rochester, New York
DAY Representative: Dennis M. Peck
Drilling Contractor: Nothnagle Drilling
Drilling Rig: CME-75
Sampling Method: Split Spoon
Completion Method: 2" PVC Well

Project No: 2395S-00
Boring Location: See Site Plan
Ground Surface Elevation: NA **Datum:** NA
Start Date: 8/30/00 **Completion Date:** 8/30/00
Borehole Diameter: 8" **Borehole Depth:** 18 feet
Water Level:

Depth (feet)	Blows per 0.5'	Number	Depth (feet)	% Recovery	N-Value or RQD %	Peak PID Reading (ppm)	Well Installation Log	Sample Description
1	2 4 7 18	S-1	0-2	30	11	1.1		Grass and topsoil. Brown Silt, trace roots, moist.
2-3	20 12 9 9	S-2	2-4	50	21	2.1		... Tan SILT, little fine Sand, moist.
4-5	3 17 18 26	S-3	4-6	40	35	1.1		... SILT, some Gravel, moist.
6-7	27 29 30 23	S-4	6-8	40	59	1.2		... some Rock Fragments.
8-9	5 5 5 5	S-5	8-10	40	10	0.6		... Gray fine SAND, trace Silt, trace Gravel, (GLACIAL TILL), wet.
10-11	6 15 15 17	S-6	10-12	80	30	0.5		... fine SAND and SILT, trace Gravel, very compact.
12-13	9 13 21 22	S-7	12-14	50	34	0.5		Reddish Brown Silty CLAY, damp.
14-15	11 22 24 22	S-8	14-16	50	46	0.7		... Gray SILT, damp.
16-17	24 26 36 40	S-9	16-18	80	62			... fine SAND and SILT, trace Clay, wet. Auger Refusal.
18								BOH at 18'.
19								
20								

dav

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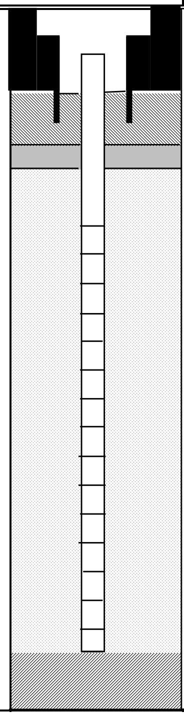
MONITORING WELL CONSTRUCTION DIAGRAM

MONITORING WELL DAYMW-05A

Project #:	4155R-09	Ground Elevation:	513.45'	Datum:	515.13' (MW-207 TOC)
Project Address:	205-405 Mt. Hope Ave. Rochester, NY	Date Started:	6/29/2012	Date Ended:	6/29/2012
DAY Representative:	W. Batiste	Water Level (Date):	502.88' (7-12-2012)		
Drilling Contractor:	Nothnagle Drilling				

Refer to Test Boring Log DAYMW-05A for Soil Description



Flush Mounted Roadbox

0.25 Depth to Top of Riser Pipe (ft)

5.0 Depth to Bottom of Cement Surface Patch (ft)

Backfill Type Bentonite

5.0 Depth to Top of Bentonite Seal (ft)

6.5 Depth to Bottom of Bentonite Seal (ft)

8.5 Depth to Top of Well Screen (ft)

4 1/4 Diameter of Borehole (in)

Backfill Type Sand

2.0 Inside Diameter of Well (in)

Type of Pipe PVC

Screen slot size 10 Slot

18.5 Depth to Bottom of Well Screen (ft)

19.0 Depth to Bottom of Borehole/Top of Bedrock (ft)

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.

2) NA = Not Available or Not Applicable

MONITORING WELL DAYMW-05A

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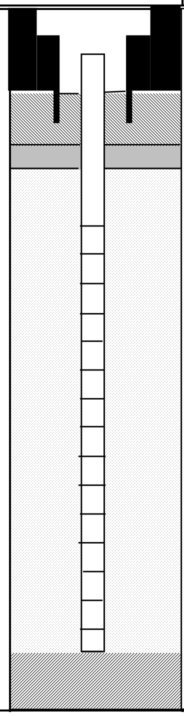
MONITORING WELL CONSTRUCTION DIAGRAM

MONITORING WELL DAYMW-08

Project #:	4155R-09
Project Address:	205-405 Mt. Hope Ave. Rochester, NY
DAY Representative:	W. Batiste
Drilling Contractor:	Nothnagle Drilling

Ground Elevation:	513.31'	Datum:	515.13' (MW-207 TOC)
Date Started:	6/29/2012	Date Ended:	6/29/2012
Water Level (Date):	503.33' (7-12-2012)		

Refer to Test Boring Log DAYMW-08 for Soil Description



Flush Mounted Roadbox
0.25 Depth to Top of Riser Pipe (ft)
5.2 Depth to Bottom of Cement Surface Patch (ft)
Backfill Type Bentonite

5.2 Depth to Top of Bentonite Seal (ft)
7.8 Depth to Bottom of Bentonite Seal (ft)

9.2 Depth to Top of Well Screen (ft)

4 1/4 Diameter of Borehole (in)

Backfill Type Sand

2.0 Inside Diameter of Well (in)

Type of Pipe PVC
Screen slot size 10 Slot

19.2 Depth to Bottom of Well Screen (ft)
19.2 Depth to Bottom of Borehole/Top of Bedrock (ft)

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.
2) NA = Not Available or Not Applicable

MONITORING WELL DAYMW-08

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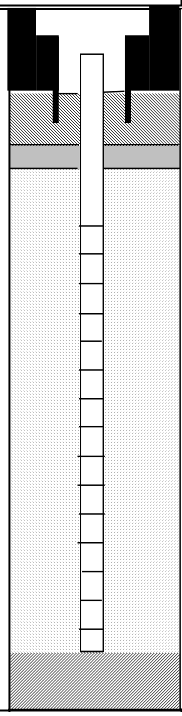
MONITORING WELL CONSTRUCTION DIAGRAM

MONITORING WELL DAYMW-09A

Project #:	4155R-09				
Project Address:	205-405 Mt. Hope Ave.				
	Rochester, NY	Ground Elevation:	514.95'	Datum:	515.13' (MW-207 TOC)
DAY Representative:	W. Batiste	Date Started:	6/28/2012	Date Ended:	6/29/2012
Drilling Contractor:	Nothnagle Drilling				
		Water Level (Date):	502.83' (7-12-2012)		

Refer to Test Boring Log DAYMW-09A for Soil Description



Flush Mounted Roadbox

0.25 Depth to Top of Riser Pipe (ft)

5.2 Depth to Bottom of Cement Surface Patch (ft)

Backfill Type Bentonite

5.2 Depth to Top of Bentonite Seal (ft)

7.9 Depth to Bottom of Bentonite Seal (ft)

10.0 Depth to Top of Well Screen (ft)

4 1/4 Diameter of Borehole (in)

Backfill Type Sand

2.0 Inside Diameter of Well (in)

Type of Pipe PVC

Screen slot size 10 Slot

20.0 Depth to Bottom of Well Screen (ft)

20.0 Depth to Bottom of Borehole/Top of Bedrock (ft)

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.

2) NA = Not Available or Not Applicable

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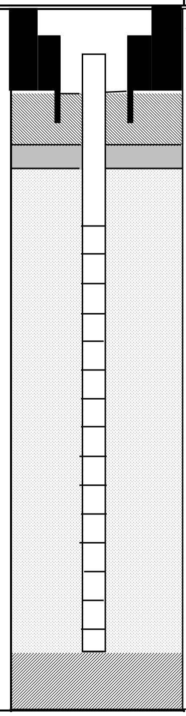
MONITORING WELL CONSTRUCTION DIAGRAM

MONITORING WELL DAYMW-10

Project #:	4155R-09
Project Address:	205-405 Mt. Hope Ave.
	Rochester, NY
DAY Representative:	W. Batiste
Drilling Contractor:	Nothnagle Drilling

Ground Elevation:	514.21'	Datum:	515.13' (MW-207 TOC)
Date Started:	6/28/2012	Date Ended:	6/28/2012
Water Level (Date):	502.68' (7-12-2012)		

Refer to Test Boring Log DAYMW-10 for Soil Description



Flush Mounted Roadbox

0.25 Depth to Top of Riser Pipe (ft)

5.0 Depth to Bottom of Cement Surface Patch (ft)

Backfill Type Bentonite

5.0 Depth to Top of Bentonite Seal (ft)

8.0 Depth to Bottom of Bentonite Seal (ft)

10.0 Depth to Top of Well Screen (ft)

4 1/4 Diameter of Borehole (in)

Backfill Type Sand

2.0 Inside Diameter of Well (in)

Type of Pipe PVC

Screen slot size 10 Slot

20.0 Depth to Bottom of Well Screen (ft)

20.0 Depth to Bottom of Borehole/Top of Bedrock (ft)

Notes: 1) Water levels were made at the times and under conditions stated. Fluctuations of groundwater levels may occur due to seasonal factors and other conditions.

2) NA = Not Available or Not Applicable

MONITORING WELL DAYMW-10

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Day Environmental, Inc.
2144 Brighton-Henrietta T.L. Rd.
Rochester, New York 14623
(716) 292-1090

BORING NUMBER: MW-5

Project: Mt. Hope Avenue, Rochester, New York
DAY Representative: Dennis M. Peck
Drilling Contractor: Nothnagle Drilling
Drilling Rig: CME-75
Sampling Method: Split Spoon
Completion Method: 2" PVC Well

Project No: 2395S-00
Boring Location: See Site Plan
Ground Surface Elevation: NA **Datum:** NA
Start Date: 8/30/00 **Completion Date:** 8/30/00
Borehole Diameter: 8" **Borehole Depth:** 18 feet
Water Level:

Depth (feet)	Blows per 0.5'	Number	Depth (feet)	% Recovery	N-Value or RQD %	Peak PID Reading (ppm)	Well Installation Log	Sample Description
0-2	2 4 7 18	S-1	0-2	30	11	1.1		Grass and topsoil. Brown Silt, trace roots, moist.
2-4	20 12 9 9	S-2	2-4	50	21	2.1		... Tan SILT, little fine Sand, moist.
4-6	3 17 18 26	S-3	4-6	40	35	1.1		... SILT, some Gravel, moist.
6-8	27 29 30 23	S-4	6-8	40	59	1.2		... some Rock Fragments.
8-10	5 5 5 5	S-5	8-10	40	10	0.6		... Gray fine SAND, trace Silt, trace Gravel, (GLACIAL TILL), wet.
10-12	6 15 15 17	S-6	10-12	80	30	0.5		... fine SAND and SILT, trace Gravel, very compact.
12-14	9 13 21 22	S-7	12-14	50	34	0.5		Reddish Brown Silty CLAY, damp.
14-16	11 22 24 22	S-8	14-16	50	46	0.7		... Gray SILT, damp.
16-18	24 26 36 40	S-9	16-18	80	62			... fine SAND and SILT, trace Clay, wet. Auger Refusal.
18-20								BOH at 18'.

APPENDIX D
EXCAVATION WORK PLAN (EWP)

D-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination or breach or alter the site's cover system, the site owner or their representative will notify the NYSDEC contacts listed in the table below. Table B-1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table B-1: Notifications*

Mackenzie Osypian NYSDEC Project Manager	585-226-5409 Mackenzie.osypian@dec.ny.gov
Dave Pratt NYSDEC Project Manager's Supervisor	(585) 226-5449 david.pratt@dec.ny.gov
Site Control Section Chief	DERSiteControl@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated, any modifications of truck routes, and any work that may impact an engineering control;

- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work, and submittals (e.g., reports) to the NYSDEC documenting the completed intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP, 29 CFR 1910.120 and 29 CFR 1926 Subpart P;
- A copy of the contractor's HASP, in electronic format, if it differs from the HASP provided in Appendix E of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with the required request to import form and all supporting documentation including, but not limited to, chemical testing results.

The NYSDEC project manager will review the notification and may impose additional requirements for the excavation that are not listed in this EWP. The alteration, restoration and modification of engineering controls must conform with Article 145 Section 7209 of the Education Law regarding the application professional seals and alterations.

D-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed during all excavations into known or potentially contaminated material (remaining contamination) or a breach of the cover system. A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will perform the screening. Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Section B-6 and B-7 of this Appendix.

D-3 SOIL STAGING METHODS

Depending upon the quantity of material excavated, impacted materials may be loaded directly into trucks for transport and off-site for disposal, placed within roll-off containers and/or placed in a soil stockpile. Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

D-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site. A site utility stakeout will be completed for all utilities prior to any ground intrusive activities at the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements). Trucks transporting contaminated soil must have either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides.

If required based on the type and extent of invasive work proposed, a truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The site owner or its contractor will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials. Material accumulated from the street cleaning and egress cleaning activities will be disposed off-site at a permitted landfill facility in accordance with all applicable local, State, and Federal regulations.

D-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

A map and directions from the site via approved truck transport routes will be obtained by the transporter prior to transporting materials off-site for reuse or disposal. All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

D-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid excavated and removed from the site that will not be reused on-site or off-site, will be treated as contaminated and regulated material and will be transported and disposed off-site in a permitted facility in accordance with all local, State and Federal regulations. If disposal of material from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC project manager. Unregulated off-site management of materials from this site will not occur without formal NYSDEC project manager approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, (e.g. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C&D debris recovery facility). Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include, but will not be limited to: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Unless approved for off-site reuse, non-hazardous historic fill and contaminated soils taken off-site will be handled consistent with 6 NYCRR Parts 360, 361, 362, 363, 364 and 365. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State C&D debris recovery facility (6 NYCRR Subpart 360-15 registered or permitted facility).

D-7 MATERIALS REUSE ON-SITE

The qualified environmental professional, as defined in 6 NYCRR Part 375, will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material (i.e. contaminated) does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within the cover system or within landscaping berms. Contaminated on-site material may only be used beneath the site cover as backfill for subsurface utility lines with prior approval from the DEC project manager.

Based on the existing analytical laboratory test results of soil and historic fill, and on the remediation performed to date, soil and historic fill present at the site meet Restricted Residential SCOs referenced in NYSDEC Part 375. These materials can be reused on-site in accordance with the provisions of the SMP and Environmental Easement. These materials can be re-used on-site.

Soil/fill material for reuse on-site will be segregated and staged as described in Sections D-2 and D-3 of this EWP. The anticipated size and location of stockpiles will be provided in the 15-day notification to the NYSDEC project manager. Stockpile locations will be based on the location of site excavation activities and proximity to nearby site features. Material reuse on-site will comply with requirements of NYSDEC DER-10 Section 5.4(e)4. Any modifications to the requirements of DER-10 Section 5.4(e)4 must be approved by the NYSDEC project manager.

Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

D-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed off-site at a permitted facility in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a State Pollutant Discharge Elimination System (SPDES) permit.

D-9 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional, as defined in 6 NYCRR Part 375, and will be in compliance with provisions in this SMP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review. A copy of the form is presented in Appendix G.

Material from industrial sites, spill sites, other environmental remediation sites, or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d) and DER-10 Appendix 5 for Restricted Residential SCOs. Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards for imported backfill at this Site is the lesser of NYSDEC Part 375 Restricted Residential SCOs or Protection of Groundwater SCOs. Soils that meet 'general' fill requirements under 6 NYCRR Part 360.13, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC project manager. Soil material will be sampled for the full suite of analytical parameters, including Per- and Polyfluoroalkyl Substances (PFAS) and 1, 4-dioxane. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

D-10 STORMWATER POLLUTION PREVENTION

During excavation activities, barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Depending upon the size of the excavation, silt fencing or hay bales will be installed around the entire perimeter of the construction area.

D-11 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. The NYSDEC project manager will be promptly notified of the discovery.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes [TAL metals, TCL volatiles and semi-volatiles (including 1,4-dioxane), TCL pesticides and PCBs, and PFAS], unless the site history and previous sampling results provide sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC project manager for approval prior to sampling. Any tanks will be closed as per NYSDEC regulations and guidance.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone within two hours to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

D-12 COMMUNITY AIR MONITORING PLAN

The CAMP is included in the HASP (refer to Appendix E). The CAMP will be implemented during excavation at the Site (generally at depths greater than two feet). A figure showing the location of air sampling stations based on generally prevailing wind conditions is shown in Figure 17. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

D-13 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site, since there are residents or tenants on the property. Specific odor control methods to be used on a routine basis will include limiting the extent of open excavations, the use of physical barriers or ventilation systems (i.e., in the event interior excavations are required), or other methods deemed appropriate at the time of the excavation. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

D-14 DUST CONTROL PLAN

Particulate monitoring must be conducted according to the CAMP provided in the HASP (refer to Appendix E). If particulate levels at the site exceed the thresholds listed in the CAMP or if airborne dust is observed on the site or leaving the site, the dust suppression techniques listed below will be employed. The remedial party will also take measures listed below to prevent dust production on the site.

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved using a dedicated on-site water truck, or other available water source of sufficient volume, for road wetting. The equipment will be capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

D-15 OTHER NUISANCES

Under current Site conditions, a plan for rodent control is not warranted. If Site conditions change, and if deemed warranted, a plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing.

As necessary, a plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

APPENDIX E

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

BROWNFIELD CLEANUP PROGRAM
205 – 405 MOUNT HOPE AVENUE
ROCHESTER, NEW YORK
NYSDEC SITE ID C828125

Prepared For:	Erie Harbor, LLC. 183 East Main Street, 6th Floor Rochester, New York 14604
Prepared by:	Day Environmental, Inc. 40 Commercial Street Rochester, New York 14614-1008
Project No.:	4155R-09
Date:	February 2018

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ATTACHMENTS

1.0 INTRODUCTION

This Health and Safety Plan (HASP) outlines the policies and procedures necessary to protect workers and the public from potential environmental hazards posed during remediation activities under the New York State Department of Environmental Protection (NYSDEC) Brownfield Cleanup Program (BCP). The subject property (Site) consists of approximately 6.016 acres of land improved with five four-story apartment buildings (i.e., Townhouses). The property is addressed 205-405 Mt. Hope Avenue, City of Rochester, County of Monroe, New York (NYSDEC Site ID C828125). Figure 1 included as Attachment 1 depicts the general location of the Site. As outlined in this HASP, the above activities shall be conducted in a manner to minimize the probability of injury, accident, or incident occurrence.

Although the HASP focuses on the specific work activities planned for this Site, it must remain flexible due to the nature of this work. Conditions may change and unforeseen situations can arise that require deviations from the original HASP.

1.1 Site History/Overview

The Site is currently vacant and will be developed with residential apartment and townhouse buildings. Five four-story apartment buildings (i.e. Townhouses) with an associated paved parking lot were demolished in 2009. Prior to residential development in about 1975, past uses/activities at the Site included commercial, warehouse, feeder canal, rail yards, a work shop, auto repair, car sales, a wagon shop, a junk-yard and iron cutting facility, a brick storage yard, a tannery, and a coal yard.

The Site is located in a mixed-use urban area. The Site is bounded to the north and east by commercial and residential properties, to the south by City of Rochester park property, and to the west by the Genesee Gateway Park and the Genesee River.

The Site is located in an urban area that is serviced by the public water system. The Monroe County Department of Public Health (MCDPH) has no records of public or private drinking water wells or process water wells within a 0.25-mile radius of the Site. A review of a document titled "Ground Water Resources of Monroe County" (1935) revealed no groundwater supply wells on, or in the immediate area of, the Site.

The Site and surrounding area are generally level. The Genesee River is located at least 90 feet west of the Site. Surface water appears to flow off the Site toward Mount Hope Avenue to the east, and into the City of Rochester sewer system. Groundwater over the majority of the Site generally flows toward the east away from the Genesee River. However, groundwater on the southern portion of the Site generally flows in a southerly direction. These flow directions may be modified locally due to buried utilities, seasonal conditions, or other factors.

Previous environmental work identified that various media (soil, groundwater, soil vapor, fill) on portions of the Site were contaminated with VOCs, SVOCs, metals, and/or PCBs. In 2009 and 2010, these contaminants were remediated to levels that allow restricted residential, commercial, or industrial use of the Site. However, some residual concentrations of these constituents remain on-site that exceed NYSDEC Part 375 Unrestricted Use soil cleanup objectives and/or NYSDEC groundwater standards/guidance values, which will be managed in accordance with institutional controls and engineering controls that have been developed for the Site.

1.2 Planned Activities Covered by HASP

This HASP is intended to be used as a component to the Site Management Plan (SMP) that is required to manage residual contamination at the Site. Currently, identified activities include:

- Intrusive activities during on-going property maintenance;
- Groundwater monitoring to evaluate the effectiveness of the remedy; and
- Miscellaneous tasks that may arise.

This HASP can be modified to cover other site activities as deemed appropriate. The owner of the property, its contractors, and other site workers will be responsible for the development and/or implementation of health and safety provisions associated with normal construction activities or site activities.

2.0 KEY PERSONNEL AND MANAGEMENT

The Project Manager (PM) and Site Safety Officer (SSO) are responsible for formulating and enforcing health and safety requirements, and implementing the HASP on behalf of DAY employees.

2.1 Project Manager

The PM has the overall responsibility for the project and will coordinate with the SSO to ensure that the goals of the remediation program are attained in a manner consistent with the HASP requirements.

2.2 Site Safety Officer

The SSO has responsibility for administering the HASP relative to site activities, and will be in the field full-time while site activities are in progress. The SSO's operational responsibilities will be monitoring, including personal and environmental monitoring, ensuring personal protective equipment maintenance, and assignment of protection levels. The SSO will be the main contact in any on-site emergency situation. The SSO will direct field activities involved with safety and be responsible for stopping work when unacceptable health or safety risks exist. The SSO is responsible for ensuring that on-site personnel understand and comply with safety requirements.

2.3 Employee Safety Responsibility

Each employee is responsible for personal safety as well as the safety of others in the area. The employee will use the equipment provided in a safe and responsible manner as directed by the SSO.

2.4 Key Safety Personnel

The following DAY individuals are anticipated to share responsibility for health and safety of DAY employees at the site.

Project Manager	Jeffrey A. Danzinger
Site Safety Officer	Heather M. McLennan or Sean R. Reese

DAY's safety personnel will share environmental monitoring information, etc. with other on-site entities (e.g., contractors, regulators). However, these other on-site entities are responsible for their own health and safety and should provide their own safety personnel (e.g., SSO) as deemed necessary depending upon the activities they are performing at the Site (refer to Section 3.0).

3.0 SAFETY RESPONSIBILITY

Contractors, consultants, state or local agencies, or other parties, and their employees, involved with intrusive activities at this Site, will be responsible for their own safety while on-site. Their employees will be required to understand the information contained in this HASP, and must follow the recommendations that are made in this document. As an alternative, contractors, consultants, state or local agencies, or other parties, and their employees, involved with this project can utilize their own health and safety plan for this project as long as it is found acceptable to the New York State Department of Health (NYSDOH), MCDPH and/or NYSDEC.

4.0 JOB HAZARD ANALYSIS

There are many hazards associated with intrusive work on a site, and this HASP discusses some of the anticipated hazards for this Site. The hazards listed below deal specifically with those hazards associated with the disturbance of potentially contaminated media (e.g., soil, groundwater, fill, etc.).

4.1 Chemical Hazards

Chemical substances can enter the unprotected body and can cause damage to the point of contact or can act systemically, causing a toxic effect at a part of the body distant from the point of initial contact.

Although the Site has been remediated to meet regulatory criteria for restricted residential, commercial, or industrial use, a list of selected VOCs, SVOCs, and metals that are have been historically detected at the Site are provided below. The remedial work performed to date was successful in reducing/addressing these contaminants to allow redevelopment. This list also presents the Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs), National Institute for Occupational Safety and Health (NIOSH) recommended exposure limits (RELs), and NIOSH immediately dangerous to life or health (IDLH) levels.

CONSTITUENT	OSHA PEL	NIOSH REL	NIOSH IDLH
Dichlorodifluoromethane	1,000 ppm	1,000 ppm	15,000 ppm
Benzene	1 ppm	0.1 ppm	500 ppm
Trichloroethene	100 ppm	25 ppm	1000 ppm
Isopropylbenzene	50 ppm	50 ppm	900 ppm
Toluene	200 ppm	100 ppm	500 ppm
Ethylbenzene	100 ppm	100 ppm	800 ppm
Mixed xylenes	100 ppm	100 ppm	900 ppm
Phenol	5 ppm	5 ppm	250 ppm
Benzo(a)pyrene	0.2 mg/m^3	0.1 mg/m^3	80 mg/m^3
Chrysene	0.2 mg/m^3	0.1 mg/m^3	80 mg/m^3
Bis(2-ethylhexyl)phthalate	5 mg/m^3	NA	5,000 mg/m^3
Benzo(b)fluoranthene	0.2 mg/m^3	0.1 mg/m^3	80 mg/m^3
Benzo(k)fluoranthene	0.2 mg/m^3	NA	80 mg/m^3
1,2,4-Trimethylbenzene	25 ppm	25 ppm	NA
1,3,5-Trimethylbenzene	25 ppm	25 ppm	NA
Naphthalene	10 ppm	10 ppm	250 ppm
Anthracene	0.2 mg/m^3	0.1 mg/m^3	80 mg/m^3
Pyrene	0.2 mg/m^3	0.1 mg/m^3	80 mg/m^3
Antimony	0.5 mg/m^3	0.5 mg/m^3	50 mg/m^3
Arsenic	0.01 mg/m^3	0.002 mg/m^3	5 mg/m^3
Barium	0.5 mg/m^3	0.5 mg/m^3	50 mg/m^3
Beryllium	0.002 mg/m^3	0.0005 mg/m^3	4 mg/m^3
Cadmium	0.005 mg/m^3	NA	9 mg/m^3
Chromium	0.5 mg/m^3	0.5 mg/m^3	250 mg/m^3
Lead	0.05 mg/m^3	0.05 mg/m^3	100 mg/m^3
Mercury	0.1 mg/m^3	0.05 mg/m^3	10 mg/m^3
Nickel	1 mg/m^3	0.015 mg/m^3	10 mg/m^3
Selenium	0.2 mg/m^3	0.2 mg/m^3	1.0 mg/m^3
Thallium	0.1 mg/m^3	0.1 mg/m^3	15 mg/m^3

NA = Not Available

The potential routes of exposure for these analytes and chemicals include inhalation, ingestion, skin absorption and skin/eye contact. The potential for exposure through any one of these routes will depend on the activity conducted. The most likely routes of exposure for intrusive activities that include inhalation and skin contact.

4.2 Physical Hazards

There are physical hazards that might compound the chemical hazards. Hazard identification, training, adherence to the planned Site measures, and careful housekeeping can prevent many problems or accidents arising from physical hazards. Potential physical hazards associated with this Site and suggested preventative measures include:

- Slip/Trip/Fall Hazards - Some areas may have wet surfaces that will greatly increase the possibility of inadvertent slips. Caution must be exercised when using steps and stairs due to slippery surfaces in conjunction with the fall hazard. Good housekeeping practices are essential to minimize the trip hazards.

- Small Quantity Flammable Liquids - Small quantities of flammable liquids may be stored in "safety" cans and labeled according to contents.

- Electrical Hazards - Electrical devices and equipment shall be de-energized prior to working near them. All extension cords will be kept out of water, protected from crushing, and inspected regularly to ensure structural integrity. Temporary electrical circuits will be protected with ground fault circuit interrupters. Only qualified electricians are authorized to work on electrical circuits. Heavy equipment (e.g., backhoe, drill rig) shall not be operated within 10 feet of high voltage lines, unless proper protection from the high voltage lines is provided by the appropriate utility company.

- Noise - Work around large equipment often creates excessive noise. The effects of noise can include:

  - Workers being startled, annoyed, or distracted.

  - Physical damage to the ear resulting in pain, or temporary and/or permanent hearing loss.

  - Communication interference that may increase potential hazards due to the inability to warn of danger and proper safety precautions to be taken.

  Proper hearing protection will be worn as deemed necessary. In general, feasible administrative or engineering controls shall be utilized when on-site personnel are subjected to noise exceeding an 8-hour time weighted average (TWA) sound level of 90 dBA (decibels on the A-weighted scale). In addition, whenever employee noise exposures equal or exceed an 8-hour TWA sound level of 85 dBA, employers shall administer a continuing, effective hearing conservation program as described in the OSHA Regulation 29 CFR Part 1910.95.

- Heavy Equipment - Each morning before start-up, heavy equipment will be inspected to ensure safety equipment and devices are operational and ready for immediate use.

- Subsurface and Overhead Hazards - Before any excavation activity, efforts will be made to determine whether underground utilities and potential overhead hazards will be encountered. Notify Underground Facilities Protective Organization (UFPO) 2 business days prior to excavating or drilling at 811 or (800) 96207962 for utility stakeout.

4.3 Environmental Hazards

Environmental factors such as weather, wild animals, insects, and irritant plants can pose a hazard when performing outdoor tasks. The SSO shall make every reasonable effort to alleviate these hazards should they arise.

4.3.1 Heat Stress

The combination of warm ambient temperature and protective clothing increases the potential for heat stress. In particular:

- Heat rash
- Heat cramps
- Heat exhaustion
- Heat stroke

Site workers will be encouraged to increase consumption of water or electrolyte-containing beverages such as Gatorade® when the potential for heat stress exists. In addition, workers are encouraged to take rests whenever they feel any adverse effects that may be heat-related. The frequency of breaks may need to be increased upon worker recommendation to the SSO.

4.3.2 Exposure to Cold

With outdoor work in the winter months, the potential exists for hypothermia and frostbite. Protective clothing greatly reduces the possibility of hypothermia in workers. However, personnel will be instructed to wear warm clothing and to stop work to obtain more clothing if they become too cold. Employees will also be advised to change into dry clothes if their clothing becomes wet from perspiration or from exposure to precipitation.

5.0 SITE CONTROLS

To prevent migration of contamination caused through tracking by personnel or equipment, work areas, and personal protective equipment staging/decontamination areas will be specified prior to beginning operations.

5.1 Site Zones

In the area where contaminated materials present the potential for worker exposure (work zone), personnel entering the area must wear the mandated level of protection for the area. A "transition zone" shall be established where personnel can begin and complete personal and equipment decontamination procedures. This can reduce potential off-site migration of contaminated media. Contaminated equipment or clothing will not be allowed outside the transition zone (e.g., on clean portions of the Site) unless properly containerized for disposal. Operational support facilities will be located outside the transition zone (i.e., in a "support zone"), and normal work clothing and support equipment are appropriate in this area. If possible, the support zone should be located upwind of the work zone and transition zone.

5.2 General

The following items will be requirements to protect the health and safety of workers during implementation of activities that disturb contaminated material.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and ingestion of contamination shall not occur in the work zone and/or transition zone during disturbance of contaminated material.
- Personnel admitted in the work zone shall be properly trained in health and safety techniques and equipment usage.
- No personnel shall be admitted in the work zone without the proper safety equipment.
- Proper decontamination procedures shall be followed before leaving the Site.

6.0 PROTECTIVE EQUIPMENT

This section addresses the various levels of personal protective equipment (PPE) which are or may be required at this job site. Personnel entering the work zone and transition zone shall be trained in the use of the anticipated PPE to be utilized.

6.1 Anticipated Protection Levels

TASK	PROTECTION LEVEL	COMMENTS/MODIFICATIONS
Site mobilization	D	
Site prep/construction of engineering controls	D	
Extrusive work (e.g., surveying, etc.)	D	
Intrusive work (e.g., excavation work, groundwater monitoring, etc.)	C/Modified D/D	Based on air monitoring, and SSO discretion
Support zone	D	
Site breakdown and demobilization	D	

It is anticipated that work conducted, when there is the potential for encountering residual contaminants, will be performed in Level D or modified Level D PPE. If conditions are encountered that require higher levels of PPE (e.g., Level C, B, or A), the work will immediately be stopped. The appropriate government agencies (e.g., NYSDEC, NYSDOH, etc.) will be notified and the proper health and safety measures will be implemented (e.g., develop and implement engineering controls, upgrade in PPE, etc.).

6.2 Protection Level Descriptions

This section lists the minimum requirements for each protection level. Modifications to these requirements can be made upon approval of the SSO. If Level A, Level B, and/or Level C PPE is required, Site personnel that enter the work zone and/or transition zone must be properly trained and certified in the use of those levels of PPE.

6.2.1 Level D

Level D consists of the following:

- Safety glasses
- Hard hat when working with heavy equipment

- Steel-toed or composite-toed work boots
- Protective gloves during sampling or handling of potentially contaminated media
- Work clothing as prescribed by weather

6.2.2 Modified Level D

Modified Level D consists of the following:

- Safety glasses with side shields
- Hard hat when working with heavy equipment
- Steel-toed or composite-toed work boots
- Work gloves
- Outer protective wear, such as Tyvek coverall [Tyveks (Sarans) and polyvinyl chloride (PVC) acid gear will be required when workers have a potential to be exposed to impacted liquids or impacted particulates].

6.2.3 Level C

Level C consists of the following:

- Air-purifying respirator with appropriate cartridges
- Outer protective wear, such as Tyvek coverall [Tyveks (Sarans) and PVC acid gear will be required when workers have a potential to be exposed to impacted liquids or particulates].
- Hard hat when working with heavy equipment
- Steel-toed or composite-toed work boots
- Nitrile, neoprene, or PVC overboots, if appropriate
- Nitrile, neoprene, or PVC gloves, if appropriate
- Face shield (when projectiles or splashes pose a hazard)

6.2.4 Level B

Level B protection consists of the items required for Level C protection with the exception that an air-supplied respirator is used in place of the air-purifying respirator. Level B PPE is not anticipated to be required for this Site. If the need for level B PPE becomes evident, site activities will be ceased until site conditions are further evaluated, and any necessary modifications to the HASP have been approved by the PM and SSO. Subsequently, the appropriate safety measures (including Level B PPE) must be implemented prior to commencing site activities.

6.2.5 Level A

Level A protection consists of the items required for Level B protection with the addition of a fully-encapsulating, vapor-proof suit capable of maintaining positive pressure. Level A PPE is not anticipated to be required for this Site. If the need for level A PPE becomes evident, site activities will be ceased until site conditions are further evaluated, and any necessary modifications to the HASP have been approved by the PM and SSO. Subsequently, the appropriate safety measures (including Level A PPE) must be implemented prior to commencing site activities.

6.3 Respiratory Protection

Any respirator used during activities associated with residual Site contaminants will meet the requirements of the OSHA 29 CFR 1910.134. Both the respirator and cartridges specified shall be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910). Air purifying respirators shall not be worn if contaminant levels exceed designated use concentrations. The workers will wear respirators with approval for: organic vapors <1,000 ppm; and dusts, fumes and mists with a TWA < $0.05\ mg/m^3$.

No personnel who have facial hair, which interferes with respirator sealing surface, will be permitted to wear a respirator and will not be permitted to work in areas requiring respirator use due to residual Site contaminants.

Only workers who have been certified by a physician as being physically capable of respirator usage shall be issued a respirator for work associated with residual Site contaminants. Personnel unable to pass a respiratory fit test or without medical clearance for respirator use will not be permitted to enter or work in areas that require respirator protection in relation to residual Site contaminants.

7.0 DECONTAMINATION PROCEDURES

This section describes the procedures necessary to ensure that both personnel and equipment are free from contamination when they leave the work site.

7.1 Personnel Decontamination

Personnel involved with activities that involve disturbing contaminated media will follow the decontamination procedures described herein to ensure that material which workers may have contacted in the work zone and/or transition zone does not result in personal exposure and is not spread to clean areas of the Site. This sequence describes the general decontamination procedure. The specific stages can vary depending on the Site, the task, and the protection level, etc.

1. Leave work zone and go to transition zone
2. Remove soil/debris from boots and gloves
3. Remove boots
4. Remove gloves
5. Remove Tyvek suit and discard, if applicable
6. Remove and wash respirator, if applicable
7. Go to support zone

7.2 Equipment Decontamination

Contaminated equipment shall be decontaminated in the transition zone before leaving the Site. Decontamination procedures can vary depending upon the contaminant involved, but may include sweeping, wiping, scraping, hosing, or steam cleaning the exterior of the equipment. Personnel performing this task will wear the proper PPE.

7.3 Disposal

Disposable clothing will be treated as contaminated waste and be disposed of properly. Liquids (e.g., decontamination water, etc.) generated by activities involving residual Site contaminants will be disposed of in accordance with applicable regulations.

8.0 AIR MONITORING

During activities that involve potential exposure to residual Site contaminants, air monitoring will be conducted in order to determine airborne particulate and contamination levels. This ensures that respiratory protection is adequate to protect personnel against the chemicals that are encountered and that chemical contaminants are not migrating off-site. Additional air monitoring may be conducted at the discretion of the SSO. Readings will be recorded and available for review.

The following chart describes the direct reading instrumentation that will be utilized and appropriate action levels.

Monitoring Device	Action level	Response/Level of PPE
Photoionization Detector (PID) Volatile Organic Compound Meter	< 1 ppm in breathing zone, sustained 5 minutes	Level D
	1-25 ppm in breathing zone, sustained 5 minutes	Level C
	26-250 ppm in breathing zone, sustained 5 minutes	Level B, Stop work, evaluate the use of engineering controls
	>250 ppm in breathing zone	Level A, Stop work, evaluate the use of engineering controls
Real Time Aerosol Monitor (RTAM) Particulate Meter	<150 micrograms per meter cubed ($\mu g/m^3$) over an integrated period not to exceed 15 minutes.	Continue working
	>150 $\mu g/m^3$	Cease work, implement dust suppression, change in way work performed, etc. If levels can not be brought below 150 $\mu g/m^3$, then upgrade PPE to Level C.

8.1 Particulate Monitoring

During intrusive activities where contaminated materials may be disturbed on a large scale (e.g., during excavation through contaminated soil or fill), air monitoring will include real-time monitoring for particulates using a Real Time Aerosol Monitor (RTAM) particulate meter at the perimeter of the work zone in accordance with the 1989 NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4031 entitled, "Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites." The TAGM uses an action level of 150 $\mu g/m^3$ (0.15 mg/m^3) over an integrated period not to exceed 15 minutes. If the action level is exceeded, or if visible dust is encountered, then work shall be discontinued until corrective actions are implemented. Corrective actions may include dust suppression, change in the way work is performed, and/or upgrade of personal protective equipment.

8.2 Volatile Organic Compound Monitoring

During activities where contaminated materials may be disturbed, a PID will be used to monitor total VOCs in the ambient air. The PID will prove useful as a direct reading instrument to aid in determining if current respiratory protection is adequate or needs to be upgraded. The SSO will take measurements before operations begin in an area to determine the amount of VOCs naturally occurring in the air. This is referred to as a background level. Levels of VOCs will periodically be measured in the air at active work sites, and at the transition zone when levels are detected above background in the work zone.

8.3 Community Air Monitoring Plan

This Community Air Monitoring Plan (CAMP) includes real-time monitoring for VOCs and particulates (i.e., dust) at the downwind perimeter of each designated work area when activities with the potential to release VOCs or residual Site contaminants on dust are in progress at the Site. This CAMP is based on the NYSDOH Generic CAMP included as Appendix 1A of the NYSDEC document titled *"Draft DER-10, Technical Guidance for Site Investigation and Remediation"* dated December 2002. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of the remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air. Reliance on the CAMP should not preclude simple, common sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Continuous monitoring will be conducted during ground intrusive activities. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, installation of monitoring wells, etc.

Periodic monitoring for VOCs will be conducted during non-intrusive activities such as the collection of groundwater samples from monitoring wells. Periodic monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

8.3.1 VOC Monitoring, Response Levels, and Actions

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

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

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

8.3.2 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the work zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-l0) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

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

Readings must be recorded and made available for NYSDEC, NYSDOH, and MCDPH personnel to review.

9.0 EMERGENCY RESPONSE

To provide first-line assistance to field personnel in the case of illness or injury, the following items will be made immediately available on the Site:

- First-aid kit;
- Portable emergency eye wash; and
- Supply of clean water.

9.1 Emergency Telephone Numbers

The following telephone numbers are listed in case there is an emergency at the Site:

Fire/Police Department:	911
Poison Control Center:	(800) 222-1222
NYSDEC	
Kelly Cloyd	(585) 226-5351
Spills	(585) 226-2466
NYSDOH	
Julia M. Kenney	(518) 402-7860
MCDPH	
John J. Frazer, P.E.	(585) 753-5476
ERIE HARBOR, LLC	
Lucin Meyer	(585) 324-0565
Sandy Gorie	(585) 324-0511
Allen Handelman	(585) 324-0512
DAY ENVIRONMENTAL, INC.	
Jeff Danzinger	(585) 454-0210 x114
Ray Kampff	(585) 454-0210 x108
Nearest Hospital	Highland Hospital 1000 South Avenue Rochester, NY 14620 (585) 473-2200 (Main) (585) 341-6880 (Emergency Department)
Directions to the Hospital:	From Mt. Hope Avenue (NY-15), turn left (east) onto Averill Street and travel approximately 0.3 miles. Turn right (south) onto South Avenue and travel approximately 0.9 miles. Turn left (east) into Highland Hospital and follow signs to the Emergency Department. (refer to Figure 1 in Attachment 1)

9.2 Evacuation

A log of each individual entering and leaving the Site should be kept for emergency accounting practices. Although unlikely, it is possible that a site emergency could require evacuating all personnel from the site. If required, the SSO will give the appropriate signal for site evacuation (i.e., hand signals, alarms, etc.).

All personnel shall exit the site and shall congregate in an area designated by the SSO. The SSO shall ensure that all personnel are accounted for. If someone is missing, the SSO will alert emergency personnel. The appropriate government agencies will be notified as soon as possible regarding the evacuation, and any necessary measures that may be required to mitigate the reason for the evacuation.

9.3 Medical Emergency

In the event of a medical emergency involving illness or injury to one of the on-site personnel, the site should be shut-down and immediately secured. The appropriate government agencies should be notified immediately. The area in which the injury or illness occurred shall not be entered until the cause of the illness or injury is known. The nature of injury or illness shall be assessed. If the victim appears to be critically injured, administer first aid and/or cardio-pulmonary resuscitation (CPR) as needed. Instantaneous real-time air monitoring shall be done in accordance with air monitoring outlined in Section 8.0 of this HASP.

9.4 Contamination Emergency

It is unlikely that a contamination emergency will occur; however, if such a emergency does occur, the Site shall be shut-down and immediately secured. If an emergency rescue is needed, notify Police, Fire Department and Emergency Medical Service (EMS) Units immediately. Advise them of the situation and request an expedient response. The appropriate government agencies shall be notified immediately. The area in which the contamination occurred shall not be entered until the arrival of trained personnel who are properly equipped with the appropriate PPE and monitoring instrumentation as outlined in Section 8.0 of this HASP.

9.5 Fire Emergency

In the event of a fire on-site, the Site shall be shut-down and immediately secured. The area in which the fire occurred shall not be entered until the cause can be determined. All non-essential site personnel shall be evacuated from the site to a safe, secure area. Notify the Fire Department immediately. Advise the Fire Department of the situation and the identification of any hazardous materials involved. The appropriate government agencies shall be notified as soon as possible.

The four classes of fire along with their constituents are as follows:

Class A: Wood, cloth, paper, rubber, many plastics, and ordinary combustible materials.

Class B: Flammable liquids, gases and greases.

Class C: Energized electrical equipment.

Class D: Combustible metals such as magnesium, titanium, sodium, potassium.

Small fires on-site may be actively extinguished; however, extreme care shall be taken while in this operation. All approaches to the fire shall be done from the upwind side if possible. Distance from on-site personnel to the fire shall be close enough to ensure proper application of the extinguishing material, but far enough away to ensure that the personnel are safe. The proper extinguisher shall be utilized for the Class(s) of fire present on the site. If possible, the fuel source shall be cut off or separated from the fire. Care must be taken when performing operations involving the shut-off values and manifolds, if present.

Examples of proper extinguishing agent as follows:

Class A: Water
Water with 1% AFFF Foam (Wet Water)
Water with 6% AFFF or Fluorprotein Foam
ABC Dry Chemical

Class B: ABC Dry Chemical
Purple K
Carbon Dioxide
Water with 6% AFFF Foam

Class C: ABC Dry Chemical
Carbon Dioxide

Class D: Metal-X Dry Powder

No attempt shall be made against large fires. These shall be handled by the Fire Department.

9.6 Spill or Air Release

In the event of spills or air releases of hazardous materials on-site, the Site shall be shut-down and immediately secured. The area in which the spills or releases occurred shall not be entered until the cause can be determined and site safety can be evaluated. All non-essential site personnel shall be evacuated from the Site to a safe and secure area. The appropriate government agencies shall be notified as soon as possible. The spilled or released materials shall be immediately identified and appropriate containment measures shall be implemented, if possible. Real-time air monitoring shall be implemented as outlined in Section 8.0 of this HASP. If the materials are unknown, Level B protection is mandatory. Samples of the materials shall be acquired to facilitate identification.

9.7 Containerized Waste and/or Underground Storage Tanks

In the event that unanticipated containerized waste (e.g., drums) and/or underground storage tanks (USTs) are located during intrusive activities, the Site shall be shutdown and immediately secured. The area where unanticipated containerized wastes and/or tanks are discovered shall not be entered until site safety can be evaluated. Non-essential Site personnel shall be evacuated from the Site to a safe and secure area. The appropriate government agencies shall be notified as soon as possible. The SSO shall monitor the area as outlined in Section 8.0 of this HASP.

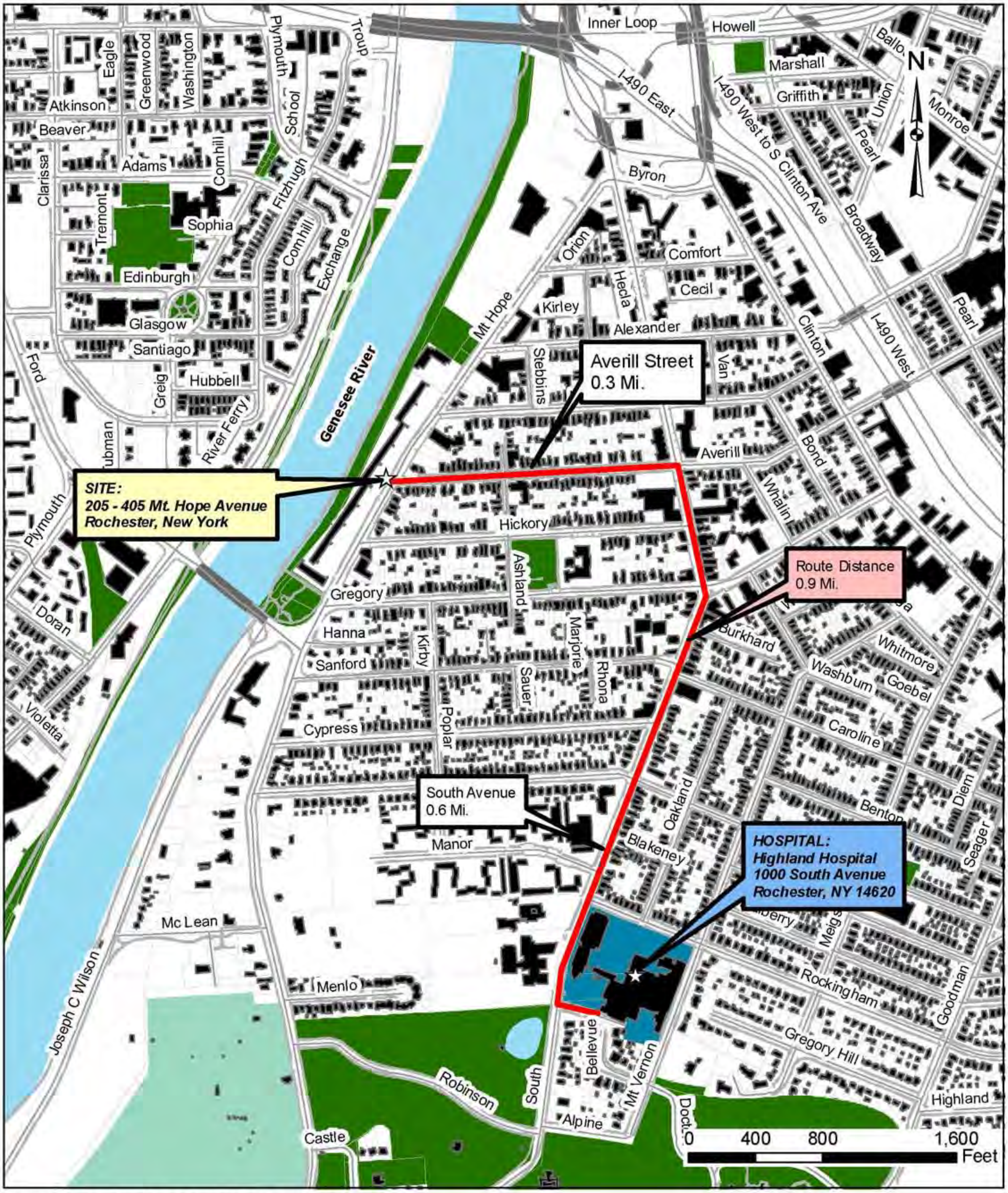
Prior to any handling, unanticipated containers will be visually assessed by the SSO to gain as much information as possible about their contents. As a precautionary measure, personnel shall assume that unlabelled containers and/or tanks contain hazardous materials until their contents are characterized. To the extent possible based upon the nature of the containers encountered, actions may be taken to stabilize the area and prevent migration (e.g., placement of berms, etc.). Subsequent to initial visual assessment and any required stabilization, properly trained personnel will sample, test, remove, and dispose of any containers and/or tanks, and their contents. After visual assessment and air monitoring, if the material remains unknown, Level B protection is mandatory.

10.0 ABBREVIATIONS

BCP	Brownfield Cleanup Program
CAMP	Community Air Monitoring Program
CPR	Cardio-Pulmonary Resuscitation
DAY	Day Environmental, Inc.
dBA	Decibels on the A-Weighted Scale
EMS	Emergency Medical Service
HASP	Health and Safety Plan
IDLH	Immediately Dangerous to Life or Heath
MCDPH	Monroe County Department of Public Health
mg/kg	Milligram per Kilogram
mg/m^3	Milligram per Meter Cubed
MSDS	Material Safety Data Sheet
NIOSH	National Institute of Occupational Safety and Health
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PM	Project Manager
PM-10	Particulate matter less than 10 micrometers in diameter
PPE	Personal Protection Equipment
ppm	Parts Per Million
PVC	Polyvinyl Chloride
REL	Recommended Exposure Limit
RTAM	Real-Time Aerosol Monitor
SCG	Standard, Criteria and Guidance
SSO	Site Safety Officer
SVOC	Semi-Volatile Organic Compound
TAGM	Technical and Administrative Guidance Memorandum
TCE	Trichloroethene
TWA	Time-Weighted Average
$\mu g/m^3$	Micrograms Per Meter Cubed
UST	Underground Storage Tank
VOC	Volatile Organic Compound

ATTACHMENT 1

Figure 1- Route for Emergency Services



Drawing produced from GIS data provided by Monroe County dated 2007.

Date 02-03-2009	**day** DAY ENVIRONMENTAL, INC. Environmental Consultants Rochester, New York 14614-1008 New York, New York 10165-1617	Project Title 205-405 MT HOPE AVENUE ROCHESTER, NEW YORK HEALTH AND SAFETY PLAN	Project No. 4155R-09
Drawn By CPS			FIGURE 1
Scale AS NOTED		Drawing Title ROUTE FOR EMERGENCY SERVICES	

APPENDIX F
QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE PROJECT PLAN

This project-specific Quality Assurance Project Plan (QAPP) was prepared in accordance with Section 2.2 of the New York State Department of Environmental Conservation (NYSDEC) draft DER-10 document for NYSDEC Site ID C828125 (Site). The QAPP provides quality assurance/quality control (QA/QC) protocols and guidance that are to be followed when implementing the Site Management Plan (SMP) for the Site to ensure that data of a known and acceptable precision and accuracy are generated. The QAPP also provides a summary of the remedial project, identifies personnel responsibilities, and provides procedures to be used during sampling of environmental media, other field activities, and the analytical laboratory testing of samples. The components of the QAPP are provided herein.

1.0 Project Scope and Project Goals

The QAPP applies to the aspects of the project associated with the collection of field data, the collection and analytical laboratory testing of field samples and QA/QC samples, and the evaluation of the quality of the data that is generated. Groundwater monitoring will be conducted bi-annually (every two years) until instructed otherwise by the NYSDEC. The groundwater monitoring involves analytical laboratory testing of groundwater samples and the collection of groundwater quality measurements.

2.0 Project/Task Organization

Project organization and tentative personnel to implement the work are outlined in this section of the QAPP.

<u>Principal in Charge</u>

The Principal in Charge is responsible for review of project documents and ensuring the project is completed in accordance with relative work plans. Mr. David D. Day, P.E., a Day Environmental, Inc. (DAY) representative, will serve as the Principle-in-Charge on this project

<u>Project Manager</u>

The Project Manager has the overall responsibility for implementing the project and ensuring that the project meets the objectives and quality standards as presented in this QAPP. Mr. Jeffrey A. Danzinger, a DAY representative, will serve as the Project Manager on this project, and will serve as the primary point of contact and control for the project.

<u>Quality Assurance Officer</u>

The Quality Assurance Officer is responsible for QA/QC on this project. The Quality Assurance Officer’s responsibilities on this project are not as a project manager or task manager involved with project productivity or profitability as job performance criteria. Mr. Bart Kline, P.E., a DAY representative, will serve as the Quality Assurance Officer on this project. The Quality Assurance Officer may conduct audits of the operations at the site to ensure that work is being performed in accordance with the QAPP.

Technical Staff, Subconsultants and Subcontractors

DAY's technical staff for this project consists of experienced professionals (e.g., professional engineers, engineers-in-training, scientists, technicians, etc.) that possess the qualifications necessary to effectively and efficiently complete the project tasks. The technical staff will be used to gather and analyze data, prepare various project documentation, etc. Subconsultants and subcontractors used on this project will consist of firms and companies with experience in the services to be provided.

Analytical Laboratory

It is anticipated that ALS Environmental, Inc. (ALS) located in Rochester, New York will be retained to complete the required analytical laboratory testing of samples as part of this project. ALS is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory (ELAP ID 10145).

Mr. Joe Robar is the Laboratory Director for ALS. The laboratory director is responsible for analytical work and works in conjunction with the Laboratory Supervisor and QA unit regarding QA and chain-of-custody requirements.

Mr. Bill Allgeir of ALS will act as the Laboratory Supervisor on this project. The Laboratory Supervisor will report to the laboratory director and work in conjunction with the laboratory QA unit regarding QA elements of specific sample analyses tasks.

3.0 Sampling Procedures

This section of the QAPP provides the protocols for collection of groundwater samples.

Static water level measurements will be obtained from each well using an oil/water interface meter. DAY will also look for light non-aqueous phase liquid (LNAPL) by using visual observations and the oil/water interface meter at each well location. DAY will document the results of this work in the field.

Passive Diffusion Bag Sampling Method

Subsequent to obtaining static water level measurements and monitoring the wells for free LNAPL, the following passive Diffusion Bag (PDB) sample technique will be used to collect a groundwater sample from each well if only volatile organic compound (VOC) testing is being conducted:

- Remove cap and fill new disposable PDB with deionized water that is provided by the analytical laboratory, then secure cap.
- Connect weight and bottom of braided polypropylene rope to bottom of PDB loop using a zip tie. Connect top of PDB to braided polypropylene rope using a zip tie.
- Measure assembly so that center point of PDB is placed at desired depth of well, and mark top of rope with zip tie.

- Gently lower PDB assembly into well to desired depth and secure rope to well so that PDB is stable at the desired depth.
- No less than 14 days following installation, remove PDB assembly from well, remove PDB cap, and decant water inside PDB into laboratory containers (i.e., 40 ml glass vials containing hydrochloric acid as a preservative.

4.0 Decontamination Procedures

In order to reduce the potential for cross-contamination of samples collected during this project, the following procedures will be implemented to ensure that the data collected (primarily the laboratory data and groundwater quality measurement) is acceptable.

It is anticipated that most of the materials used to assist in obtaining samples will be disposable one-use materials (e.g., sampling containers, bailers, rope, pump tubing, latex gloves, etc.). When equipment must be re-used (e.g., static water level indicator, oil/water interface meter, etc.), it will be decontaminated by at least one of the following methods:

- Steam clean the equipment; or
- Rough wash in tap water; wash in mixture of tap water and alconox-type soap; double rinse with deionized or distilled water; and air dry and/or dry with clean paper towel.

Re-usable equipment will be decontaminated between each use.

When deemed necessary, a temporary decontamination pad will be constructed for decontamination of equipment. Any decontamination pad will be removed following completion of associated activities. Decontamination liquids and disposable equipment and personal protective equipment will be containerized and disposed in accordance with applicable regulations.

5.0 Operation and Calibration of On-Site Monitoring Equipment

The field personnel will be familiar with the equipment being used. Volatile vapor monitoring will be conducted using a PID. It is anticipated that a RAE Systems MiniRAE 2000 PID equipped with a 10.6 eV lamp, or equivalent, will be used during this project. The PID will be calibrated in accordance with the manufacturer's specifications using an isobutylene gas standard prior to use and as necessary during fieldwork. Measurements will be collected in accordance with the protocols outlined in the Health and Safety Plan (HASP).

Other miscellaneous field instruments that may be used during this project include:

- An electronic static water level indicator;
- A low-flow bladder pump system;
- A global positioning system (GPS);
- Survey equipment;
- An oil/water interface meter; and
- A Horiba U-22 water quality meter, or similar.

These meters will be calibrated, operated, and maintained in accordance with the manufacturer's recommendations.

ALS' preventative maintenance procedures and calibration procedures for laboratory equipment are provided in its Quality Assurance Manual (QAM) included in Attachment 1.

6.0 Sample Handling and Custody Requirements

During sampling activities, personnel will wear disposable latex or nitrile gloves. Between collection of samples, personnel performing the sampling will discard used nitrile gloves and put on new gloves to preclude cross-contamination between samples. As few personnel as possible will handle samples or be in charge of their custody prior to shipment to the analytical laboratory.

New laboratory-grade sample containers will be used to collect groundwater samples. Sufficient volume, as specified in ALS' QAM, will be collected to ensure that the laboratory has adequate sample to perform the specified analyses.

Samples will be preserved as specified by the analytical laboratory for the type of parameters and matrices being tested. Sample holding times and preservation protocols will be adhered to during this project.

<u>Chain-Of-Custody</u>

Samples that are collected for subsequent testing as part of this project will be handled using chain-of-custody control. Chain-of-custody documentation will accompany samples from their inception to their analysis, and copies of chain-of-custody documentation will be included with the laboratory's report. The chain-of-custody will include the date and time the sample was collected, the sample identity and sampling location, the requested analysis, and any request for accelerated turnaround time.

<u>Sample Labels</u>

Sample labels for field samples and QC samples with adhesive backing will be placed on sample containers in order to identify the sample. Sample information will be clearly written on the sample labels using waterproof ink. Sufficient sample information will be provided on the label to allow for cross-reference with the field sampling records or sample logbook.

The following information will be provided on each sample label:

- Name of company;
- Initials of sampler;
- Date and time of collection;
- Sample identification;
- Intended analyses; and
- Preservation required.

<u>Custody Seals</u>

Custody seals are preprinted adhesive-backed seals that are designed to break if disturbed. Seals will be signed and dated before being placed on the shipping cooler. Seals will be placed on one or more location on each shipping cooler as necessary to ensure security. Shipping tape will be placed over the seals on the coolers to ensure that the seals are not accidentally broken during shipment. Sample receipt personnel at the laboratory will check and document whether the seals on the shipping coolers are intact when received.

<u>Sample Identification</u>

The following format will be used on the labels affixed to sample containers to identify samples:

Each sample will be numbered starting at 001, and continue in succession (i.e., 001, 002, 003, etc.). The sample test location will also be provided after the sample number using the following test location designations:

DAYMW-	Existing or new monitoring well location
MW-	Existing monitoring well location
TBxx/xx/xx-	Trip Blank with day/month/year
FBxx/xx/xx-	Field Blank (equipment rinsate) with day/month/year

As an example, assuming the first project sample is a groundwater sample collected from monitoring well DAYMW-08, the sample will be designated as 001/DAYMW-08.

<u>Transportation of Samples</u>

Samples will be handled, packaged and shipped in accordance with applicable regulations, and in a manner that does not diminish their quality or integrity. Samples will be delivered to the laboratory no later than 48 hours from the day of collection.

7.0 Analytical Quality Assurance/Quality Control

Analytical laboratory testing will be completed by ALS (NYSDOH ELAP ID #10145). The analytical laboratory test results for post-excavation soil/fill samples and groundwater samples will be reported in NYSDEC Analytical Services Protocol (ASP) Category B deliverable reports. Analytical laboratory test results for soil samples will be reported on a dry-weight basis. ALS will analyze the samples using the lowest practical quantitation limits (PQLs) possible.

ALS will provide internal QA/QC checks that are required by NYSDEC ASP and/or United States Environmental Protection Agency (USEPA) Contract Laboratory Protocol (CLP) protocol, such as analyses performed, spike blanks, internal standards, surrogate samples, calibration standards, and reference standards. Laboratory reports will be reviewed by ALS as outlined in its QAM that is included in Attachment 1, and also by the Quality Assurance Officer.

Laboratory results will be compared to data quality indicators in accordance with ALS' QAM included in Attachment 1 and NYSDEC ASP. Data quality indicators include: precision, accuracy, representation, completeness, and comparability.

The analytical methods to be used for groundwater samples and associated QA/QC samples are identified on Table 1 included in Attachment 2.

In order to provide control over the collection, analysis, review, and interpretation of analytical laboratory data, the following QA/QC samples will be included as part of this project (refer to Table 1 in Attachment 2):

- During the groundwater monitoring, one trip blank will be included per 20 liquid samples, or per shipment if less than 20 samples, when the shipment contains liquid field samples (i.e., groundwater samples) that are to be analyzed by ALS for VOCs. These trip blanks will be analyzed for VOCs.

- One matrix spike/matrix spike duplicate (MS/MSD) will be analyzed during each performance groundwater sampling event for each 20 samples of each matrix that are shipped within a seven-day period. Specific parameters that MS/MSD samples will be tested for by ALS will be dependent upon the test parameters of the samples that are being analyzed.

- One field equipment blank will be collected from a PDB for each sampling event of 20 samples, or per shipment if less than 20 samples. The field blanks will be tested for the test parameters of the samples that are being analyzed by ALS.

<u>Data Usability Summary Report</u>

Data usability summary reports (DUSRs) will be completed on the analytical laboratory data that is generated as part of the scope of work in SMP, to the extent required by the NYSDEC (e.g., analytical laboratory results for two or more bi-annual groundwater monitoring events). Each DUSR will be conducted in accordance with the provisions set forth in Appendix 2B of the Draft DER-10 Technical Guidance for Site Investigation and Remediation dated December 25, 2002. The findings of each DUSR will be incorporated in the corresponding Periodic Review Report (PRR). DUSRs will be completed by a qualified entity or individual that is approved by the NYSDEC.

<u>Reporting</u>

Analytical and QC data will be included in the PRR. The PRR will summarize the remedial work and provide evaluation of the data that is generated, including the validity of the results in the context of QA/QC procedures.

8.0 Record Keeping and Data Management

DAY will document project activities in a bound field book on a daily basis. Information that will be recorded in the field book will include:

- Dates and time work is performed;

- Details on work being performed;
- Details on field equipment being used;
- Visual and olfactory observations during field activities;
- Field meter measurements collected during monitoring activities;
- Sampling locations and depths;
- Measurements of sample locations, and test locations, excavations, etc.;
- Personnel and equipment on-site;
- Weather conditions; and
- Other pertinent information as warranted.

Certain well sampling data will also be presented on designated logs.

The analytical data will be reported as electronic data deliverables (EDDs). Electronic files will be maintained by DAY.

ATTACHMENT 1

ALS Quality Assurance Manual (QAM)

QUALITY ASSURANCE MANUAL

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1. Scope

This Quality Assurance Manual (QAM) describes the policies, procedures and accountabilities established by the Rochester, NY Laboratory of ALS Environmental (ALS) to ensure that the test results reported from analysis of air, water, soil, waste, and other matrices are reliable and of known and documented quality. This document describes the quality assurance and quality control procedures followed to generate reliable analytical data. This QAM applies to Environmental work included in Rochester's scope of accreditation (see Appendix J). This QAM is designed to be an overview of ALS operations. Detailed methodologies and practices are written in ALS Standard Operating Procedures (SOPs). Where appropriate, ALS SOPs are referenced in this document to direct the reader to more complete information.

ALS maintains accreditations pertaining to various commercial and government entities. Each accreditation requires that the laboratory continue to perform at levels specified by the programs issuing accreditation. Program requirements can be rigorous; they include performance evaluations as well as annual audits of the laboratory to verify compliance.

Quality Assurance Policy

ALS is committed to producing legally defensible analytical data of known and documented quality acceptable for its intended use and in compliance with applicable regulatory programs. This QAM is designed to satisfy the applicable requirements of the Various States, United States Environmental Protection Agency (USEPA), TNI Volume 1 2003/2009/2016, ISO/IEC 17025:2017, and DOD QSM 5.4.

ALS corporate management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM and other client and project related requirements.

ALS management reviews its operations on an ongoing basis and seeks input from staff and clients to make improvements. ALS is committed to good professional practice and a high standard of service.

It is the policy of ALS that all employees be familiar with all quality documentation.

Quality System

This QAM and SOPs referenced in this document comprise the ALS management system. This management system includes all quality assurance policies and quality control procedures.

Although verbal communication with employees is essential, written and visual communication through email and computer systems is the cornerstone of effective communication at ALS. Computer workstations throughout the lab provide access to LIMS, Procedures and email systems. All information essential for effective and consistent communication of analytical requirements and details affecting quality is available through these computerized systems.

Ethics and Data Integrity

It is the policy of ALS to perform work for clients in the most efficient manner possible, avoiding waste of resources. It is the role of both ALS management and employees to ensure that work for clients is performed most efficiently and effectively by properly utilizing ALS purchased materials, equipment, and the time and ability of personnel.

It is the policy of ALS to generate accurate and reliable data in accordance with contractual and regulatory requirements. The ALS SOP CE-GEN-001 "Laboratory Ethics and Data Integrity" details ALS policy and includes procedures, policy, and definitions on these topics:

- Any undue pressure applied to employees in the performance of their duties must be reported.
- It is against ALS policy to improperly manipulate or falsify data or to engage in any other unethical conduct.
- Prevention and detection of improper, unethical or illegal actions.
- Reporting and investigation of data manipulation, falsification of data, waste of resources, or other unethical practice or misconduct. For DOD work, the lab will report any instances of inappropriate and prohibited practices to the DOD ELAP Accreditation Body (PJLA) within 15 business days of the discovery, and submit records of associated corrections taken or proposed corrective actions within 30 business days of the discovery,

Laboratory Data Integrity and Ethics Training - initial and annual refresher training on Ethics and Data Integrity is performed for all employees. The training includes the SOP CE-GEN-001. Key topics covered are the critical need for honesty and full disclosure in all analytical reporting, how and when to report data integrity issues, and record keeping. Training includes discussion regarding all data integrity procedures, data integrity training documentation, in-depth data monitoring, and examples of improper actions.

The pertinent ALS Project Manager must approve deviations from contractual requirements. The Project Manager obtains approval for any such deviations, either in writing or by phone (documented in a phone log) from pertinent contract authorities. In addition, ALS requires that deviations from contractual requirements that might affect data quality be reported to clients. Any employee who knowingly manipulates and/or falsifies data or documents or engages in any unethical conduct is subject to immediate release from employment.

2. Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 17025:2017, “General requirements for the competence of testing and calibration laboratories”

TNI 2009 and 2016, VOLUME 1, “MANAGEMENT AND TECHNICAL REQUIREMENTS FOR LABORATORIES PERFORMING ENVIRONMENTAL ANALYSIS”

DoD/DOE QSM, “Department of Defense (DoD), Department of Energy (DOE) Consolidated Quality Systems Manual (QSM) for Environmental Laboratories”

ISO/IEC Guide 99, International vocabulary of metrology — Basic and general concepts and associated terms (VIM1)

ISO/IEC 17000, Conformity assessment — Vocabulary and general principles

3. Terms and Definitions

- Impartiality - presence of objectivity
- Complaint - expression of dissatisfaction by any person or organization to a laboratory, relating to the activities or results of that laboratory, where a response is expected

- Inter-laboratory comparison - organization, performance and evaluation of measurements or tests on the same or similar items by two or more laboratories in accordance with predetermined conditions
- Intra-laboratory comparison - organization, performance and evaluation of measurements or tests on the same or similar items within the same laboratory in accordance with predetermined conditions
- Proficiency testing - evaluation of participant performance against pre-established criteria by means of inter-laboratory comparisons
- Laboratory - body that performs one or more of the following activities:
  - — testing;
  - — calibration;
  - — sampling, associated with subsequent testing or calibration
- Decision rule - rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement
- Verification - provision of objective evidence that a given item fulfils specified requirements
- Validation - verification , where the specified requirements are adequate for an intended use

4. General Requirements

4.1 Impartiality

4.1.1 All employees are required to enter into the following agreements:

- **Code of Conduct Agreement**
  Provides a framework for decisions and actions in relation to conduct in employment. The agreement covers a wide range of topics including personal and professional behavior, conflicts of interest, gifts and favors, confidentiality, legal compliance, security of information, among others. The code of conduct agreement is administered by the USA Human Resources department. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed.

- **Confidentiality Agreement**
  Describes policies for identifying and protecting information owned by ALS and its customers, and for keeping this information in confidence. The confidentiality agreement is administered by the USA Human Resources department. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed.

- **Ethics and Data Integrity Agreement**
  Provided to the employee as part of the hiring and induction process, and reviewed during periodic ethics refresher training. This is coordinated between the Human Resources and Quality Assurance (QA) departments. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed. All employees are required to take annual ethics and data integrity refresher training.

In addition to the agreements, project managers act as a firewall to insulate the analysts from clients so that the lab personnel have no contact with clients. Lab IDs are assigned to samples and used throughout preparation and analysis to make the samples ambiguous to lab personnel. Together these agreements and procedures ensure freedom from undue internal and external commercial, financial, and other pressures or influences that could adversely affect the quality of work. They protect customers' confidential information and ALS' proprietary rights. They ensure avoidance of activities that could diminish confidence in the competence, impartiality, judgment or integrity of any ALS laboratory and staff.

4.1.2 It is the responsibility of all staff to comply with all procedures, be familiar with current management systems and policies, and to record all data as established by management. This and the peer review of all data will ensure that all testing is objective and conflicts of interest do not exist. As a commercial laboratory, the decision making using test results, opinions and interpretation of data is outside the scope of the laboratory activities.

4.2 Confidentiality

All employees signed confidentiality statement upon employment. These are maintained by Human Resources (HR).

Documents provided to the laboratory are held in strict confidence by project management staff. Documents pertaining to quality assurance and analytical requirements are reviewed with appropriate managers and staff through the project specific meetings and LIMS. Project related information provided by clients is securely archived using procedures described in the ALS SOP ADM-ARCH "Record Storage and Archiving."

It is the responsibility of all ALS employees to safeguard sensitive company information, client data, records, and information; and matters of national security concern should they arise. All information, data, and reports collected or assembled on behalf of a client is treated as confidential. Information may not be given to third parties without the consent of the client.

The transmittal of final results is specified by clients and follows those requirements unless specific changes are made by the ALS Project Manager assigned to the client/project.

5. Structural Requirements

5.1 The laboratory, a legal entity, is part of ALS USA Corp. The Laboratory Director reports to the General Manager, Life Sciences, USA. There are other support functions such as human resources, accounting, safety oversight and computer systems that are provided to the laboratory by corporate entities but none of which is responsible for managing laboratory activities. The support functions of this laboratory involved with testing and services are under the direction of the laboratory director.

5.2 The responsibility for this laboratory is under the direction of the laboratory director. Key employees in the management systems are identified in section 5.5.

5.3 This laboratory performs a range of inorganic and organic analyses using EPA SW-846 methods, CWA methodologies, some drinking water methods, and some stack testing methods. This QAM is designed to be an overview of ALS operations. Detailed methodologies and practices are written in ALS Standard Operating Procedures (SOPs). Where appropriate, ALS SOPs are referenced in this document to direct the reader to more complete information.

5.4 ALS is committed to producing legally defensible analytical data of known and documented quality acceptable for its intended use and in compliance with applicable regulatory programs. This QAM is designed to satisfy the applicable requirements of various states, United States Environmental Protection Agency (USEPA), and the normative references in Section 2 of this manual.

5.5 Org Chart and Key personnel-see Appendix B.

5.5.1 ALS Laboratory Director, The Laboratory Director is responsible to ensure:

- ✓ Implementation of quality policy and applicable standards, including communicating to the operation the importance of meeting customer, statutory, and regulatory requirements.
- ✓ Employees have sufficient experience and training to perform QAM-related duties and procedures.
- ✓ That the necessary facilities and equipment are available to meet the commitments of the laboratory.
- ✓ Sample receiving, handling, instrument calibration, sample analysis, and related operational and analytical activities are conducted and documented as described in this QAM, its related Standard Operating Procedures (SOPs), and its referenced methods.
- ✓ That routine QC samples are prepared, analyzed, and reviewed as required by this QAM.
- ✓ That at regular intervals audits are conducted and documented to assess compliance with this QAM.
- ✓ That corrective action is initiated and completed to remedy discrepancies or problems identified in any laboratory process.
- ✓ Management review of all processes and procedures associated with the management system.

5.5.2 ALS Laboratory Supervisor, The Laboratory Supervisor is responsible to ensure the directives of the Laboratory Director are carried out.

5.5.3 Quality Manager, The Quality Manager reports directly to top management and is responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Understand, monitor and evaluate the quality assurance (QA) and quality control (QC) activities described in this QAM and its references, reporting deficiencies and identifying resource requirements to the Laboratory Director.
- ✓ Conduct and document an annual internal audit of laboratory procedures to ensure compliance with this QAM and its references.
- ✓ Conduct an annual update of this QAM and review or update laboratory Standard Operating Procedures (SOPs).
- ✓ Arrange for the analysis of performance evaluation (PE) samples.
- ✓ Maintain a record of ongoing personnel training for QAM-related activities, reporting training deficiencies to the Laboratory Director.
- ✓ Maintain the laboratory documentation of nonconformance, corrective action, preventive action, and improvement programs. Monitor corrective actions.

- ✓ Maintain metrological records, archived logbooks, PT study results.
- ✓ Participate in root cause analysis and approve corrective action reports.
- ✓ Evaluate data in an objective manner, free of outside or managerial influence, including monitoring trends.

5.5.4 Technical Managers, The managers of these operations report directly to Top Management and are responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Read, understand and follow this QAM with its references.
- ✓ Ensure that each set of reported results meets the requirements specified in this QAM and meets the client's requirements as defined in the applicable project requirements. Record the quality of all data reported by the laboratory.
- ✓ Ensure that personnel are trained, authorized and utilized effectively.
- ✓ Ensure that facilities and equipment are maintained and utilized effectively.
- ✓ Ensure that supplies are available and utilized effectively.
- ✓ Immediately report technical and quality problems to the Laboratory Director or Quality Manager.

5.5.5 Project Managers, Project Managers report directly to Top Management. Project Managers are responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Complete and distribute project related information for each project before the laboratory starts work on the project.
- ✓ Immediately communicate to the laboratory changes made to projects in progress and document these changes as appropriate.
- ✓ Respond to client requests for information.
- ✓ Ensure LIMS work orders are reviewed and meet client project requirements before release to the laboratory.
- ✓ Perform a review of results to verify that data reports submitted to the client meet project requirements.
- ✓ Issue test reports

5.5.6 Support Management (Sample Management, Computers (IT), Purchasing, Health and Safety, Human Resources) are responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Read, understand and follow this QAM with its references.
- ✓ Ensure that procedures are followed and meets the client's requirements as defined in the applicable project requirements.
- ✓ Ensure that personnel are trained, authorized and utilized effectively.
- ✓ Ensure that facilities and equipment are maintained and utilized effectively.
- ✓ Ensure that supplies are available and utilized effectively.
- ✓ Immediately report technical and quality problems to the Laboratory Director or Quality Assurance Manager.
- ✓ Training staff to comply with all processes

5.5.7 Deputies - In the case of absence of the Laboratory Director, Technical Director or QA PM, deputies are assigned to act in that role. Deputies must be assigned when Technical Directors are absent for more than 15 consecutive calendar days. If a Technical Director is absent for more than 35 consecutive calendar days, the accreditation authorities must be notified.

Position	Deputy
Lead Technical Director	Another individual meeting the qualifications of a Technical Director
Laboratory Director	Laboratory Supervisor, Lead Technical Director or Regional Director
Quality Manager	Lead Technical Director
Technical Director(s)	Lead Technical Director or Experienced analyst meeting the qualifications of a Technical Director.
Management (CEO, North America Manager, Life Sciences USA Manager, Regional Operations Manager)	One organizational position above current.
Sample Management, IT Manager, Purchasing manager, Project Managers, Health and Safety Manager, Human Resources Manager	Another experienced individual within the affected group.

5.6 It is the responsibility of all technical and support staff to comply with all procedures and be familiar with current quality systems and policies as established by management. At ALS, improvement of the quality systems and preventive action is effected through ongoing systems of review by management using input from all staff. ALS actively seeks employee and client input for improvements through surveys and questionnaires. Internally ALS maintains a process improvement website for employees to provide suggestions for improvements. For clients, ALS surveys and gains feedback on services provided. This input to management is provided from the corporate level. To comply with these requirements all staff are responsible, at a minimum, to the following:

- ✓ Follow project requirements as delineated by project managers to ensure analyses and commitments, including TAT, are performed as requested.
- ✓ Develop knowledge and understanding of the QAM requirements under which samples are handled and tested.
- ✓ Notify managers and Quality Assurance personnel when QA problems arise.
- ✓ Follow Quality Assurance requirements as outlined in the QAM and SOPs.
- ✓ Follow appropriate channels regarding modification of existing SOPs.
- ✓ Maintain accurate electronic and written records.
- ✓ Ensure that applicable data are included in each process in accordance with applicable SOPs.
- ✓ Record all nonconformance.
- ✓ Follow appropriate protocols when the handling and testing does not meet acceptance criteria.
- ✓ Apply integrity and professional judgment when dealing with analytical processes and laboratory operations.

5.7 ALS management is committed to improvements of the management systems through compliance with its own policies and procedures. When changes are planned and implemented, the integrity of the management system is maintained. Changes must be documented in SOPs signed by management, including the Quality Manager, the Technical Director. The management is familiar with the impacts changes may make to other systems and ensures impacts are minimized or accounted for in the change process.

6. Resources Requirements

6.1 General

6.1.1 ALS management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM. The ALS/Rochester staff, consisting of approximately 45 employees, includes chemists, technicians and support personnel. They represent diverse educational backgrounds and experience, and provide the comprehensive skills that the laboratory requires. During seasonal workload increases, additional temporary employees may be hired to perform specific tasks. See Appendix B for organization charts.

6.2 Personnel

6.2.1 It is the responsibility of all staff to comply with all procedures, be familiar with current management systems and policies, and to record all data as established by management. This will ensure that all testing is objective and conflicts of interest do not exist. As a commercial laboratory, the decision making using test results is outside the scope of the laboratory activities. The ALS laboratory employs sufficient personnel to complete required chemical, physical, and biological analyses and support activities.

6.2.2 The ALS training program specified in the ALS SOP ADM-TRAINING includes quality training, technical training, safety training, and other training as described in this QAM. ALS managers are responsible to ensure that all staff training is initiated, completed, verified, and documented.

The specific training and experience of laboratory personnel is documented in individual training files maintained in accordance with ADM-TRAINING and includes records of analytical proficiency through the analysis of QC samples.

Job Descriptions include requirements for education, qualification, training, technical knowledge, skills and experience.

6.2.3 All ALS staff assigned to perform tasks affecting or relating to testing receives training relative to pertinent areas of responsibility, both prior to performing work on client samples and on an ongoing basis. Such training comes from internal and external sources.

6.2.5 Laboratory personnel have resources needed to carry out their duties. See 5.6. Technical Directors at ALS Rochester may not also be a Technical Director at another laboratory without authorization from the primary accrediting bodies.

6.2.5 When the laboratory management determines a need for personnel in the organization, the management determines the goals for the position, the requisite educational, experience and skill requirements, and works with human resources to post the position, screen potential candidates against the job description and forward qualified candidates to the hiring manager for interview. The supervisor for the position is defined. The organization chart shows the supervision structure. Each employee is supervised to the extent required to ensure adherence to the management system and ALS policies. It is the responsibility of the supervisor to authorize staff to perform specific laboratory activities. Records are retained for the pertinent authorizations by the Quality Assurance department. The supervisor monitors the competence of personnel throughout the course of work and performs an annual performance review.

Minimum requirements based on current accreditations:

Position	Education	Experience
Lead Technical Director (may be named as Laboratory Director or Laboratory Supervisor for state requirements)	Bachelors degree in biology, chemistry, or closely related field plus 30 college credits in chemistry.	3 years in an environmental analysis lab, 24 months chemical analysis of representative organic and inorganic methods supervised
Technical Director - Chemistry	Bachelors degree in biology, chemistry, or closely related field plus 30 college credits in chemistry.	2 years in an environmental analysis lab, 12 months chemical analysis of representative organic and inorganic methods supervised
Technical Director - Microbiology	Associates degree in science with 4 credits in microbiology	1 year of environmental microbiological experience
Quality Manager		Have documented training and/or experience in QA/QC procedures and the laboratory quality system. Have a general knowledge of analytical methods in use in the lab.
Instrumentation Analysts	H.S. diploma plus 8 college credits in chemistry	none
Analysts	High School Diploma	none

6.3 Facilities and Environmental Conditions

6.3.1 ALS management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM.

6.3.2 Records are maintained for the requirements and conditions necessary for method and regulatory compliance in the facility.

6.3.3 Records are retained with analytical data for monitoring and control of environmental conditions relevant to method and regulatory specifications.

6.3.4 See Appendix D for floor plan.

The ALS Rochester facility features over 23000 square feet of laboratory and administrative workspace at its Rochester, NY location. To maintain facility security and thus sample security, entrance to the ALS facility can be attained only through security access (keytag proximity reader), except at the main business entrance and sample receiving entrance; these are open only during normal business hours and monitored by the receptionist at the business entrance and Sample Receipt Technicians at the sample receiving entrance. All non-employees are required to sign in with the receptionist at the main entrance. The laboratory accommodations and environmental condition design provides safeguards against cross-contamination of samples and is arranged according to work function, which enhances the efficiency of analytical operations. The ventilation system has been specially designed to meet the needs of the analyses performed in each work space. The organics extraction area is physically separated from the Volatile instrument area and the Volatiles instrument room is positively pressured to minimize cross contamination. ALS further minimizes laboratory contamination sources by employing janitorial staff to ensure good housekeeping. Facilities maintenance is performed by qualified contractors.

Each area in the laboratory has adequate lighting, temperature control, bench space, access to sinks, hot and cold water, reagent water, gasses, suction, electrical outlets, chemical storage, fume hoods, ventilation, eyewashes, fire extinguishers, and aisle space as needed for instrumentation, safety, and for the processes assigned to that area.

Fume hoods have visual indicators to ensure flow is maintained during use and are performance tested semi-annually.

All safety inspection records are kept on file for a minimum of five years.

6.4 Equipment

6.4.1 A comprehensive list of major instrumentation, support equipment, and associated computer hardware and software utilized at ALS is included in Appendix E. Redundant instruments are maintained for particular analyses. The method SOPs detail the reagents and standards, minor equipment and supplies and reference information needed for performing the analysis.

6.4.2 Laboratory equipment items such as analytical balances, pipets, and thermometers are verified against reference standards rather than reference materials. Laboratory reference weights and thermometers are certified by ISO accredited vendors against ISO or National Metrology Institute (NMI) traceable standards. Analytical balances are serviced on an annual basis by a professional metrology organization (currently Precision Scale and Balance). New certificates of calibration for each balance are issued to the laboratory on an annual basis. The calibration of each analytical balance is checked by the user each day of use with Class-1 verified weights bracketing the working range. The reference weights are verified annually against the balance vendors certified weights. Bound record books are kept which contain the recorded measurements, identification and location of equipment, acceptance criteria and the initials of the user who performed the checks. See SOP SMO-DALYCK for instructions and further information. All support equipment is maintained in proper working order and verified. For volumetric verifications refer to ADM-PCAL "Mechanical Volume Dispensing Devices, Volumetric and Non-Volumetric Labware".

6.4.3 Temperature Control Devices

Temperatures are monitored and recorded for all of the temperature-critical support equipment such as refrigerators, freezers, ovens, and incubators. Units are equipped with stand-alone data logging thermometers with audible alarms. The procedure for performing these measurements is provided in the *SOP for Calibration Check Procedures for Support Equipment (SOP ADM-DALYCK).* The SOP also includes the use of acceptance criteria and correction factors. Customers are notified of catastrophic failure of storage equipment when their samples were potentially impacted and whenever corrective action is not taken within 24 hours of system notification of an out-of-control storage equipment condition.

Where the operating temperature is specified as a test condition the temperature is recorded on the raw data.

6.4.4 Water Purification System

ALS uses a Siemens water purification system designed to produce reagent water meeting method specifications. The system consists of a series of pumps, filters, and resin beds designed to yield water meeting the specifications of ASTM Type II water, and *Standard Methods for the Examination of Water and Wastewater* (SM1080, 20th Ed.) *High Quality* water. The system is maintained by Evoqua Water Systems.

The conductivity is checked by the laboratory every business day using the systems in-line meter. When the lab analyzes samples for conductivity, the DI system is checked with the Method Blank on a meter calibrated according to GEN-120.1. This serves as a check of the in-line meter. Other checks are performed regularly by the subcontracted water system service (Evoqua). These checks are discussed further in ADM-DALYCK. The laboratory may use the results of laboratory method blanks for impromptu checks of TOC, TDS, and chloroform if a problem is suspected. The water in the volatiles department is further purified by a Millipore polishing system.

6.4.5 Routine maintenance is performed on laboratory instruments and equipment according to manufacturer recommendations. Maintenance is provided under warranty, through service contracts, and by ALS in-house personnel. Records of routine maintenance, emergency maintenance, and a return to control are kept with the instruments in hardcopy or electronic maintenance logbooks according to SOP ADM-DATANTRY "Making Entries and Control of Records". The preventive maintenance schedule is included in Appendix E.

6.4.6 Calibration program - All instruments are calibrated or verified before use, using reference materials with traceability established. Specific calibration requirements are detailed in the method SOP and support equipment SOP and comply with method and regulatory requirements. Equipment is labelled with a unique ID that is traceable to its status of calibration, including the date when last calibrated. The SOPs detail the equipment calibration verification criteria and when recalibration is due. Support equipment is labelled with expiration dates if applicable.

6.4.7 The instrument manuals are provided in electronic format usually in the software programs, CDs, and available on network drives. Software is controlled through licensing and is the responsibility of computer support to maintain licenses required. Hardcopy manuals for older instruments are kept near the instrument or on a shelf designated for equipment manuals.

6.4.8 Equipment that has been subjected to overloading or mishandling, gives questionable results, or has been shown to be defective or outside specified requirements, is taken out of service. It shall be recalibrated and not returned to service until it has been verified to perform correctly. The laboratory shall examine the effect of the defect or deviation from specified requirements and shall notify clients or reanalyze samples as applicable and appropriate.

6.4.9 All reference materials ordered by ALS have available documentation of purity, traceability and uncertainty.

6.4.10 Records of instruments are retained and include specifications, manufacturer, serial numbers, identification, software version, firmware version, location, status and the date of purchase.

6.4.11 Records of calibration, reference materials used, calibration checks or verifications are kept with analytical data.

6.4.12 Passing verification criteria ensures that unintended adjustment of equipment is identified.

6.5 Metrological Traceability

6.5.1 All measurements made by the laboratory require an unbroken chain to NMI, Reference Standards or Reference Materials.

6.5.2 Reference Standards and Reference Materials

a) Reference Standards

Reference standards used by the laboratory are calibrated at determined intervals by outside vendors for the following equipment. These reference standards are maintained under the control of QA personnel and are used for verifying intermediate materials used by the laboratory. Quality Assurance is responsible for maintaining records and schedules of calibration.

- Reference Thermometers
- Reference Weights
- Intermediate checks are used in the laboratory to verify performance of support equipment and are verified to traceable reference standards. Records of such verifications are retained by Quality Assurance.

b) Reference Materials

Reference materials used at ALS must be of the grade or quality specified by the pertinent analytical procedure or methodology.

Purchased reference materials must be traceable to a National Metrology Institute (NMI) or equivalent national or international standards where possible.

Stock solutions and calibration standard solutions are prepared fresh as often as necessary according to their stability. All standard solutions are properly labeled with standard name, analyte concentration, solvent, date, preparer, and expiration date; these entries are also recorded in the appropriate logbook(s) following ADM-DATANTRY. To ensure traceability, all standards are labeled with an in-house code that can be traced back to the original stock standard received by the vendor and thus, the certificate of analysis. Prior to introduction into the analytical system/process, reference materials are verified for accuracy with a second, independent source of the material. In addition, the independent source of reference material is also used to check the calibration standards for signs of deterioration. All standards, reagents and reference materials shall be stored per analytical SOP requirements to ensure their integrity. Safe handling and transportation of these materials are discussed in the respective analytical SOP and/or Laboratory Safety Manual. Standards and reference materials are stored separately from samples, extracts, and digestates.

6.5.3 Reference Standards are calibrated by vendors certified to ISO/IEC 17025:2017. ALS uses reference materials from ISO Guide 34:2009 or ISO/IEC 17034:2010 accredited vendors whenever possible.

Second source reference materials are purchased and used in the testing process as an independent verification of primary reference materials. The secondary reference material does not require accredited vendors.

6.6 Externally Provided Products and Services

6.6.1 Analytical services are subcontracted when the laboratory needs to balance workload or when the requested analyses are not performed by the laboratory. Subcontracting is only done with the knowledge and approval of the client and to qualified laboratories. Subcontracting to another ALS laboratory is preferred over external-laboratory subcontracting. Subcontracting is done using capable and qualified laboratories, qualified using established procedures. These procedures are described in the *SOP for Qualification of Subcontract Laboratories (ADM-SUBLAB)*. ALS accepts responsibility to the customer for the subcontractor's work unless the customer or a regulatory authority specified which subcontractor was to be used.

6.6.2 ALS SOP ADM-PUR "Procurement and Control of Laboratory Services and Supplies" outlines the process, evaluation, criteria and records maintained from the evaluation and reevaluation of supplies and services. ALS uses vendors which supply the level of quality required to perform testing activities. ALS maintains a relationship with multiple vendors and uses vendors with comparable certifications or accreditations. The quality level of reagents and materials (grade, traceability, etc.) required is specified in analytical SOPs. Department supervisors ensure that the proper materials are ordered, using an electronic system which requires approval by ALS Operations Management. Any changes to the order by the purchasing department must be approved by the department supervisors prior to ordering. Inspection and verification of material received is performed at the time of receipt by receiving personnel. The receiving staff labels the material with the date received, assigns the material an internal lot number and records the receipt. Expiration dates are assigned as appropriate for the material. Storage conditions and expiration dates are specified in the analytical SOP. *ADM-PUR* provides default expiration requirements. Supplies and services that are critical in maintaining the quality of laboratory testing are procured from pre-approved vendors. The lab must communicate any necessary specifications to the external provider. If the product or service is not meeting the laboratory's requirements, actions must be taken to return the laboratory to the standard of quality needed from a vendor.

Consumable reference materials routinely purchased by the laboratories (e.g., analytical standards) are purchased from nationally recognized, reputable vendors. All vendors have fulfilled the requirements for ISO 9001 certification and/or are accredited by a nationally recognized Accrediting Body (typically A2LA or ANAB). ALS relies on a primary vendor (currently Fisher Scientific) for the majority of its analytical supplies. Consumable primary stock standards are obtained from certified commercial sources or from sources referenced in a specific method. Supelco, Ultra Scientific, AccuStandard, Chem Services, Inc., Aldrich Chemical Co., Baker, Spex, etc. are examples of the vendors used. Reference material information is recorded in the appropriate logbook(s) and materials are stored under conditions that provide maximum protection against deterioration and contamination. The logbook entry includes such information as an assigned logbook identification code, the source of the material (i.e. vendor identification), solvent (if applicable) and concentration of analyte(s), reference to the certificate of analysis and an assigned expiration date. The date that the standard is received in the laboratory is marked on the container. See ADM-PUR for more detailed information. Receipt procedures include technical review of the purchase order/request to verify that what was received is identical to the item ordered. The laboratory checks new lots of reagents for unacceptable levels of contamination prior to use in sample preservation, sample preparation, and sample analysis by following the requirements in ADM-PUR.

7. Process Requirements

7.1 Review of Requests Tenders and Contracts

Requests for new work are reviewed prior to signing any contracts or otherwise agreeing to perform the work. The specific analytical methods to be used are agreed upon between the laboratory and the client. A capability review is performed to determine if the laboratory has or needs to obtain certification to perform the work, to determine if the laboratory has the resources (personnel, equipment, materials, capacity, skills, expertise) to perform the work, and if the laboratory is able to meet the client's required reporting and QC limits. The results of this review are communicated to the client and any potential conflict, deficiency, lack of appropriate accreditation status, lack of appropriate method (incorrect, obsolete or improper) or concerns of the ability to complete the client's work are resolved. Any differences between the request or tender and the contract shall be resolved before any work commences. The client should be notified at this time if work is expected to be subcontracted. Each contract shall be acceptable both to the laboratory and the client. Records are maintained of pertinent discussions with a client relating to the client's requirements or the results of the work. If a contract needs to be amended after work has commenced, the contract review process is repeated and any amendments are communicated to all affected personnel. Changes in accreditation status affecting ongoing projects must be reported to the client. Revocation, suspension, or lapse of accreditation in part or full must be communicated to applicable clients as soon as possible (within 48 hours for PA).

When a customer requests a modification to an SOP, policy, or standard specification the Project Manager will discuss the proposed deviation with the Laboratory Director, and department manager (if applicable) to obtain approval for the deviation. The Quality Manager may also be involved. All project-specific requirements must be on-file and with the service request upon logging in the samples. The modification or deviation must be documented and it must not impact the integrity of the laboratory or the validity of the results. Waivers from DOD QSM requirements must be requested in writing from the DoD Chemist or Contractor on a project-specific basis and include technical justification. A Project-Specific Communication Form, or similar, may be used to document such deviations.

Project Managers are responsible for maintaining, archiving, and retrieving all contracts, project requirements and QAPPs provided to ALS by clients and related to projects completed by ALS. Specific procedures for client communication and required documentation are listed in the ALS SOP ADM-PCR "Project Manager Duties and Report Review."

7.2 Selection, Verification, and Validation of Methods

7.2.1 Published Methods - ALS employs methods and analytical procedures from a variety of external sources. The primary method references are: USEPA SW-846, Third Edition and with Updates and online updates for hazardous waste samples, and USEPA 600/4-79-020, 600/4-91-010, 600/4-82-057, 600/R-

93/100, 600/4-88-039, 600/R-94-111, EPA 40CFR parts 136 and 141, and Supplements; and *Standard Methods for the Examination of Water and Wastewater* for water and wastewater samples. Complete citations for these references can be found in Appendix K. Other published procedures, such as state-specific methods, program-specific methods, or in-house methods may be used. Several factors are involved with the selection of analytical methods to be used in the laboratory. These include the method detection limit, the concentration of the analyte being measured, method selectivity, accuracy and precision of the method, the type of sample being analyzed, and the regulatory compliance objectives. The implementation of methods by ALS is described in SOPs specific to each method. A list of NELAP-accredited methods is given in Appendix J.

7.2.2 Standard Operating Procedures (SOPs) - ALS maintains SOPs for use in both technical and administrative functions. An SOP is available for each accredited method. SOPs are written following standardized format and content requirements as described in the *SOP for Preparation of Standard Operating Procedures (ADM-SOP)*. Each SOP is reviewed and approved by a minimum of two managers (the Technical Director and the Quality Assurance Program Manager). All technical SOPs undergo a documented annual review to make sure current practices are described. The QA Manager maintains a comprehensive list of current SOPs. The SOP list is in Appendix G. The document control process ensures that only the most currently prepared version of an SOP is being used. The QA Manual, QAPPs, SOPs, standards preparation logbooks, current methodology, maintenance logbooks, et al., are controlled documents. The procedures for document control are described in the *SOP for Document Control* (ADM-DOC_CTRL). All controlled documents are readily available to all personnel on the ALS Rochester Intranet.

7.2.3 Modified Procedures - ALS policy is that all SOPs be compliant with the reference method. When several methods are referenced in an SOP, all procedures must be compliant with all referenced methods. All SOPs include a section describing changes and clarifications from the reference method. In the event that an analytical method is modified, the SOP documentation must include a description of the modification, any justification of the method modification which includes, but is not limited to, method performance and recovery data, any other supporting data, and approval from the Technical Managers, Quality Manager, and Laboratory Director. In the event that an analytical method must be modified or is modified from the SOP to perform on specific sample matrices, the modification and reason must be stated in the case narrative. Modified methods will be identified on the analytical report. Modifications allowed by EPA are not reported as modifications, but the modification and justification are documented in the SOP.

When a customer requests a modification to an SOP (such as a change in reporting limit, addition or deletion of target analyte(s), etc.), the project chemist handling that project must discuss the proposed deviation with the department manager in charge of the analysis and obtain their approval to accept the project. The project chemist is responsible for documenting the approved or allowed deviation from the SOP by placing a detailed description of the deviation attached to the quotation or in the project file and also providing an appropriate comment on the service request when the samples are received.

For circumstances when a deviation or departure from company policies or procedures involving any non-technical function is found necessary, approval must be obtained from the appropriate supervisor, manager, or other level of authority. Frequent departure from policy is not encouraged. However, if frequent departure from any policy is noted, the Laboratory Director will address the possible need for a change in policy.

7.2.4 Validation - The policy of ALS is to apply analytical methods that have been approved, validated, and published by government agencies, professional societies and organizations, respected private entities, and other recognized authorities. These methods have been validated for their intended use and ALS uses the demonstration of competency procedures, calibration of instruments and sensitivity determination procedures to verify laboratory capability.

Published methods may be modified as a result of the request of the client or operational conditions prevailing in the laboratory. Operational conditions might relate to, for example, the availability of equipment or the performance of the method as determined by calibration processes, detection limits, or the results obtained for quality control samples.

Validation procedures describe three different classifications of validations for method modification. New methods, permanent modifications to a published method which will be used in subsequent laboratory determinations, and temporary modifications applied only to immediate analytical projects. These methods are used with approval from the clients.

The essential quality control elements for modification and validation include:

Calibration - Performance and acceptance criteria must meet or exceed requirements of ALS SOP ADM-ICAL “Initial Calibration”. The initial calibration demonstrates a concentration range where the analyte response is proportional to concentration.

Demonstration of Capability (Precision and Bias) - QC samples prepared in the specific matrix, are assessed. If possible the recoveries are compared to method or historical control limits used for the reference method. All analytical methods and preparatory method combinations are routinely evaluated statistical control limits and reporting limits. The ALS SOP ADM-CTRL_LIM “Control Limits and Trending” describes how control limits are established and updated.

Sensitivity -. Method Detection Limits (MDL) for methods performed at ALS are determined during initial method set up and are verified or reestablished annually. The MDL will also be verified or reestablished if any significant changes are made to the analytical system. MDL procedures follow 40CFR136 Appendix B. Limit of detection (LOD) verification and Limit of quantitation (LOQ) verification is performed on every instrument used in the analysis. The sensitivity procedures are found in the *SOP ADM-MDL “Establishing Method Detection Limits, Limits of Detection and Limits of Quantitation (ADM-MDL)*.

The Method Reporting Limit (MRL) is the lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions (i.e. limit of quantitation- LOQ). The MRL cannot be lower than the lowest calibration standard.

Current MDLs and MRLs are available from the laboratory. They were established using SOP, ”Establishing Method Detection Limits, Limits of Detection, and Limits of Quantitation.”

7.3 Sampling

The quality of analytical results is highly dependent upon the quality of the procedures used to collect, preserve and store samples. ALS recommends that clients follow sampling guidelines described in 40 CFR 136, 40 CFR 141, USEPA SW-846, and state-specific sampling guidelines, if applicable. Sampling factors that must be taken into account to insure accurate, defensible analytical results include:

- Amount of sample taken
- Type of container used
- Type of sample preservation
- Sample storage time
- Proper custodial documentation

ALS uses the sample preservation, container, and holding-time recommendations published in a number of documents. The primary documents of reference are: USEPA SW-846, Third Edition and Updates I, II, IIA, IIB, III, IV, V and New Methods for hazardous waste samples; USEPA 600/4-79-020, 600/4-91-010, 600/4-82-057, 600/R-93/100, 600/4-88-039, 600/R-94-111, and Supplements; EPA 40CFR parts 136 and 141; and *Standard Methods for the Examination of Water and Wastewater* for water and wastewater samples (see Section 18 for complete citations). The container, preservation and holding time information for these references is summarized in Appendix F for soil, water, and drinking water.

ALS routinely provides sample containers with appropriate preservatives for our clients. Containers are purchased as precleaned to a level 1 status, and conform to the requirements for samples established by the USEPA. Certificates of analysis for the sample containers are available to clients if requested. Reagent water used for sampling blanks (trip blanks, etc.) and chemical preservation reagents are pretested by the laboratory to ensure that they are free of interferences and documented. Our sample kits typically consist of foam-lined, precleaned shipping coolers, (cleaned inside and out, rinsed thoroughly and air-dried), specially prepared and labeled sample containers individually wrapped in protective material, chain-of-custody (COC) forms, and custody seals. Container labels and custody seals are provided for each container. The proper preservative is typically added to the sample containers prior to shipment, unless otherwise instructed by the client.

See SOP, SMO-BPS for more specific information regarding the packing and shipping of sample kits. See SOP, SMO-GEN for the Sample Acceptance Policy.

ALS keeps client-specific shipping requirements on file and utilizes major transportation carriers to guarantee that sample shipping requirements (same-day, overnight, etc.) are met. ALS also provides courier service that makes regularly scheduled trips to the Rochester, Syracuse and Buffalo areas.

7.4 Handling of Test Items

Standard Operating Procedures (SMO-GEN) are established for the receiving of samples into the laboratory. These procedures ensure that samples are received and properly logged into the laboratory, and that all associated documentation, including chain of custody forms, is complete and consistent with the samples received.

Once samples are delivered to the ALS sample management office (SMO), a Cooler Receipt and Preservation Check Form is used to assess the shipping cooler and its contents as received by the laboratory personnel. Verification of sample integrity includes the following activities:

- Assessment of custody seal presence/absence;
- Temperature of sample containers upon receipt;
- Chain of custody documents properly used (entries in ink, signature present, etc.);
- Sample containers checked for integrity (broken, leaking, etc.);
- Sample is clearly marked and dated (bottle labels complete with required information);
- Appropriate containers (size, type) are received for the requested analyses;
- Sample container labels and/or tags agree with chain of custody entries (identification, required analyses, etc.);
- Assessment of proper sample preservation; and
- VOC containers are inspected for the presence/absence of bubbles. (Assessment of proper preservation of VOC containers is performed by lab personnel).

Samples are logged into a Laboratory Information Management System (LIMS). Any anomalies or discrepancies observed during the initial assessment are recorded on the CRPF and COC documents. Potential problems with a sample shipment are addressed by contacting the client and resolving the pertinent issues.

During the login process, each sample container is given a unique laboratory code. The laboratory code consists of the local ALS laboratory, the year in which the samples were logged, a folder number unique to the job, and an extension for the sample number within that job. The format of the laboratory code is as follows:

e.g. Lab Code R2203233-001 =

R - Rochester
22 - Year 2022
03233- Folder Number (sequential number of jobs logged in that year)
001 – Sample number in that Folder.

The LIMS generates a Summary that contains client information, sample descriptions, sample matrix information, required analyses, sample collection dates, analysis due dates and other pertinent information. The service request is reviewed by the appropriate Project Chemist for accuracy, completeness, and consistency of requested analyses and for client project objectives.

Sample Storage and Security

Following receipt, samples are stored in accordance with analytical method requirements until they undergo analysis, unless otherwise specified, using various refrigerators or freezers, or designated secure areas. ALS/Rochester has two walk-in cold storage units which house the majority of sample containers received at the laboratory. The storage areas for VOC samples are monitored using storage blanks, as described in the *SOP for Volatile Storage Blanks (VOC-BLANK)*. ALS also has freezers capable of storing samples at -20° C. The temperature of each sample storage unit is monitored. Recording thermometers placed in refrigerators provide a record of the storage conditions to which samples are exposed.

Unless other arrangements have been made in advance, most aqueous and soil samples are retained at 0-6°C in refrigerators for at least 30 days from receipt. Samples are required to be held for at least 60 days. Samples removed from the refrigerators are moved to an ambient temperature storage room as needed for an additional 30 days. Upon expiration of these time limits, the samples are either returned to the client or disposed according to approved disposal practices. All samples are characterized according to hazardous/non-hazardous waste criteria and are segregated accordingly. All hazardous waste samples are disposed of according to formal procedures outlined in the Sample Disposal SOP (SMO-SPLDIS). All waste produced at the laboratory, including the laboratory's own various hazardous waste streams, is treated in accordance with all applicable local and Federal laws. The bar coding system used to track samples through the lab, including disposal, produces cradle to grave sample history for each sample aliquot.

To maintain facility security and thus sample security, entrance to the ALS facility can be attained only through security access, except at the main business entrance; this is open only during normal business hours and monitored by the receptionist. All non-employees are required to sign in with the receptionist at the main entrance. The entrance to the Sample Receiving area remains locked and is opened by the sample receiving personnel only to receive samples. The ALS facility is equipped with an alarm system.

Sample Tracking and Custody

Sample custody transfer at the time of sample receipt is documented using chain-of-custody (COC) forms accompanying the samples.

Facility security is described in the previous section.

A bar-coding system is used to document internal sample tracking. The system uniquely identifies the sample container. The system can be used for a full internal custody record if the client notifies the lab of the need of Legal Chain of Custody. The procedures are described in the *SOP for Sample Tracking and Internal Chain of Custody (SMO-ICOC).*

7.5 Technical Records

7.5.1 The generation, compilation, reporting, and archiving of data is a critical component of laboratory operations. In order to generate data of known and acceptable quality, the quality assurance systems and quality control practices (including electronic data systems) must be complete and comprehensive and in keeping with the overall quality assurance objectives of the organization.

Original raw data is obtained electronically, whenever possible. When manual recording of data is necessary, direct manual entry to a spreadsheet is preferable to handwritten records. When handwritten records are used, it is typically for entries to logbooks for support equipment, maintenance logs, or standard and reagent preparation logs. Laboratory notebook entries are standardized following the guidelines in the *SOP for Making Entries and Control of Records* (ADM-DATANTRY). Entries made into laboratory notebooks are reviewed and approved by the appropriate supervisor at a regular interval.

The SOP for *Data Archiving* (ADM-ARCH) describe what records are maintained, how and where they are maintained, how long they are maintained, and how they are disposed.

In the event that the laboratory transfers ownership or goes out of business, laboratory records shall be retained for the contracted period and clients shall be notified prior to early destruction or disposal or samples or data. Samples may be shipped to another network location under client approval. Accrediting authorities shall be notified as soon as possible.

The control of electronic records are described in the following:

- **Information Management Systems** -ALS currently uses StarLIMS v.9 throughout the laboratory. This data management and retrieval system is deployed via Citrix XenApp Server from a centralized application server farm located in Portland, OR. This LIMS system utilizes Oracle 10g R1 as its database server, which runs on a Linux Operating System. The system allows the user to acquire data from instrumentation and to generate ASCII, spreadsheet, database, and/or print files. The ALS Laboratory Information Management System (LIMS) is used to manage sample information, sample tracking, sample workload projections, sample result storage, reporting, and invoicing. The LIMS is used to track the status of a sample and is important in maintaining internal chain of custody. Access is controlled by password. The laboratory will notify the customer prior to changes in LIMS software or hardware configuration if the change will adversely affect customer electronic data. The LIMS is inspected annually by the Quality Manager or designee to ensure the integrity of electronic data.
- **Backup and Security** -ALS laboratory data is acquired directly to the centralized acquisition server. All backups are performed using CommVault Simpana software to an offsite SAN in one of the ALS datacenters. These disk backups are then archived to tape for long-term storage. Incremental backups are performed daily, and a full backup is performed weekly. Weekly backups are stored for a month. The last of the month is stored for one year. The last backup of the year is stored for 5 years. All installed software, software versions, and software changes are managed via ServiceNow (ALS service management software). The server is also locally mirrored to a hard drive to provide quick restoration of the server should the server need to be replaced.

  The external e-mail system and Internet access is established via a single gateway to discourage unauthorized entry. ALS uses a closed system for company e-mail. Files, such as electronic deliverables, are sent through the external e-mail system only via a trusted agent. The external messaging system operates through a single secure gateway. Email attachments sent in and out of the gateway are subject to a virus scan. Because the Internet is not regulated, we use a limited access approach to provide a firewall for added security. Virus screening is performed continuously on all network systems.

7.5.2 ALS ensures that amendments to technical records are tracked to previous versions or to original observations. Both the original and amended data and files are retained, including the date of alteration, an indication of the altered aspects and the personnel responsible for the alterations.

7.6 Evaluation of Measurement Uncertainty

Uncertainty is associated with most of the results obtained in the laboratory testing conducted by ALS. It is meaningful to estimate the extent of the uncertainty associated with each result generated by the laboratory. It is also useful to recognize that this measurement of uncertainty is likely to be much less than that associated with sample collection activities.

In practice, the uncertainty of a result may arise from many possible sources. ALS has considered the relative contribution of major sources of error. The approach to estimating uncertainty adopted by the laboratory resulted in the conclusion that many sources of error are insignificant compared to the processes of sample preparation, calibration, and instrumental measurement. Uncertainty attributed to the laboratory processes can be estimated, if requested, using the Laboratory Control Sample (LCS) limits. Since the LCS undergoes the same sample handling as the sample, the average recovery and standard deviation of the LCS represents the expected average recovery and standard deviation of the sample. This approach does not account for uncertainty attributed to sampling variability and specific sample matrix interferences. Field Duplicates, Field Blanks, and Sample Matrix Spikes may be used to further interpret the field influence on the data. The estimation of uncertainty applied by ALS relates only to measurements conducted in the laboratory. Uncertainty associated with processes conducted external to the laboratory (e.g., sampling activities) are not considered.

Calculation of uncertainty may use the precision measurement values for duplicate samples when LCS or QC samples are not used in testing.

The calculation of uncertainty is not required for qualitative tests. The process is assessed for contributors to uncertainty but the calculation of uncertainty has limited value when empirical values are not available.

7.7 Ensuring the Validity of Results

Before samples are analyzed, the analytical system must be in a controlled, reproducible state from which results of known and acceptable quality can be obtained. That state is verified through the use of Quality Control (QC) procedures intended to ensure accuracy, precision, selectivity, sensitivity, freedom from interference, and freedom from contamination. The QC procedures performed at ALS include: calibration and calibration verification; analysis and comparison of resultant data to predetermined control limits for method blanks, laboratory control samples, spiked matrix samples, duplicate matrix samples, and surrogates added to samples; analysis of performance evaluation samples; determination of Reporting Limits; and the tracking and evaluation of precision and accuracy. The standard lab limits for these QA objectives are found in the Data Quality Objectives table in Appendix. For specific analytical methods, other QC procedures are implemented as required by the method.

These QC procedures are performed and evaluated on a batch basis. Batching procedures and requirements are found in the ALS SOP ADM-BATCH “Sample Batches and Analytical Sequences.” The samples in a batch are processed together, through each step of the preparation and analysis, to ensure that all samples receive consistent and equal treatment. Consequently, results from the batch QC samples, not including field sample QC, are used to evaluate the results for all samples in the batch.

In general terms, instrument calibration, method quality control, and data evaluation is described in analytical SOPs.

All QC parameters set by the applicable ALS SOP or method reference shall not be exceeded without proper documentation in the client report.

The hierarchy of quality control requirements begins with:

✓ Client Requirements (if specified and documented)

✓ Method and/or SOP requirements

✓ Guidance from QAM and other general SOPs

Calibration and Calibration Verification

Instrument calibration is a QC measure taken to verify selectivity and sensitivity. Calibration of instruments at ALS is accomplished through the use of reference materials of the highest quality obtainable. ISO or National Metrology Institute (NMI) traceable reference materials are procured and used if they are available. When ISO or National Metrology Institute (NMI) traceable reference materials are not available, certified reference materials from government agencies or reliable vendors are used. In all cases, written records are maintained that allow all analytical results to be traced unambiguously to the reference materials used for calibration.

In general, analytical instruments are initially calibrated with standard solutions made from the reference materials at levels appropriate for the analysis. This is called the initial calibration (ICAL). This calibration is verified with a standard solution independently prepared from a different lot of the reference material, preferably from a different vendor. This step is called initial calibration verification or ICV. At specified intervals throughout the analytical sequence, the calibration is re-verified again through the analysis of a calibration check solution, usually the mid-point standard solution. This process is called the continuing calibration verification or CCV. If the ICAL, the ICV, or any CCV fails criteria in the analytical method, the system is recalibrated or the results are narrated. It is ALS' intention to only report results generated under acceptable calibration conditions. Specific calibration procedures are found in the SOPs associated with each method of analysis.

Calibration blanks are analyzed at designated frequencies for some methods. These calibration blanks (CCBs) are solutions of either analyte-free water, reagent, or solvent that are analyzed in order to verify the analytical system is contamination-free. The frequency of CCB analysis is specified in the analytical SOP and usually once every ten samples. Additional project-specific requirements may also apply to continuing calibration blanks.

Alternative calibration sequences or procedures will be discussed with clients.

Analysis of Method Blanks

The method blank is an analyte-free matrix (water, soil, etc.) subjected to the entire preparation and analytical process. When analyte-free soil is not available, organic-free sand, glass beads, Teflon chips or an acceptable substitute is used. The method blank is analyzed to demonstrate that the analytical system itself does not introduce contamination. The method blank results should be below the Method Reporting Limit (MRL) or, if required for DoD projects, < ½ LOQ for the analyte(s) being tested. Otherwise, corrective action must be taken. A method blank is included with the analysis of every sample preparation batch, every 20 samples, or as stated in the method, whichever is more frequent

Analysis of Laboratory Control Samples

The laboratory control sample (LCS) is an aliquot of analyte-free water or analyte-free solid to which known amounts of the method analyte(s) is (are) added. A reference material of known matrix type, containing certified amounts of target analytes, may also be used as an LCS. An LCS is prepared and analyzed at a minimum frequency of one LCS per 20 samples, with every analytical batch or as stated in the method, whichever is more frequent. The LCS sample is prepared and analyzed in exactly the same manner as the field samples.

The percent recovery of the target analytes in the LCS is compared to established control limits and assists in determining whether the methodology is in control and whether the laboratory is capable of making accurate and precise measurements at the required reporting limit. Comparison of batch-to-batch LCS analyses enables the laboratory to evaluate batch-to-batch precision and accuracy.

The results of the LCS are reported as percent recovery:

$$\%\,\text{Recovery} = \frac{X}{K} \times 100$$

Where: X = Measured value and K = Expected value

Analysis of Spiked Matrix Samples

Matrix QC samples are generally used to determine acceptability of methods chosen on a field sample and are therefore not used to determine batch acceptability. If the analysis of matrix spike is not possible, a duplicate LCS or QC should be analyzed in the batch.

Matrix spiked samples are aliquots of samples to which a known amount of the target analyte (or analytes) is (are) added. The samples are then prepared and analyzed in the same analytical batch, and in exactly the same manner as are routine samples. For the appropriate methods, matrix spiked samples are prepared and analyzed and at a minimum frequency of one spiked sample (and one duplicate spiked sample, if appropriate) per twenty samples. The spike recovery measures the effects of interferences caused by the sample matrix and reflects the accuracy of the method for the particular matrix in question. The results are reported as percent recovery.

$$\%\,\text{Recovery} = \frac{(XS - Xu)}{K} \times 100$$

Where Xs = Measured value in the spiked sample, Xu = Measured value in the unspiked sample, and K= Expected value

Laboratory criteria will be used in the absence of client-specified criteria. Failure to meet these criteria will be noted in the report.

Analysis of Duplicate Matrix Samples

Matrix QC samples are generally used to determine acceptability of methods chosen on a field sample and are therefore not used to determine batch acceptability. If the analysis of matrix spike is not possible, a duplicate LCS or QC should be analyzed in the batch.

A duplicate matrix spike sample or duplicate matrix sample is used to monitor the precision (repeatability) of the method chosen on a field sample. If a sufficient amount of the analyte(s) of interest is present in the field sample, a matrix duplicate sample is analyzed directly. If the analyte(s) of interest are not present in a sufficient amount, two additional portions of field sample are spiked with the analyte(s) of interest to ensure that meaningful results are obtained. A pair of duplicate samples (matrix/matrix duplicate or matrix spike/matrix spike duplicate) is analyzed with every analytical batch of environmental samples. The results of the analysis of duplicate samples are reported as relative percent difference (RPD).

$$RPD = \frac{|X1 - X2|}{[(X1 + X2)/2]} \times 100$$

Where: $|X_1 - X_2|$ = The absolute value of the difference between the two sample values, $[(X_1 + X_2)/2]$ = The average of the two sample values

Laboratory criteria will be used in the absence of client-specified criteria. Failure to meet these criteria will be noted in the report.

Analysis of Surrogates Added to Samples

Surrogates are organic compounds which are similar in chemical composition and chromatographic behavior to the analytes of interest, but which are not normally found in environmental samples. Depending on the analytical method, one or more of these compounds is added to method blanks, calibration and check standards, and samples (including duplicates, matrix spike samples, duplicate matrix spike samples and laboratory control samples) prior to extraction and analysis in order to monitor the method performance on each sample. Surrogate recovery is a measure of the accuracy and selectivity of the method in the sample matrix. Surrogate results are reported as percent recovery.

$$\%\,Recovery = \frac{X}{K} \times 100$$

Where: X = Measured value and K = Expected value

Analysis of Internal Standards (IS)

Internal standards are known amounts of specific compounds that are added to each sample prior to instrument analysis. Internal standards are generally used for GC/MS and ICP-MS procedures to correct sample results that have been affected by changes in instrument conditions or changes caused by matrix effects. The requirements for evaluation of internal standards are specified in each method and SOP.

Analysis of Interference Check Samples

An interference check sample (ICS) is a solution containing both interfering and analyte elements of known concentration that can be analyzed to verify background and interelement correction factors in metals analyses. The ICS is prepared to contain known concentrations (method or program specific) of elements that will provide an adequate test of the correction factors. The ICS is analyzed at the beginning and end of an analytical run or at a method-specified frequency. Results must meet method criteria and any project-specific criteria.

Analysis of Post Digestion Spikes

Post digestion spikes are samples prepared for metals analyses that have an analyte spike added to determine if matrix effects may be a factor in the results. The spike addition should produce a method-specified minimum concentration above the method reporting limit. A post digestion spike is analyzed with each batch of samples and recovery criteria are specified for each method.

Analysis of MRL Standards (CRDL, LFB)

A laboratory blank fortified at the MRL used to verify the minimum reporting limit. The LFB is carried through the entire extraction and analytical procedure. A LFB is required with every batch of drinking water samples.

Analysis of Performance Evaluation Samples (PT)

Proficiency testing (PT) samples are prepared by an independent organization outside the laboratory. PT providers are evaluated as per the requirements for External Suppliers and must be accredited by TNI for TNI work or ISO/IEC 17043:2010 for work requiring ISO accreditation. They are received and analyzed at regular intervals to monitor laboratory accuracy. ALS Laboratories sends the PT sample results to the independent organization, where they are evaluated and then forwarded directly from that organization to accreditation bodies as needed. PT samples are introduced into the regular sample stream of the laboratory and analyzed as routine samples by analysts who regularly perform the method. Laboratory personnel follow all instructions provided by the PT provider.

Procedures for these analyses are described in the SOP for *Proficiency Sample Testing Analysis* (ADM-PTS). This SOP details prohibited practices regarding Proficiency Testing.

ALS routinely participates in the following studies:

- Water Pollution (WP) and additional water parameters, 2 per year.
- Water Supply (WS) PT studies, 2 per year.
- Hazardous Waste/Soil PT studies, 2 per year.
- Microbiology (WS) PT studies, 2 per year.
- Other studies as required for specific certifications, accreditations, or validations.

PT samples are processed by entering them into the LIMS system as samples (assigned Service Request, due date, testing requirements, etc.) and are processed the same as field samples. The laboratory sections handle samples the same as field samples, performing the analyses following method requirements and performing data review. The laboratory sections submit results to the QA Program Manager for subsequent reporting to the appropriate agencies or study provider. Results of the performance evaluation samples and audits are reviewed by the QA PM, Laboratory Director, and the laboratory staff. For any results outside acceptance criteria, the analysis data is reviewed to attempt to identify a root cause for the deficiency, and corrective action is taken and documented through nonconformance procedures.

The Laboratory Director, Technical Managers or the Quality Manager can institute the analysis of additional PT samples or modify the performance evaluation program as appropriate.

Data Review of Batch

The integrity of the data generated is assessed through the evaluation of the sample results (examples below), initial calibrations, and QC samples. The criteria for evaluation of QC samples are listed within each method-specific SOP. Data is formally reviewed by the analyst and a peer using a checklist which details the items to be reviewed. The data review procedures and decision rules are in the SOP *Laboratory Data Review Process* (ADM-DREV). Records of the data review are maintained and available for external review.

- Holding Times – Holding times assigned by hours are tracked from the minute of sampling to the minute of analysis. Holding times assigned by days are tracked by the day, the holding time ends at midnight of the last day. Holding times prescribed in longer units (weeks, months, years) are handled in the same manner as a holding time defined in days, after converting the holding time to days. Weeks are defined as 7 days; months are defined as 30 days; years are defined as 365 days. When a time of sampling is not provided by the client, ALS uses the first minute of the sampling day (00:00) in the calculation of holding time. Examples:

  48 hour holding time: Sampled May 1 09:32. Holding time is exceeded if not analyzed by May 3 09:32.

  5 day holding time: Sampled May 1 09:32. Holding time is exceeded if not analyzed by May 6 at 23:59.

  6 month holding time: Sampled May 1 09:32. Holding time is exceeded if not analyzed by Oct 28 23:59.

- Sample Results (Inorganic) – Following sample analysis and calculations (including any dilutions made due to the sample matrix) the result is verified to fall within the calibration range. If the result is above the calibration range, the sample is diluted and analyzed to bring the result into calibration range. When sample and sample duplicates are analyzed for precision, the calculated RPD is compared to the specified limits. The sample and duplicate are reanalyzed if the criteria are exceeded. The samples may require re-preparation and reanalysis.

- Sample Results (Organic) – For GC/MS analyses, it is verified that the analysis was within the prescribed tune window. If not, the sample is reanalyzed. Following sample analysis and calculations (including any dilutions made due to the sample matrix) peak integrations, retention times, and spectra are evaluated to confirm qualitative identification. Internal standard responses and surrogate recoveries are evaluated against specified criteria. If internal standard response does not meet criteria, the sample is diluted and reanalyzed. Results outside of the calibration range are diluted to within the calibration range. For GC and HPLC tests, results from confirmation analysis are evaluated to confirm positive results and to determine the reported value. The procedure to determine which result to report is described in the SOP for *Confirmation of Organic Analyte Identification and Quantitation (ADM-CONFIRM).* If obvious matrix interferences are present, additional cleanup of the sample using appropriate procedures may be necessary and the sample is reanalyzed. When dilutions are performed, the MRL is elevated accordingly and qualified.

Tracking, Trending, and Evaluation of Long Term Accuracy and Precision

In addition to evaluating individual batch QC results against control limits, QC results from successive batches are also evaluated for possible trends. While a trend is not necessarily an out-of-control situation in itself, it can provide an early warning of a condition that can cause the system to go out of control.

ALS analytical staff identify trends in analytical systems through the routine evaluation of data. Quality Assurance produces control charts as requested to assess trends but this activity by QA is not preventive and is only used to verify trends exist. The occurrence of a trend does not invalidate data that are otherwise in control. However, trends do require attention to determine whether a cause can be assigned to the trend so that appropriate preventive action can be undertaken.

The generation of control charts is routinely performed at ALS. Surrogate and LCS recoveries are monitored and charted using in-house software (ALS QC Control). Control charts are available to monitor the data and to identify various trends in the analytical results. Control charts are generated annually for all LCS and surrogates. Representative analytes are charted every quarter and compared to the previous for on-going evaluation of trends. The annual comparison of all LCS and surrogates provides a longer-term view of overall trends. The Quality Manager compares the newly generated statistical limits to the old and determines whether the new acceptance criteria is to replace the previous criteria. Investigative action may be taken if charts reveal a potential problem with data quality. See SOP for *Control Limits and Trending* (ADM-CTRL_LIM).

7.8 Reporting of Results

7.8.1 The following procedures describe our peer review procedures.

- When an analyst determines that the analytical data has met the data quality objectives (and/or any client-specific data quality objectives) of the method and has qualified any anomalies in a clear, acceptable fashion, the data package is reviewed by another trained analyst or supervisor. If the data package is acceptable, the secondary reviewer approves the data in LIMS.
- When all of the data in the LIMS has been approved by the analytical departments, the system indicates that report is ready for generation. A report writer generates the applicable report from the LIMS and assembles the package based upon the package level. The instructions for generation of a report and package assembly is given in the SOP for *Data Reporting and Report Generation* (ADM-RG).

7.8.2 The reports produced by ALS meet the following requirements:

- ✓ The report identifies the method used. If the method is modified, it is noted as "modified" in the report.
- ✓ Any abnormal sample conditions, deviation from hold time, irregularities in preservation or other situations that might affect the analytical results are noted in the report and associated with the analytical results.

The contents of the report include:

- ✓ The report title with a unique report number
- ✓ the name, address, and telephone number of the laboratory
- ✓ The name and address of the client or project
- ✓ Sample description and associated unique laboratory identification numbers
- ✓ The dates of sample collection, sample receipt, sample preparation, and analysis

- ✓ The time of sample preparation and/or analysis if the required hold time for either activity is 48 hours or less
- ✓ A method identifier for each method, including methods for preparation steps
- ✓ The MDL or minimum reporting limit for the analytical results
- ✓ The analytical results with units and qualifiers as required
- ✓ A description of any quality control failures and deviations from the accepted method
- ✓ The name and title of the individual(s) who accepts responsibility for the content of the report.
- ✓ The date the report is issued
- ✓ Clear identification of any results generated by a subcontract laboratory
- ✓ If sampling activities are performed by ALS personnel, a reference to the sampling procedures. ALS does not perform any sampling for DOD sites.
- ✓ Page numbers and total number of pages

Prior to release of the report to the client, the project chemist reviews the entire report for completeness according to the SOP for *Project Manager Duties and Report Review* (ADM-PCR). The Project Manager ensures that any and all client-specified objectives were successfully achieved. All data are reported in units consistent with project specifications to enable easy comparison of data from report to report.

For subcontracted analyses, the Project Chemist verifies that the report received from the subcontractor is complete. This includes checking that the correct analyses were performed, the analyses were performed for each sample as requested, a report is provided for each analysis, and the report is signed. The Project Chemist accepts the report if all verification items are complete. Acceptance is demonstrated by forwarding the report to the client.

7.8.3 ALS provides results objectively. ALS does not interpret results or state opinions.

7.8.4 ALS does not perform calibration services.

7.8.5 The laboratory reports results based on the sample provided by the customer. If ALS reports to a specification it is only for the sample results. The lab is not involved with decision rules applied to the sampling site.

7.8.6 Amended reports of analytical results are issued to correct errors. Amended reports require the following items:

Amendments to analytical reports will only be made in supplemental documents and shall contain identification similar to “Amended”.

Include the date amended or released to the client.

Amended reports shall meet all reporting and client requirements.

Amended Reports are stored with the original report, are uniquely identified, and make reference to original reports.

A peer review process is used to ensure amended results are accurate.

Any information changed in the report must have the reason for the change documented in the report.

7.8.7 Deliverables

In order to meet individual project needs, ALS provides several levels of analytical reports. Standard specifications for each level of deliverable are described in Table 7-1. Variations may be provided based on client or project specifications.

When requested, ALS provides Electronic Data Deliverables (EDDs) in the format specified by client need or project specification. ALS is capable of generating EDDs with many different formats and specifications. The EDD is prepared by report production staff using the electronic version of the laboratory report to minimize transcription errors. User guides and EDD specification outlines are used in preparing the EDD. The EDD is reviewed and compared to the hard-copy report for accuracy.

Table 7-1
Descriptions of ALS Standard Data Deliverables

Tier II. This Report includes the following:

1. Transmittal letter
2. Case Narrative
3. Sample Detection Summary
4. Sample Cross Reference
5. Chain of custody documents and sample/cooler receipt documentation
6. Report Qualifiers and Definitions, Acronyms, Accreditation IDs, Analyst Summary
7. Sample analytical results
8. Method blank results
9. Surrogate recovery results and acceptance criteria for applicable organic methods
10. Matrix spike result(s) with calculated recovery and including associated acceptance criteria
11. Duplicate or duplicate matrix spike result(s) (as appropriate to method), with calculated relative percent difference
12. Laboratory Control Sample result(s) with calculated recovery and including associated acceptance criteria
13. Dates of sample preparation and analysis for all samples and QC

Tier IV. Full Data Validation Package. In addition to the Tier III Deliverables, this Report includes the following:

1. All raw data associated with the sample analysis, including but not limited to:
   a. Preparation and analysis bench sheets and instrument printouts,
   b. For organics analyses, all applicable chromatograms, spectral, confirmation, and manual integration raw data. For GC/MS this includes tuning results, mass spectra of all positive hits, and the results and spectra of TIC compounds when requested.
   c. QC data,
   d. Calibration data (initial, verification, continuing, etc),
   e. Calibration blanks or instrument blanks (as appropriate to method).

7.9 Complaints

ALS has a documented process (ADM-FEEDBACK "Handling Customer Feedback") for how complaints are received, recorded, and evaluated. Complaints may result in Nonconformance documentation and/or corrective action. Decisions and outcomes are monitored and communicated. These outcomes are available upon request.

7.10 Nonconforming Work

7.10.1 The laboratory takes all appropriate steps necessary to ensure all sample results are reported with acceptable quality control results. When sample results do not conform to established quality control procedures, responsible management will evaluate the significance of the nonconforming work and address the nonconformance according to the procedures in the SOP *Nonconformance and Corrective Action (ADM-CA)*. Most non-conformances are random events and can be addressed on the analytical report with standard qualifiers and statements prior to the release of the report. If a quality control measure is found to be out of control, and the data is to be reported, all samples associated with the failed quality control measure shall be reported with the appropriate data qualifier(s) as found in Appendix H

When a nonconformance or other quality issue occurs that casts doubt on the validity of reported test results or additional client instructions are needed, the Project Chemist notifies the client within 10 business days of the discovery. This gives the laboratory time to ascertain the extent and significance of the problem. The SOP for Data Recall (CE-GEN006) is used to guide the recall decision and recall action.

When identification of non-conformances casts doubts on the laboratory's compliance with its own policies and procedures, or on its compliance with applicable Standards (TNI, DOD QSM) or State regulations, the appropriate areas of activity are audited as soon as possible. In addition, the appropriate project chemist is promptly notified of any problems in order to inform the client and proceed with appropriate action. Actions (including halting or repeating of work and withholding of reports, as necessary) are based upon the risk levels established by the laboratory.

- ✓ Any employee may stop work when a task cannot be performed safely or the quality of data is determined to be or could be negatively affected. Metrics utilized for work stoppage may include but are not limited to exceeding instrument or sample control limits, QC trending, instrument problems, etc. The appropriate manager shall be consulted for any work stoppage.
- ✓ the management team is responsible for authorizing the resumption of work.

7.10.2 The laboratory retains records on all nonconformance.

7.10.3 If this evaluation determines the problem has or can reoccur or it is against the laboratories own policies or procedures the event requires a corrective action as described in section 8.7.

7.11 Control of Data and Information Management

7.11.1 The laboratory has access to all data and information through the internet, intranet, network locations and hard copy.

7.11.2 All of the software used for data reduction, verification, and reporting is documented and validated by the ALS computer support staff or by the vendor from whom it is purchased. ALS software is controlled and secured according to ALS SOP ADM-SWQADATA, "Software Quality Assurance and Data Security". A continuing effort is made at ALS to increase the use of automated data handling, improve efficiency, and minimize human error. All raw data is retained. If electronic audit trail functions are available, they are to be in use at all times. Handwritten data is verified for transcription errors by the secondary reviewer.

Software errors are treated as a nonconformance under section 7.10 or as a corrective action under 8.7.

7.11.3 Access to ALS networks are controlled through passwords and windows security. Access to LIMS is controlled through user names and passwords. LIMS passwords are changed at a minimum of once per year. Computer security awareness training is provided on an annual basis.

7.11.4 Network drives are backed up locally at the Rochester lab and remotely at another ALS location.

7.11.5 Access to network locations is managed with windows security and roles throughout the system.

7.11.6 Calculations and data transfers are checked using the peer review process and through documentation of computer programs by the IT staff. The QA department checks calculations on any lab produced spreadsheet templates. The spreadsheets are provided to the lab as Read Only with protection of calculations to prevent accidental changes.

7.11.7 Inspections of the LIMS is performed at least annually by the Quality Manager or designee to endure integrity of electronic data. Records of the inspections are made and a report is submitted to laboratory management, noting any problems identified. Any corrective actions are documented in the corrective action documentation system.

8. Management System Requirements

8.1 Options

8.1.1 The laboratory has implemented **Option A** from the ISO/IEC 17025:2017 standard as a management system. The following sections 8.2 through 8.9 address the required elements of Option A. This manual addresses management systems and demonstrates compliance with this document.

8.2 Management System Documentation

8.2.1 This manual describes or references the policies and objectives of the ALS management system. The laboratory SOPs describe the details on how objectives are accomplished.

8.2.2 Policies and objectives of the management system address how competence is demonstrated and assessed, how testing is objectively reviewed and how consistent operations are accomplished. These are addressed in various procedures that define the processes used.

8.2.3 Evidence of commitment is the review of this manual annually and the records of reading by all employees. Additionally, employees are assigned pertinent procedures as needed to ensure objectivity and consistency.

8.2.4 The policies are supported in this management system with references to the procedures as appropriate.

8.2.5 All employees have access to the Quality Assurance Manual and the supporting procedures, documents, and forms.

8.3 Control of Management System Documents

8.3.1 Procedures for control and maintenance of documents are described in ALS SOP "Document Control". The requirements of these SOPs apply to all laboratory logbooks (standards, maintenance, run logbooks, etc), certificates of analysis, SOPs, QAMs, and other controlled documents (Appendix I). External documents, such as reference methods, accreditation policies and requirements, and reference manuals are maintained under document control policies through the use of hardcopy and network drives.

8.3.2 Revisions are made to uniquely identified internal documents in accordance with the "Document Control" SOP. Assignments are made to the responsible ALS manager or designee to review and update SOPs applicable to the area of responsibility. After revision, the appropriate Manager, Quality Manager, and Laboratory Director must approve the updated SOP. Filing and distribution is performed by the QA PM, or designee, and ensure that only the most current version of the document is distributed and in use. Logbooks and SOPs that are no longer in use are archived according to ADM-ARCH.

8.4 Control of Records

8.4.1 ALS maintains records on the most part electronically and in accordance with *SOP for Data Archiving (ADM-ARCH)*. Logbook entries are standardized following the *SOP for Making Entries and Control of Records* (ADM-DATANTRY). ALS personnel are responsible for retention, retrieval, and disposition of final records of laboratory data and activities. This includes: sample receipt, data packages, laboratory notebooks, instrument maintenance logs, training records, internal and external audits, management reviews, PT reports, QC charts, MDL calculations, accreditations, subcontractor accreditations, Controlled documents, metrology, data investigations, complaints, non-conformances, corrective actions, vendor approvals, purchasing documents, receipt records, and certificates of analysis.

Changes made to data, including electronic data, must clearly identify the date and the person making the change and must follow the procedures in ADM-DATANTRY.

All records are available to the accreditation bodies. Whenever possible, electronic instrument records are stored on the network, which is backed up remotely to prevent data loss due to hardware failure. Software for decommissioned instruments is maintained in ServiceNow (see section 7.5).

8.5 Actions to Address Risks and Opportunities

Multiple Quality System tools are used with the goal of identifying trends and preventing non-conformance with pro-active systems. These tools include the use of Preventive Maintenance, Data Review procedures (ADM-DREV), purchasing from approved vendors (ADM-PUR), the use of second source standards and batch QC, Proficiency Testing, QC Charting, Customer Feedback, Internal auditing, Management Review, Electronic Data backup and computer security procedures, Training procedures, Monthly Risk reporting, Document Control, Annual SOP review, initial and annual ethics training, and the use of SOPs. When systematic non-conformances are identified in one area, corrective actions are examined for implementation in other lab areas and other ALS labs, as applicable.

All bench level personnel are responsible to continually detect short-term trends in QC data and respond appropriately (instrument maintenance, check of extraction or instrument conditions, check of standards, etc.). Long Term trends are identified with QC Charting, review of Holding Time exceedances, and review of recurring non-conformances.

ALS views risk management as a key component of its corporate governance responsibilities and an essential process in achieving and mandating a viable organization. ALS is committed to enterprise wide risk management to ensure its corporate governance responsibilities are met and its strategic goals are realized.

Refer to ALS Limited Risk Management Policy and Framework CAR-GL-GRP-POL-007 and Risk Appetite and Tolerance Statement CAR-GL-POL-011 for details.

Risk is defined at ALS as the effect of uncertainty on objectives. Objectives for the organization have different attributes and aspects, such as financial, service, quality, health & safety, environmental stewardship, and are considered at different levels, such as enterprise-wide, operational, and project levels. ALS interprets risk as anything that could impact meeting its corporate strategic objectives, and believes risks can provide positive opportunities as well as having negative impacts.

Tools for evaluating and managing risk include routine procedures such as employee evaluations, Management Review, control limits trending, corrective action reports, nonconforming events, SOP review, internal and external audits, and PT results.

Risk reporting mechanisms vary from routine reporting mechanisms and immediate action for lower risk situations to immediate notification of the ALS CEO in extreme cases.

Refer to: ALS Code of Conduct, ALS Whistleblower Policy and Integrity and Compliance Helpline

Regardless of the mechanism used, the policies and tools provide a framework for categorizing, assessing, analyzing, and addressing risk, as well as monitoring and reviewing actions taken. Roles and responsibilities are defined in the relevant procedures.

Risk severity is evaluated during the decision making process. For each risk there is an opportunity.

Risks to our business and how we address them include:

Impartiality by Employees

Analytical testing is completed without undue pressure to modify results to meet client objectives.

ALS does not view this as a risk. There are many firewalls in the lab process to prevent occurrence.

- Project Managers are in contact with clients but there is no ability to influence testing results
- A data generated must be peer reviewed by a second party
- Lab operations only see samples, sample names and numbers. They do not have direct contact with clients.
- Annual Ethics and Data Integrity Training for all employees
- ALS Code of Conduct, ALS Whistleblower Policy, ALS Integrity Hotline, and Integrity and Compliance Helpline.

Chemical Exposure

Failure to practice procedures as trained, issues with the facility, and poor engineering controls can result in injury to employees, lost time, med/hospital situation, contamination, and can close the site.

ALS has policies, chemical exposure training, and readily available SDS sheets. Employees are expected to offer suggestions for improvement and formally report any conditions where concern for safety is recognized.

Explosion/Chemical Fire

Improper chemical storage and usage along with lack of equipment and facility upkeep can result in loss of life, loss of property, and laboratory down time.

ALS performs inspections and training, keeps an inventory of chemicals, establishes storage locations, and maintains minimal quantities of chemicals.

Supply Disruption

Natural disaster and vendors unable to provide needed supplies can disrupt the business, increase expenses, and result in lost production and lost clients.

ALS maintains multiple sources for supplies, develops relationships with our vendors, and emphasizes communication between analysts, managers, purchasing and vendors.

Loss of Key Employees

Resignation, leave for personal reasons or for other employment can negatively impact the business.

Communication, cross-training, designated backups, and having a pool of potential replacements minimizes this risk. We provide a positive atmosphere for employees and provide small perks to reward dedication.

Computer and Instrument Issues

Computer, instrument, or other IT failures can result in loss of revenue, loss of service, and loss of data.

ALS provides necessary IT resources for instruments and computers including replacing older computers, keeping related systems in good repair, and replacing when necessary. ALS continues to build robust data systems and make provisions for stellar back-up storage for all data.

Reputation

Falsifying test results can result in loss of credibility, loss of clients, loss of revenue, and loss of accreditation.

All new employees must sign an ethics agreement and have initial ethics and data integrity training. Annually, all employees must take ethics and data integrity refresher training. All data undergoes a proper peer review. ALS maintains a strong quality system.

Legal Ramifications

Not following workplace and environmental laws and failure to practice procedures as trained can result in license revocation, fines, and disruption of the business.

Targeted and ongoing training, inspections, and having established procedures minimizes this risk. ALS continues to follow all laws and regulations.

Loss Time Injury

Failure to practice procedures as trained and not having proper safeguards in place can result in injury to employees, lost time, med/hospital situation, contamination, and can close the site.

Policies, specific task related training, targeted and ongoing training, inspections, workplace safeguards, cross training, and designated backups, minimize this risk. ALS continues to grow the safety program and culture.

Loss of Revenue

Can be caused by various audit fines and contract penalties for late data resulting in loss of revenue and disruption in business.

Policies, specific quality training, targeted and ongoing training, inspections, workplace safeguards, and internal audits minimize this risk. ALS continues to perform lab operations at the highest level.

8.6 Improvement

8.6.1 ALS management is committed to continually improving the effectiveness of the management and quality systems by implementing the requirements of this quality manual. ALS is committed to improvements of the management systems through compliance with its own policies and procedures, including the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. ALS management is also committed to compliance with requirements related to current DoD/DOE QSM, and other client and project related requirements.

8.6.2 ALS surveys clients and gains feedback on services provided. This input to management is managed at a corporate level and is reviewed monthly and during the management review processes. Customer feedback provides important information to allow the company to continually improve. The laboratory maintains and documents timely communication with the client for the purposes of seeking feedback and clarifying customer requests. Feedback is used and analyzed to improve the quality of services. The *SOP for Handling Customer Feedback* (ADM-FEEDBACK) is in place for these events.

8.7 Corrective Actions

8.7.1 ALS Laboratory operations are governed by documented procedures, requirements, quality assurance plans, project plans, and contracts. When any operation, for any reason, does not conform to the requirements of the governing documents, the aberrant event, item, or situation must be properly documented and evaluated. If the evaluation indicates a systematic problem, root cause evaluation is undertaken and corrective action is initiated. Procedures for the documentation and resolution of corrective action are detailed in the ALS SOP ADM-CA "Nonconformance and Corrective Action". Corrective action may include changes to procedural or management system. It is the policy of ALS that any corrective action which impacts results of testing must include notification to clients. When the lab makes changes that affect a DOD ELAP approved corrective action plan, the DOD ELAP accreditation body is to be notified.

8.8 Internal Audits

8.8.1 Internal audits are conducted in accordance with ALS SOP ADM-IAUD "Internal Audits". When internal and external audits or data assessments reveal a cause for concern with the quality of the data an investigation is initiated by quality assurance personnel to determine the extent of the problem. Internal audits include examination of laboratory practice, the use of data handling systems, documentation and document control, personnel qualification and training records, procurement activities, and other systems that support and augment the laboratory analytical function. Audit findings and any event that casts doubt on the validity of the testing results requires client notification within 15 business days of the discovery of the issue and proposed corrective actions to resolve nonconformance submitted to the customer within 30 business days of the discovery.

8.9 Management Review

8.9.1 Review of the Management System is completed on an ongoing basis in accordance with ALS SOP ADM-MGMTRVW "Management Review".

8.9.2 Inputs to management reviews may be kept in agenda notes and include but are not limited to:

a) Changes in internal and external issues that are relevant to the laboratory; including risks to the laboratory's impartiality and any plan to minimize risks
b) Fulfilment of objectives;
c) Suitability of policies and procedures;
d) Status of actions from previous management reviews;
e) Outcome of recent internal audits;
f) Corrective actions; Preventive Actions
g) Assessments by external bodies;
h) Changes in the volume and type of the work or in the range of laboratory activities;
i) Customer and personnel feedback;
j) Complaints;
k) Effectiveness of any implemented improvements;
l) Adequacy of resources;
m) Results of risk and opportunity identification;
n) Outcome of the assurance of the validity of results (interlaboratory comparisons or proficiency tests);
o) Other relevant factors, such as monitoring activities, quality control activities, and training.
p) Reports from managerial and supervisory personnel
q) Certifications, Accreditations, Licenses, Permits
r) Recommendations for improvement
s) Facility Control

8.9.3 The outputs from the management review shall record all decisions and actions related to at least:

a) The effectiveness of the management system and its processes;

b) Improvement of the laboratory activities related to the fulfilment of the requirements of this document;

c) Provision of required resources;

d) Any need for change.

A summary of these outputs is generated annually.

9. Appendices

Appendices are available upon request. The documents listed in this section are dynamic; accordingly they can change without notice or revision to this QAM. Please contact the laboratory for the most current documents.

APPENDIX A – Definitions

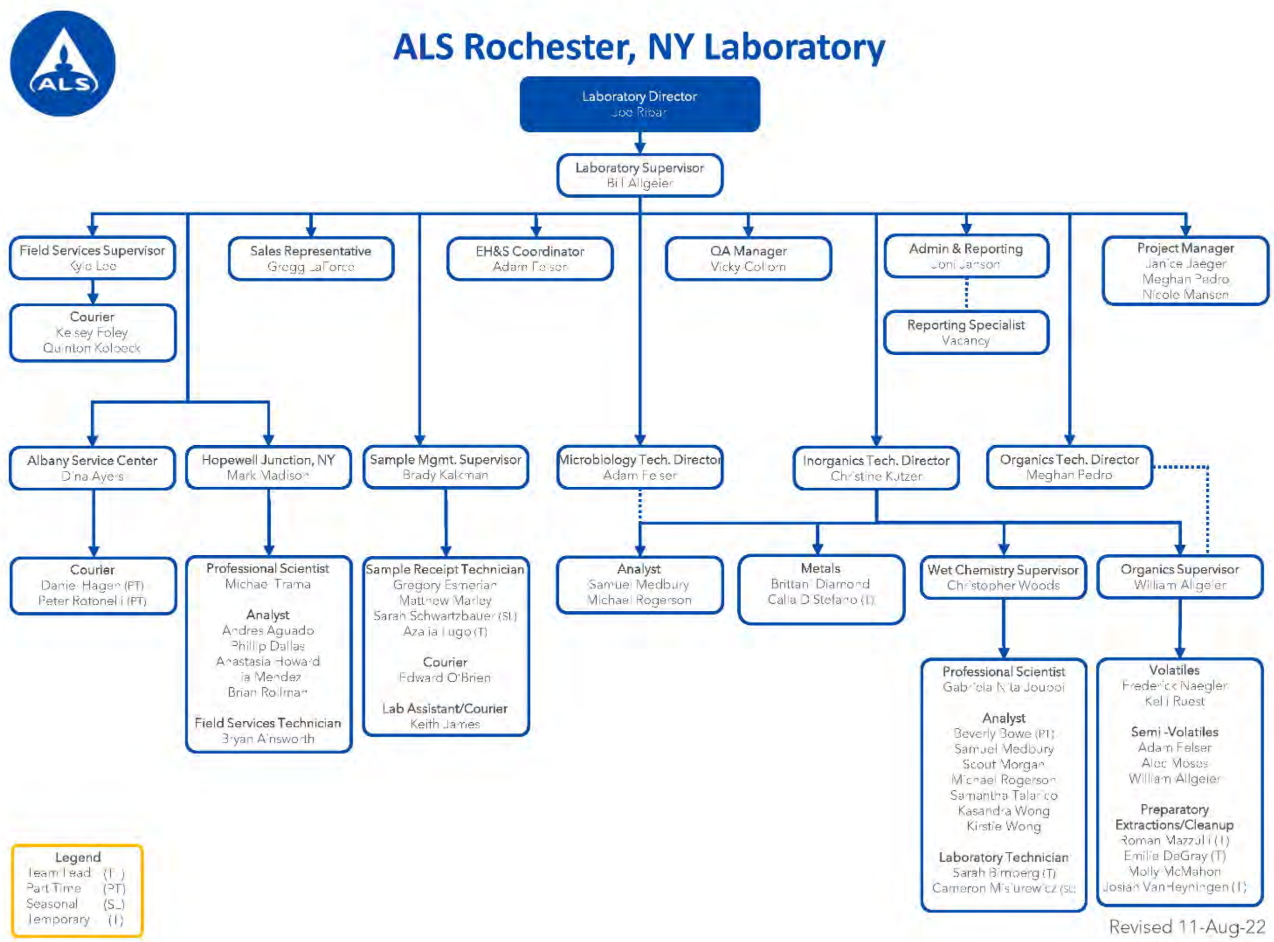
ACRONYM	DEFINITION
AA	Atomic Absorption Spectrometry (aka AAS) instrument used to measure concentration of metals in samples
ACS	American Chemical Society
ASTM	American Society for Testing and Materials
BFB	4-Bromofluorobenzene
BNA	Base Neutral Acid organic compounds (aka SOC or SVOCs)
BOD	Biochemical Oxygen Demand
BTEX/BETX	Benzene, Toluene, Ethylbenzene, Xylenes
CAS Number	Chemical Abstract Service Registry Number
CCB	Continuing Calibration Blank sample
CCC	Continuing Calibration Check sample
CCV	Continuing Calibration Verification sample
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
CLP	Contract Laboratory Program (through USEPA)
COC	Chain-of-Custody
COD	Chemical Oxygen Demand
DCM	Dichloromethane (aka Methylene Chloride)
DEC	Department of Environmental Conservation

DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOC	Demonstration of Capability
DOE	Department of Ecology (state or federal) or Department of Energy
DOH	Department of Health
EPA	U. S. Environmental Protection Agency (aka USEPA)
EPCRA	Emergency Planning & Community Right-to-Know Act
ERA	Environmental Resource Associates
ELAP	Environmental Laboratory Accreditation Program
FDA	Food & Drug Administration
FIA	Flow Injection Analysis
FID	Flame Ionization Detector
FIFRA	Federal Insecticide, Fungicide & Rodenticide Act
FR	Federal Register
GAO	General Accounting Office
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
HECD/ELCE	Hall Electrolytic Conductivity Detector
HP	Hewlett-Packard (mfg. GC instruments)
HPLC	High Pressure Liquid Chromatography
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP-AES	Inductively Coupled Plasma Atomic Emission Spectrometry (aka ICPAES)
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
ICV	Initial Calibration Verification sample
IFB	Invitation for Bid
IR	Infrared Spectrophotometer
ISE	Ion Selective Electrode
LCS	Laboratory Control Sample
LIMS	Laboratory Information Management System
LOD	Limit of Detection

LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
MB	Method Blank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
NA	Not Applicable
NAS	National Academy of Sciences
NCASI	National Council for Air and Stream Improvement (for the Paper Industry)
NCI	National Cancer Institute
ND	Not Detected (at or above MRL)
NIH	National Institute of Health
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NPDES	National Pollutant Discharge Elimination System
NSF	National Science Foundation
NTIS	National Technical Information System
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PE	Performance Evaluation sample (AKA PT – Proficiency Test sample)
PID	Photoionization Detector
PQL	Practical Quantitation Limit
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFP	Request for Proposal

RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SMO	Sample Management Office (aka Sample Receiving)
SOC	Semi-Volatile Organic Compounds
SOQ	Statement of Qualifications
SOW	Statement of Work
SVOAs	Semi-Volatile Organic Analytes
SVOCs	Semi-Volatile Organic Compounds
SW-846	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods
TOC	Total Organic Carbon (test to determine organic content)
TOX	Total Organic Halides (test to determine organic halide content)
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
UST	Underground Storage Tank
UV	Ultraviolet Spectrophotometer
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compounds
WP	Water Pollution
WS	Water Supply
UNITS	
mg/kg	Milligrams per Kilogram (same as ppm)
mg/L	Milligrams per Liter (same as ppm)
ug/L	Micrograms per liter (same as ppb)
ppb	Parts Per Billion
ppm	Parts Per Million

APPENDIX B – Key Personnel and Organization Charts



Joe Ribar

3352 128th Avenue | Holland, MI 49424 | +1 616 218 7990

Regional Director

2020 – Present

Responsible for the Fort Collins, CO, Cincinnati, OH, Middletown, PA, Holland, MI, and Rochester, NY laboratories. Provides administrative, operational, and technical leadership through planning, allocation, and management of resources.

Previous Experience

Laboratory Director, '17 - '21

ALS Environmental Cincinnati, OH 2017 – Present *Rochester, NY 2018 – 2021*

Responsible for all laboratory activities as the highest-level manager. Providing administrative, operational, and technical leadership through planning, allocation, management of personnel, and management of resources. Provides resources for implementation of the QA program.

Previous Experience

ALS Environmental **Operations Manager, '11 – '17**
Holland, MI

Responsibilities included overseeing laboratory and field staff of 60+ people, ensuring timely completion of work, and exceeding client expectations. Duties also included management of greater than $1 million in projects annually, interacting with clients and lab personnel through effective communication, and working with sales staff to develop new and existing clients. Acted as program manager for national accounts.

ALS Environmental **Project Manager, '07 – '11**
Holland, MI

Responsible for management of incoming work; set up projects to meet client specifications, quote pricing, review and report data. Served as the liaison between the laboratory and client to set up projects to ensure the laboratory could meet client's needs; including methods, reporting limits, and turnaround time. Oversaw and reported projects pertaining to wastewater compliance monitoring, product analysis, brownfield remediation, and ongoing groundwater monitoring.

e-Lab Inc. **Field Services Technician, 04 – '07**
Holland, MI

Responsible for scheduling and sampling at numerous industries in the NW Indiana/Chicagoland region to ensure client compliance. Provided consultation to clients regarding industrial/environmental compliance issues; serving as liaison between clients and municipalities. Conducted groundwater monitoring utilizing low flow sampling protocol. Managed supply inventory and helped facilitate overnight shipping of samples to laboratory for large industrial remediation project to ensure hold times were met. Assembled sample kits and coordinated with clients to make sure they had appropriate supplies required for projects.

Severn-Trent Laboratories **Analytical Chemist '02 – '04**
Valparaiso, IN

Obtained analytical data through the use of titration, spectrophotometry, etc. Worked with management to shore up inefficiencies in sample processing including bringing automated instrumentation online including BOD assay and Auto-titrator. Communicated with project managers on a daily basis to update them on specific samples and make them aware of any issues.

Education

Purdue University,
Lafayette, IN
B.S. Biology, 2002

Bill Allgeier

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380

ALS Environmental

Laboratory Supervisor

2022 - Present

Primary responsibilities include management of all laboratory departments, scheduling, productivity, reporting and evaluation of analytical methodologies, project planning and Quality Assurance/Quality Control protocols.

Education

State University of New York at Brockport, Brockport, NY
BS, Biology, 1997

Erie Community College, Orchard Park, NY
AA, Liberal Arts, 1995

Previous Experience

ALS Environmental. Rochester, NY — **Organics Analyst, 2011 - 2022**
Analysis, data review, and reporting of pesticides/PCBs, herbicides, semivolatiles, volatiles, and other GC, GC/MS, and HPLC methods.

Columbia Analytical Services, Rochester, NY — **Organics Analyst**, 1999-2011
Duties as above.

Advanced Environmental Services, Niagara Falls, NY — **Organics Analyst**,1998-1999
Duties as above.

Willow Pond Aqua Farm, Hopewell, NY — **Field Technician**, 1997
Assist in maintaining a variety of fish species and installation of water garden ponds.

Christine M. Kutzer

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ALS Environmental

Education

St. Bonaventure University,
Olean, NY
BS, Chemistry, 1992

Technical Director

Organics Laboratory 2018-Present

Inorganics Laboratory 2015 - Present

Development and implementation of a quality system, including: monitoring standards of performance in quality control and quality assurance; monitoring the validity of analyses performed and data generated to ensure reliable data; ensuring that sufficient numbers of qualified personnel are employed to supervise and perform the work of the laboratory; and providing educational direction to laboratory staff. Plans and manages all activities in the Inorganics Department, including Metals and General Chemistry. Responsible for coordinating the workload and scheduling employees' daily activities. Assist in the operation, troubleshooting, and maintenance of instrumentation. Responsible for scheduling samples. Accountable for analytical data entry, analytical data approval and High Level metals package generation through MARRS. Responsible for coordinating method development in the Inorganics Laboratory.

Previous Experience

ALS Environmental
Rochester, NY
Technical Manager, Inorganics Laboratory, '11 – '15

Responsibilities same as above.

Columbia Analytical Services, Inc.
Rochester, NY
Technical Manager, Inorganics Laboratory *'04-'11*

Duties same as above.

Columbia Analytical Services, Inc.
Rochester, NY
Technical Manager, Metals and Organics Prep Laboratories *'02-'04*

Duties as above for Metals Department. Responsible for coordinating the workload and scheduling employees' daily activities and troubleshooting in the organics preparation laboratory.

Columbia Analytical Services, Inc.
Rochester, NY
Technical Manager, Laboratory *'96-'02*

Duties as above for Metals Department.

General Testing Corporation
Rochester, NY
Analyst, *'96-'96*

Responsible for instrument troubleshooting and maintenance, digestion of samples, and TCLP extractions. Also responsible for data entry, approval, and package review.

General Testing Corporation
Rochester, NY
Chemist, *'92-'96*

Duties as listed above.

Meghan L. Pedro

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ALS Environmental

Education

Nazareth College,
Rochester, NY
MS, Management, 2011

Nazareth College,
Rochester, NY
BS, Chemistry, 2000

Project Manager/Organics Technical Director

2018 – Present / 2022 - Present

Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress of their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base.

Serves as a technical resource for the Organics Department. Ensures implementation of a quality system and validity of data through the regular review of Organics data.

Previous Experience

ALS Environmental. — **Organics Prep Lab Supervisor, '11 – '18**
Rochester, NY

Supervised the organics preparation laboratory for the extraction of pesticides/PCBs, herbicides, semivolatiles and other GC and GC/MS methods. Analysis of the same.

Administration of the laboratory health and safety policies, including formulation and implementation, supervision on new employee safety training, review of accidents, incidents and prevention plans, and the conduction of safety inspections.

Columbia Analytical Services — **Organics Prep Lab Supervisor**, '04-'11
Rochester, NY

Duties as above.

Columbia Analytical Services — **Organics Analyst**,'02-'04
Rochester, NY

Duties as above, without the supervisory role.

Columbia Analytical Services — **Analyst, Organics Preparation**, '01-'02
Rochester, NY

Extraction, concentration, and clean-up of water, soil, and oil samples for Semi-VOA compounds using EPA methodologies.

Adam Felser

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ALS Environmental

Organic Analyst and Microbiology Technical Director

2021 - Present

Oversees the Microbiology department. Performs organic analysis using EPA approved methods.

Education

State University of New York,
Alfred State College,
Alfred, NY
BS, Forensic Science,
AAS Biological Sciences
2017

Previous Experience

ALS Environmental,
Rochester, NY

Organic Analyst, Microbiology Analyst, and Wetchemistry Analyst
2019-2021

Performed preparation and analysis, using EPA approved methods.

ALS Environmental,
Rochester, NY

Wetchemistry and Microbiology Analyst
2018-2019

Performed preparation and analysis, using EPA approved methods.

ALS Environmental,
Rochester, NY

Wetchemistry Analyst
2017-2018

Performed Wetchemistry preparation and analysis, using EPA approved methods

Janice M. Jaeger

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

Ohio Wesleyan University, Delaware, OH
BA, Pre-Veterinary Medicine and Pre-Professional Zoology (Double Major), 1983

Project Manager

2011 - Present

Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress of their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base

Previous Experience

Columbia Analytical Services, Inc. — **Project Manager** *'96-'11*
Rochester, NY

Responsibilities**:** Assist clients to determine what analyses are required. Responsibilities primarily as above.

General Testing Corporation — **Customer Service Representative/ Sample Receiving,'89-'96**
Rochester, NY

Primary responsibilities included client services as listed above. Also responsible for sample receipt, log in and distribution as well as bottle preparation.

Penfield Veterinary Hospital — **Surgical Assistant, '84-'89**
Rochester, NY

Primary responsibilities included preparation of instruments, surgical area, and animal for surgery. Also responsible for monitoring the animal before and after surgery.

Nicole Mansen

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

State University of New York, Brockport, NY
BS, Biological Sciences, 2011, plus graduate coursework through 2013

Finger Lakes Community College, Canandaigua, NY, **AS, Biotechnology**, 2008

Project Manager

2022 - Present

Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress of their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base.

Previous Experience

ALS Environmental, Rochester, NY — Metals Analyst and Microbiology Technical Director, 2016-2018

Overseed the Microbiology department. Performed metals preparation and analysis, using EPA approved methods.

ALS Environmental, Rochester, NY — Wetchemistry and Microbiology Analyst, 2014-2016

Performed Microbiology and Wetchemistry analysis, using EPA approved methods.

Vicky Collom

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

Westminster College,
New Wilmington, PA
BS, Environmental Science, 1995

Quality Assurance Manager

2015 - Present

Responsible for the overall coordination of the laboratory QA program and for ensuring implementation and compliance with established quality objectives and quality systems at all times. Responsible for Quality Assurance functions including the Quality Assurance Manual, certifications, documenting standard operating procedures, and maintaining performance evaluation records. Oversees balance calibration and sample storage temperature control. Maintains certifications/accreditations for regulatory agencies and client certifications or approval programs. Acts as primary point of contact during laboratory audits. Provides audit responses and initiates any changes in procedures resulting from an audit. Ensures continuous process improvement through the use of control charts, performance evaluation samples and preventive action. Conducts internal audits and makes recommendations for corrective action and improving effective quality assurance and quality control. Ensures that all personnel understand their contributions to the quality system and that communication takes place at all levels within the laboratory regarding the effectiveness of the quality system, and evaluating the effectiveness of training.

Provides technical assistance to laboratory staff on QA/QC issues, project feasibility, and methods interpretation/development.

Previous Experience

ALS Environmental. — **Quality Assurance Specialist, '11 – '15**
Rochester, NY
Assisted the Quality Assurance Manager in the above duties.

Columbia Analytical Services — **Quality Assurance Specialist**, '01-'11
Rochester, NY
Assisted the Quality Assurance Manager in the above duties.

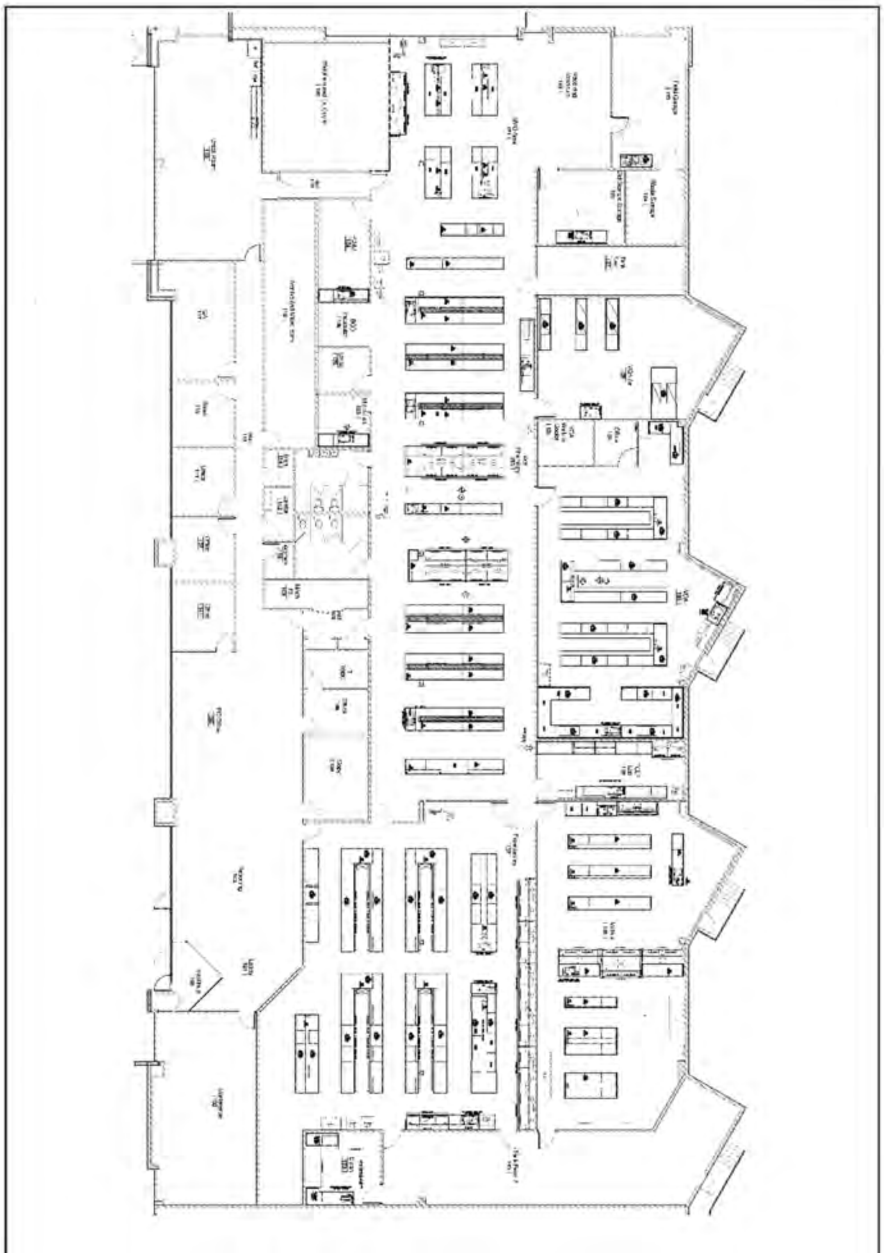
Columbia Analytical Services — **Analyst, Wet Chemistry**,'97-'01
Rochester, NY
Responsibilities: Performed general chemistry preparation and analysis, including BOD, titrations, solids, operation and maintenance of instruments including Ion Chromatography, TOC analyzer, Lachat Flow Injection. Performed secondary review of data and participated in method development.

Lawrence County Department of Recycling Solid Waste — **Intern**, '95
New Castle, PA
Responsibilities: Community Education about recycling, data collection for the state about waste haulers, organized a telephone book recycling program.

APPENDIX C – Ethics and Data Integrity Policy

See CE-GEN001

APPENDIX D – Laboratory Floor Plan



APPENDIX E – Analytical & Support Equipment

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
MASS SPECTROMETERS - VOAs					
GC/MS #10 (R-MS-10)	Gas Chromatograph	Agilent 6890N	CN10633045	VOAs	2006
	Mass Spec Detector	Agilent 5975B	US62723782		
	Purge and Trap Autosampler and Concentrator	Atomx	US15195006		
	Computer Workstation	Dell E520 NARCEW7008	8PT52C1		
	Firmware	GC N.05.05 MS 5.02.02			
	Analytical Software	Chemstation	D.03.00.552		
GC/MS #12 (R-MS-12)	Gas Chromatograph	Agilent 6890	US00026365	VOAs	2008
	Mass Spec Detector	Agilent 5973	US71191002		
	Purge and Trap Autosampler and Concentrator	Atomx	US17198011		
	Computer Workstation	Dell NARCEW7005	B78K571		
	Firmware	GC A.03.08 MS 5.02.04			
	Analytical Software	Chemstation	W6G86-222ZT-YK65P-N82JA		
GC/MS #14 (R-MS-14)	Gas Chromatograph	Agilent 7890A	CN10945114	VOAs	2010
	Mass Spec Detector	Agilent 5975C	US94333887		
	Purge and Trap Autosampler and Concentrator	Tekmar Atomx	US13271003		
	Computer Workstation	IBM 8212KUE NARCEXP001	LKTAK9B		
	Firmware	GC B.02.02 MS 7.02.29			
	Analytical Software	Enviroquant Chemstation Core Software Software Upgrade Entech Smartlab v4.17b	USK0104163 91701EA		

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
R-MS-16	Gas Chromatograph	Agilent 7890B	CN13473179	VOAs 524.2	used 2021
	Mass Spec Detector	Agilent 5975C	US10263617		
	Purge and Trap Autosampler and Concentrator	Tekmar Atomx	US14015025		
	Computer Workstation	HP Prodesk NARCEWX013	MXK0122RGM		
	Firmware	GC A.01.10.2 MS 5.02.04			
	Analytical Software	Mass Hunter	F.01.03.2365		

GAS CHROMATOGRAPHS - VOLATILES

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
V2 (R-GC-02)	Gas Chromatograph	Varian 3300	4130	Dissolved Gases by RSK	1999
	Detector	FID	(integrated)		
	Computer Workstation	Dell - Windows 2000 ALRCEWP014			
	Firmware	B.01.00			
	Analytical Software	Agilent Chemstation	G1701BA		

MASS SPECTROMETERS -SVOAs

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GC/MS 5973C (R-MS-53)	Gas Chromatograph	Agilent 6890N (G1530N)	US10232036	Low Level	2002
	Mass Spec Detector	Agilent 5973 (G2578A)	US21853642		
	AutoSampler	Agilent 7683 (G2614A)	US00307019		
	Injector	Agilent 7683 (G2613A) Agilent LVI being installed	US81501041		
	Computer Workstation	Gateway P7-450 ALRCEWP003	13645026		
	Firmware	GC N.04.08 MS 3.01.58			
	Analytical Software	HP Chemstation Enviroquant G1701 v.D.00.00.38			

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GC/MS 5973D (R-MS-54)	Gas Chromatograph	HP6890	US00025479	SemiVOAs	2008
	Mass Spec Detector	HP5973	DE82320565		
	AutoSampler	HP7683	CN74245816		
	Injector	HP7683	CN74143962		
	Computer Workstation	IBM Think Center ALRCEW7038	LKH2F83		
	Firmware	GC A.03.08 MS 5.02.04			
	Analytical Software	Chemstation G1701DA			
GC/MS 5975E (R-MS-56)	Gas Chromatograph	7890A	CN10391141	1,4-Dioxane	2010
	Mass Spec Detector	HP5975C	US1037615		
	AutoSampler	HP7693	CN10340022		
	Injector	HP7693	CN10340059		
	Computer Workstation	IBM Think Center ALRCEXP040	MXL0340NKM		
	Firmware	GC A.01.11 MS 5.02.07			
	Analytical Software	Chemstation G1701EA			
R-MS-64	Gas Chromatograph	7890A	CN10923101	SemiVOAs	used 2021
	Mass Spec Detector	HP5977A	US1352L201		
	AutoSampler	HP7683	CN51032422		
	Injector	HP7683	CN14523070		
	Computer Workstation	HP ProDesk NARCEWX015	MXL0122QBY		
	Firmware	GC A.01.16 MS 6.00.34			
	Analytical Software	Mass Hunter GCMS B.07.06.2704			
R-MS-65	Gas Chromatograph	8890 (G3542A)	US2051A032	625/8270	2022
	Mass Spec Detector	5977B	US2151M037		
	AutoSampler	7693A	R021077008		
	Injector	G4513A	R022015070		
	Computer Workstation	HPZ2 SFF G5 NARCEWX035	1413GFD		
	Firmware	GC 2.4.1.10 MS 6.00.34			
	Analytical Software	Mass Hunter V10			

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GAS CHROMATOGRAPHS - EXTRACTABLES					
HP5890(II)-B (R-GC-52)	Gas Chromatograph	HP 5890	2728A14298	Glycol, Method 18	1988
	Detector	FID	(integrated)		
	Autosampler	HP7673	3417A35264		
	Injector	HP7673	CN34222775		
	Controller	HP7673	CN00005619		
	Computer Workstation	HP KAYAK XA ALRCENW001	US8345093		
	Firmware	B.02.00			
	Analytical Software	HPChemstation B.02.05 EnviroQuant G1701BA v.B.01.00			
HP6890- D (R-GC-54)	Gas Chromatograph	HP 6890	22174	PCBs Herbicides	1998
	Detector	Dual ECD			
	Injector	HP7683	DE82400931		
	Autosampler	G26143AX	US81800809		
	Computer Workstation	DELL ALRCENW011	7BQRS71		
	Firmware	A.03.07			
	Analytical Software	Enviroquant MSD Chemstation D.01.02.16 15 June 2001			
6890N- G (R-GC-58)	Gas Chromatograph	Agilent 6890N	US10520018	PCB	2005
	Detector	Micro ECD			
	Injector	Agilent G2913A	CN51624717		
	Autosampler	Agilent G2614A	CN51032422		
	Computer Workstation	DELL ALRCENW011	7BQRS71		
	Firmware	N.05.05			
	Analytical Software	Enviroquant MSD Chemstation D.01.02.16 15 June 2001			
6890N- I (R-GC-59)	Gas Chromatograph	Agilent 6890I	US10552066	Petroleum Hydrocarbons, Method 18	2006
	Detector	FID			
	Injector	Agilent G2913A_7683B	CN60931630		
	Autosampler	Agilent G2614A	US81800809		
	Computer Workstation	DELL ALRCEWP012	818W761		
	Firmware	N.05.05			
	Analytical Software	Chemstation D.02.00.275			

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HP6890-J (R-GC-60)	Gas Chromatograph	Agilent 6890	US00039730	8015	2008
	Detector	FID			
	Injector	7683 Tower	MS93408790		
	Autosampler	Agilent G2613A_7683	US04910055		
	Columns	Supelcowax 60m, 0.53mm, 1u film, Agilent DB-624 60m, 0.53mm, 3.0u film			
	Computer Workstation	DELL ALRCEWP012	818W761		
	Firmware	A.03.07			
	Analytical Software	Agilent Chemstation 1701 H V2.00			
HP6890-K (R-GC-61)	Gas Chromatograph	Agilent 6890	CN10647081	Method 18	2008
	Detector	FID			
	Injector	76888 Tower G2913A	CN61732829		
	Autosampler	Agilent G2614A	CN31023400		
	Computer Workstation	DELL ALRCEWP012	818W761		
	Firmware	N.05.05			
	Analytical Software	Agilent Chemstation 1701 A U2.00			
7890-M (R-GC-62)	Gas Chromatograph	Agilent 7890	CN12161177	Pesticides	2013
	Detector	Dual ECD			
	Injector	Agilent 7693	CN12120018		
	Tray	Agilent 7693	CN11450020		
	Computer Workstation	HP with Windows 7 ALRCEW7002			
	Firmware	A.01.14			
	Analytical Software	G1701ea 2.02			
7890-N (R-GC-63)	Gas Chromatograph	Agilent 7890B(G3440B)	CN16283107	Pesticides	2016
	ECD - front	Agilent G2397A	U29461		
	ECD - back	Agilent G2397A	U29442		
	Injector	Agilent G4513A	CN16220015		
	Tray	Agilent G4514A	CN16220031		
	Computer Workstation	Prodesk NARCEW7030	2UA624210Z		
	Firmware	B.02.04.2			
	Analytical Software	MassHunter G1701FA version B.07.04.2260 Chemstation DASW rev F.01.03	USH3765977		

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
EXTRACTABLES SUPPORT EQUIPMENT					
Buchi #1	Unit	Buchi Rotavapor R-300	1100049910	Concentrations	2021
	Interface	Buchi-I-300Pro	1100046460		
	Vacuum Pump	Buchi V-300	1100050299		
	Recirculating Chiller	Buchi F-314	2214120		
	Firmware	01.11.00.00			
Buchi #2	Unit	Buchi Rotavapor R-300	1100085505	Concentrations	2021
	Interface	Buchi-I-300Pro	1100080782		
	Vacuum Pump	Buchi V-300	1100082191		
	Recirculating Chiller	Buchi F-314	2214120		
	Firmware	01.12.00.00			
L6	Nitrogen Evap System	LabConco RapidVap	191083869	Concentrations	2019
L8	Nitrogen Evap System	LabConco RapidVap	200593843	Concentrations	2021
N-EVAP	Organomation N-EVAP	Model 112	7531	Concentrations	<2011
SI600	Incubated Shaker	Lab Companion SI600	R069376	Extractions	<2011
Microwave #1	Microwave	CEM MARS6 Model 910900	MY1656	Soil Extractions	used 2020
	Firmware	1.64			
Microwave #2	Microwave	CEM MARS6 Model 910900	MJ2199	Soil Extractions	used 2021
	Firmware	1.64			
Automated Soxhlet #1	Automated Soxhlet	Gerhardt SOX416	1/8465080006	Soil Extractions	2008
Automated Soxhlet #2	Automated Soxhlet	Gerhardt SOX416	1/8465080007	Soil Extractions	2008
Automated Soxhlet #3	Automated Soxhlet	Gerhardt SOX416	1/8465090004	Soil Extractions	2009
Automated Soxhlet #4	Automated Soxhlet	Gerhardt SOX416	1/8465090005	Soil Extractions	2009
Soxhlet Controller	Software/ Firmware	Gerhardt Soxtherm Manager SX PC 2.16			
Autoshaker #4	Automated Shaker	Glas-Col Model 099A VS20012	11811288	Extractions	2018
	Funnel Holders	Model 099A VH2000T	11811281 11811282 11811286 11811287		
Autoshaker #5	Automated Shaker	Glas-Col Model 099AVS20012	11811289	Extractions	2018
	Funnel Holders	Model 099A VH2000T	11811280 11811283 11811284 11811285		
Autoshaker-06	Rotator		5046WKBL00005	Extractions	2019
WristShaker-01	Burrell Wrist Action Shaker	Model 75		Extractions	<2011
641276A	Centrifuge	Dynac11		Extractions	<2011

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EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired

HPLC

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HPLC03 (R-HPLC-03)	Binary Pumps	Shimadzu LCD10ADVP	1(A) C20963851348US 2(B) C20963851344US	Hydroquinone	2005
	UV/VIS Detector	Shimadzu SPD10AVVP	C21004050470US		
	Fluorescence Detector	Shimadzu RF-20A	L204949 56092		
	Electrochemical Detector	BAS LC4C/CC5	LC-4C 7014		
	AutoSampler	Shimadzu SIL10ADVP	C21053850511US		
	System Controller	Shimadzu SCL10AVP	C21013851302US		
	Degasser	Shimadzu DGU 14A	101076		
	Temperature Control Module	Shimadzu cto-20a	L20205152152		
	Computer Workstation	Gateway P7-450 ALRCENW010	14045751		
	Firmware	Concentrator SLC-10ADVp5.33 Pumps LC-10ADUp 9.18 Injector SIL-10ADVp 6.32 Gum CTO-20A 1.08 UV-vis SPD-10AUUP 5.23 Fluor RF-20A 1.05			
	Analytical Software	HP Chem B.02.05 Enviro G1701BA			

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HPLC05 (R-HPLC-05)	Degasser	Degasser G1322A	JP 7305035	Metabolic Acids/client specific	2007
	Binary Pump	Agilent 1100/G1312A	US70600653		
	Diode Array Detector	Agilent 1100/G1315B	DE11112376		
	AutoSampler	Agilent 1100/G1313A ALS	DE72003859		
	Computer	ALRCEWP008			
	Firmware	A.05.11 (013)			
	Analytical Software	Chemstation for HPLC Rev A 09.0S1206	Data Acquisition and Instrument Control		

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HPLC06 (R-HPLC-06)	Detector	Agilent 1100/G1315A	US74901960	Formaldyhyde	2011
	Degasser	Agilent 1100/G1322A	JP73010194		
	AutoSampler	Agilent 1100/G1313A	US80603194		
	Quaternary Pump	Agilent 1100/G1310A	DE33206020		
	Temperature Control Module	Agilent 1100/G1316A	US54000565		
	Computer	ALRCEXP019			
	Firmware	A.05.11 (013)			
	Analytical Software	Chemstation for HPLC Rev A.09.03[1417]	Data Acquisition and Instrument Control		

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EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
METALS					
FIMS-02 (or FIMS II) (R-CVAA-02)	CVAA-FIMS	Perkin Elmer FIMS 100	101S12110203	Mercury	2013
	Autosampler	S-10	102S13020818		
	Computer Workstation	Lenova ThinkCentre NARCEW7031			
	Firmware	Spectrophotometer and FIAS 2.20, Autosampler 1.85			
	Analytical Software	PE AA WinLab 32 v.7.2			
Teledyne Leeman Quick Trace (R-CVAF-02)	CVAF	Teledyne Quick Trace M-8000	US17335019	Low Level Mercury	2018
	Autosampler	Teledyne ASX 280	121738A280		
	Computer Workstation	Dell Optiplex 3050 NARCEWX003	-		
	Analytical Software	QuickTrace Rev.3.1	-		
ICP #6 (R-ICP-AES-06)	Instrument	Agilent 5100	MY15340001	Metals	2015
	Autosampler	SPS4	AU15340450		
	Computer Workstation	HP Z230 NARCEW7024			
	Firmware	3585			
	Analytical Software	ICP Expert Pro 7.4.1.10449			
Agilent 7900 (R-ICP-MS-02)	ICP/MS	Agilent 7900	JP1649642	Metals	2017 (used)
	Autosampler	SPS 4	Au16321750		
	Computer Workstation	HPZ240 NARCEW7035	ZuA6373K2L		
	Firmware	4.00.03 003.04.			
	Analytical Software	MassHunter 4.4	G7201C version C.01.04 Build 544.3		
HOTBLOCKS - METALS					
WC Block #1	54 wells -50 mL	Environmental Express		Metals Digestions	2012
Hotblock #4	25 wells - 100 mL	Environmental Express		Metals Digestions	2005
Hotblock #7	54 wells -50 mL	Environmental Express		Metals Digestions	<2017
Hotblock #8	54 wells -50 mL	Environmental Express		Metals Digestions	<2017
Hotblock #9	120 wells - 10 mL	ALS	Control Box ALS16074	Metals Digestions	2017
Hotblock #10	120 wells - 10 mL	ALS	Control Box ALS16075	Metals Digestions	2017
Hotblock #11	54 wells -50 mL	Environmental Express		Metals Digestions	2021
Hotblock #12	54 wells -50 mL	Environmental Express		Metals Digestions	2021
TCLP					
TCLP Rotator #4	10 place box	Lars Lande		TCLP/SPLP	<2003
TCLP Rotator #6	12 place box	Environmental Express	8507-12-660	TCLP/SPLP	2013
TCLP Rotator #7	12 place collar	Analytical Testing Corp	5685YEBC0019	TCLP/SPLP	2021

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GENERAL CHEMISTRY					
Skalar (R-Buret-02) (R-DOmeter-05) (R-pH-08) (R-Condmeter-04)	Robotics	Skalar SP2003 21088903-01	15207	Alkalinity, pH	2016
	Autoitrator	Metrohm 848 Titrino Plus	1066010		
	Buret	Exchangeable 20 mL	1066010		
	DO Meters	2 x YSI ProODO 626281	15H100558 15H100559		
	YSI ProComm II Kit	2 x Item 605404	15G100513		
	YSI ProOBOD Probe	2 x 626400	15F102995 15F102996		
	External Pump	Skalar 21007965-01	15821		
	Conductivity Meter	Skalar Consort C6010	not in use		
	Conductivity probe	Skalar Consort 20T	107769		
	pH probe	Metrohm Aquatrode			
	Computer Workstation	Dell Optiplex 3020 NARCEW7025			
	Analytical Software/Firmware	Skalar Robotics v.1.74Release firmware 1088 version 2.23 714: 705:3.0 710:3.4	99300021USA		
202643	digital Barometer	VWR 10510-922	181563215	Barometric Pressure	2019
TOC#1 (R-TOC-01)	TOC Analyzer	OI Model 1010	J245710349	out of service	2003
	Autosampler	OI Model 1051	B247751184		
	Computer Workstation	Gateway GP6-300 ALRCENW017	10709094		
	Firmware	version 365			
	Analytical Software	OI WinTOC for 1010 v.01 Rev 225	-		
TOC#3 (R-TOC-03)	TOC Analyzer	Elementar Vario TOC Cube	38135054	TOC	2014
	Computer Workstation	Dell Optiplex 3020 NARCEW7006	25127169373		
	Firmware	version 1CC			
	Analytical Software	Vario TOC v3.0.8	1cc5b019		
TOC-04 (R-TOC-04)	TOC Analyzer	Shimadzu TOC-L(csh) Model 638-91151-43	H54425930043 CS	TOC	2022
	Computer Workstation	Dell Precision 3450 with Windows 10 HBB4RJ3	Service Tag # HBB4RJ3		
	Firmware	version 1.09			
	Analytical Software	TOC-Control L Software	TOCL-10900-101045		

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
QC8500 (R-FIA-05)	Flow Injection System	Lachat 8500		Cyanide, NO2/NO3, Phosphorus, Silica, Ammonia, TKN	2011
	Colorimeter		110100001295		
	Amperometric Detector	BASi CC-5e	5966		
	Cell	BASi CC-3D	11314		
	Pump	14951	0595996-2		
	Autosampler	ASX-260	021109A260		
	Computer Workstation	Dell Optiplex 780 ALRCEXP043			
	Firmware	V.9.0.333.0			
	Analytical Software	Omnion FIA v.3.0	-		

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
R-Discrete-02	Instrument	ThermoFisher Gallery	861000110585	NO2, OPO4, Cr6+, Ammonia	2017
	Computer Workstation	Dell Optiplex 7040 NARCEW7033			
	Firmware	V.6.0			
	Software	Gallery			

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
SAN++ (R-FIA-06)	Flow Injection System	Skalar 5000	182775	Phenol Cyanide	2018
	UV Digester	5565	18122		
	Reagent Valve	21530919	18922		
	Computer Interface				
	Autosampler	21074900-01	18882		
	Computer Workstation	Dell Optiplex 3050 NARCEWX005			
	Firmware	Version Lab 7			
	Analytical Software	FlowAccess V4			

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
IC#3 (R-IC-03)	Ion Chromatograph	Metrohm 861 Advanced Compact IC		26A Anions	2005
	Basic Chromatography Module	Metrohm	861-02114		
	Pump	Metrohm	62824100s20		
	Conductivity Detector	Metrohm	integrated		
	Autosampler	Metrohm	838-04105		
	Computer Workstation	Dell OptiPlex GX520 ALRCEXP004	6VRC581		
	Firmware	SR#2			
	Analytical Software	IC NET 2.3 SR2	A.701.0016		

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
IC # 5 (R-IC-05)	Ion Chromatograph	Dionex ICS-1000	7090145	Cr6+	2007
	Gradient Pump	GP40			
	Conductivity Detector	DS6	7081071		
	Autosampler	AS40	7090325		
	Computer Workstation	Dell Optiplex 745 NARCEW7040	1441DAA99		
	Firmware	Version 1127			
	Analytical Software	Chromeleon 6.80	56276		
IC # 6 (R-IC-06)	Ion Chromatograph	DX-120	10169	Out of service	2008
	Conductivity Detector	DS4-1	10133		
	Autosampler	AS40	4070066		
	Computer Workstation	Gateway 2000 GP6-266	10239250		
	Analytical Software	Peaknet 5.21	192-994-1564		
IC # 7 (R-IC-07)	Ion Chromatograph	DX500		TMA/TMAH	2008
	Basic Chromatography Module	LC20	99050321		
	Gradient Pump	GP50	99050419		
	Conductivity Detector	CD20	99050289		
	Autosampler	AS40	99011702		
	Computer Workstation	Gateway 2000 GP6-266 ARCEW9001	10239250		
	Analytical Software	Peaknet 5.21	192-994-1564		
IC #8 (R-IC-08)	Ion Chromatograph	Dionex ICS-2100	12030901	Cr6+	2012
	Heated Conductivity Cell	DS6	12030664		
	Reagent Pump	AXP	20045075		
	Variable Wavelength Detector		12031294		
	Autosampler	AS-AP	12031171		
	Computer Workstation	Dell Optiplex 790 NARCEW7040	15105322945		
	Firmware	Version 1127			
	Analytical Software	Chromeleon 7.0	151838		

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
IC # 9 (R-IC-09)	Ion Chromatograph with gradient pump	Dionex 2100	12090703	out of service	2013
	Conductivity Detector	DS6	12090530		
	Autosampler	ASDV	12090422		
	Computer Workstation	Shares with IC#8			
	Firmware	Version 1127			
	Analytical Software	Shares with IC#8			
IC # 10 (R-IC-10)	Ion Chromatograph	Metrohm 930 Complact IC Flex		Anions	2020
	Basic Chromatography Module	Metrohm	1930200072154		
	Pump	Metrohm	40654		
	Conductivity Detector	Metrohm	18509010566141		
	Autosampler	Metrohm	1858002007735		
	Computer Workstation	Del Optiplex AIO NARCEWX010	OHL3QR4		
	Firmware	SR#130			
	Analytical Software	MagIC Net Version 3.3	4612612		
HB#6	54 place Hotblock with stirbase	Environmental Express SC154		Cr6+ digestions / Amenable Cyanide Prep / Metals digestions	<2015
TDS HB#1	24 place Hotblock for Stableweigh bags	Environmental Express TDS024	2021TDSW135	TDS evaporation	2021
TDS HB#2	24 place Hotblock for Stableweigh bags	Environmental Express TDS024	2021TDSW134	TDS evaporation	2021
Autoclave	Tutternauer	3870m	2801669	Micro/TPO4	2011

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
Midi #1	Midi Distillation System	BSL Co	none	Sulfide Distillation	1997
Midi #2	Midi Distillation System			Sulfide Distillation	~2011
Micro Dist #1	Micro Distillation System	Lachat MicroDist	100500002065	Cyanide Distillation	2010
Micro Dist #2	Micro Distillation System	Lachat MicroDist	100500002066	Cyanide Distillation	2010
Turbidimeter (R-Turbidimeter-02)	Turbidimeter	HF Scientific Micro 100	609246	Turbidity	2000
MR 21D (R-UV-VIS-06)	Spectro-photometer	Milton Roy Model 332278	3152011032	COD	Received used 2019
1600PC (R-UV-VIS-05)	Spectro-photometer	VWR 1600PC 10037-436	UEE1605011	UV254, H2O2, Fe2+	2016
LDO Meter #3 (R-DOMeter-03)	Dissolved Oxygen Meter	Hach HQ40d	131783034008	DO, BOD	2013
LDO Meter #4 (R-DOMeter-04)	Dissolved Oxygen Meter	Hach HQ40d	131783034012	DO, BOD	2013
Closed Cup (R-Flash-02)	Closed Cup Flashpoint Tester	Boekel Model 152800	none	Ignitability - liquid waste	1993
Karl Fischer Titrator (R-KF-02)	Mettler Toledo	V20 Karl Fischer Titrator	B426750030	% Water	2014
OLD #1	TKN Digestion Block and Control	AI Scientific Pty Ltd AIM600	4726A12136	TKN digest	2007
NEW #2	TKN Digestion Block and Control	Seal Analytical AIM600	5146UO0286	TKN digest	2014
Fluorometer (R-Fluorometer-01)	Fluorometer	Turner Designs Trilogy 7200-000	720000843	Chlorphyll a	2012
	Chlorophyll a Module	Turner 7200-040	-		
Cicero	Solids Vacuum Manifold	Environmental Express Stable Weigh 6 place Filling Station TDS600F	Lot 67-8107	TDS	2018
Accuprep #1	6 place Solid Phase Extraction	CPI Accuprep 7000	-	1664	~1999
Accuprep #2	6 place Solid Phase Extraction	CPI Accuprep 7000	-	1664	~1999

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
Dry Bath 01	Oil and Grease Nitrogen Evaporator	Thermo Drybath Stdrd Cat #8887003	HBBT70003040	1664	2018
Dry Bath 03			HCBT70003024	1664	2019
Dry Bath 04				1664	2020

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
COD Block #1	COD Blocks	Hach 45600-00	31000025012	COD Digestion	<1998
COD Block #2		Hach 45600-00	30800024827		<1998
COD Block #3		Environmental Express HotBlock COD			2018

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
pHat Albert (R-pH-01)	pH Meters	VWR SympHony B10P Probe Orion 9156BNWP	13246S0013	WC Support	2013
Toto (R-pH-06)		VWR SympHony B10P Probe Orion 9156BNWP	13219S0006	WC Support	2013
Robin (R-pH-07)		VWR SympHony B10P Probe Orion 9156BNWP	14021S0009	WC Support	2014
R-pH-05		SympHony SB80PC pH Probe VWR 89231-572	D04334	pH SMO-PH	2008
R-pH-09		VWR SympHony SB80PC pH Probe 14002-780 Cond Probe Thermo 013005MD	D00582	Extractables pH / WC Cond	2008
R-pH-10		Metrohm 913 pH meter with probe: Metrohm 6.0228.020	1913001015318	WC Support	2021

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
R-Balance-03	Top Loading Balances	Mettler Toledo PB602-S	1118331281	Metals	<2002
R-Balance-05		Mettler Toledo PB602-S	1125322050	Extractables	2004
R-Balance -14		Ohaus ScoutPro SP6001	7/31340865	SMO	2010
R-Balance -16		Ohaus ScoutPro SP4001	7126311345	out of service	2013
R-Balance-20		Sartorius Entris 3202-1S	36306768	Wetchem	2018
R-Balance-22		Ohaus AX422/E	C009047236	VOA	2020
R-Balance-23		Ohaus AX2202	C123930637	WC	2021
R-Balance-02	Analytical Balances	Mettler AE240	F96727	VOA	1996 used
R-Balance-10		Mettler AE200	J29745	Wetchem	2008 used
R-Balance-11		Mettler AG204	120330501	Wetchem	2001
R-Balance-13		Mettler AE160	D40689	Extractables	2008 used
R-Balance-18		Ohaus PA224C	B507619728	Wetchem	2015
R-Balance-19		Ohaus PA224C	B507619729	Metals	2015
R-Balance-21	Semi-Micro Balance	Sartorius Secura2250-1S	37608437	Wetchem	2019
R-Oven-Metal-01	Thermo Scientific	Model 6528	604341-206	104	2008
R-Oven-07	VWR	1370FM	601403	104	2011
R-Oven-08	VWR	89511-412	41623188	Sulfate drying	2014
R-Oven-09	VWR Oven Gr Con 6.2CF	Cat# 89511-408	42473430	180	2019
R-Oven-10	VWR Oven F Air 6.2CF	Cat#89511-414	42749456	104	2021
R-Oven-11	VWR Oven Gr Con 6.2CF	Cat# 89511-408	42857592	90, 104	2021
Kiln	Skutt Automatic Kiln	Model KM-1218-3	001168	Glassware/Sodium sulfate purification	2011
Thermolyne F48025-60	Muffle Furnace	F48025-60	150440201110801	Wetchem	2011

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
C-1	**Sample Cooler**	Bally Engineered Structures, Inc.	VOA	Sample Storage	2011
C-2	**Sample Cooler**	American Cooler Technologies		Sample Storage	2011
Micro Incubator #2	**Incubator**	Barnstead Model 403	1463060539124	not in use	2017 used
Micro Incubator #3	**Incubator**	VWR Incubator GrCon 4CF Cat#89511-420	42440095	Micro	2019
Micro Water Bath #1	**Water Bath**	VWR MX28C135-V11B	2102-00031	Micro	2021
BOD Incubator	**Incubator**	Shultz		BOD Closet	2011
R-4	**Reagent Fridge**	Revco Scientific	TY90605E	WC Reagents	<1997
R-10	**Sample Fridge**	Kenmore 253.70722410	WA44402244	VOA Bulk Soil Sample Storage	2014
R11	**Standards Fridge**	Haier HC27SF10RB	BS0880E1G 00BKEA80781	FID Standards	2015
R14	**Sample Cooler**	True Manufacturing Co GDM-72-HC-TSL01	9108913	WC Samples	2017
R15	**Sample Cooler**	True Manufacturing Co GDM-72-HC-TSL01	9097760	WC Samples	2017
R16	**Sample Cooler**	True Manufacturing Co GDM-72-HC-TSL01	9108912	WC Samples	2017
R18	**Sample Cooler**			High Conc VOA Cooler	2018 used
R20	**Sample Fridge**	Frigidaire JD-20 Model FF2021TS8	4A11211543	Extactables	2021
R21	**Standards Fridge**	Migali C-23RM-HC	003211102092C009	WC Standards	2022
R22	**Sample Fridge**	Avantco 178GDC69HCB	6589311821093219	WC Samples	2022
R23	**Extract Fridge**	Avantco 178GDC15HCW	6722310421124800	Extactables	2022
F- 5	**Sample Freezer**	Maytag	12377439GV	SMO Sample Storage	
F-6	**Extract Freezer**	GE	SH175743	Extractables	
F-08	**Standard Freezer**	Signature	23429-1	VOA Standards	
F-9	**Sample Freezer**	GE	MS145661	VOA Sample Storage (5035)	
F-10	**Sample Freezer**	Labline		SMO Sample Storage	
F-12	**Standards Freezer**	Whirlpool WZF34X16DW01	470303370	Extractables	2017
F-13	**Extract Freezer**	Frigidaire LFFH20F3 QWC	WB65147646	Extractables	2017

Note that the computers listed with the instruments are dedicated to that instrument for data aquisition, but the data files are saved to a lab-wide network and data may be accessed by any computer with the correct software - provided the user is authorized to do so.

Preventive Maintenance Procedures			
Instrument	**Activity**	**Laboratory or Vendor Performed**	**Frequency**
Refrigerators and Coolers	Clean coils Check coolant	Vendor Vendor	As needed As needed or if temperature outside limit
Fume Hoods	Face velocity measured Sash operation	Laboratory Laboratory	Quarterly As needed
Ovens	Clean	Laboratory	As needed or if temperature outside limit
Incubators	Record temperatures	Laboratory	Every 15 minutes, electronically
Autoclave	Check temperature Clean	Laboratory Laboratory	Each use as needed
Top Loading Balances	Check calibration Check alignment Cleaning, calibration, adjustment, and spec compliance Repair	Laboratory Laboratory Vendor Vendor	Before every use Before every use Annually As needed
Analytical Balances	Check alignment Check calibration Clean pans and compartment Cleaning, calibration, adjustment, and spec compliance Repair	Laboratory Laboratory Laboratory Vendor Vendor	Before every use Daily,before use After every use Annually As needed
Dissolved Oxygen Meter	Check for scratches on sensors	Laboratory	Daily
pH probes	Condition probe	Laboratory	When fluctuations occur
UV-visible Spectrophotometer	Wavelength check	Vendor	Annually
Discrete Analyzer	Empty and Rinse Cuvette Container Empty and Rinse Waste Container Fill Diluent with fresh DI Follow prompts from instrument	Laboratory Laboratory Laboratory Laboratory	Daily Daily Daily Daily/Weekly/Monthly

Preventive Maintenance Procedures

Instrument	Activity	Lab or Vendor Performed	Frequency
Total Organic Carbon Analyzers	Check IR zero Check digestion/condensation vessels Clean digestion chamber Clean permeation tube Clean six-port valves Clean sample pump Clean carbon scrubber Clean IR cell	Laboratory Laboratory Laboratory Laboratory Laboratory Laboratory Laboratory Laboratory	Weekly Each use Every 2000 hours, or as needed Every 2000 hours, or as needed Every 200 -2000 hours, or as needed Every 200 -2000 hours, or as needed Every 200 -2000 hours, or as needed Every 2000 -4000 hours, or as needed
Flow Injection Analyzer	Check valve flares Check valve ports Check pump tubing Check flow cell flares Change bulb Check manifold tubing Check T's and connectors	Laboratory Vendor Laboratory Laboratory Laboratory Laboratory Laboratory	Quarterly As needed Daily Quarterly As needed Every six months Every six months
Ion Chromatograph	Change column bed supports Clean column Change column Change tubing Eluent pump	Laboratory Laboratory Laboratory Laboratory Laboratory	Monthly or as needed Monthly or as needed Every six months or as needed Annually or as needed Annually
Atomic Absorption Spectro-photometers -CVAA	Check gases Check aspiration tubing Empty waste container	Laboratory Laboratory Laboratory	Daily Daily Weekly
ICP-AES	Check argon dewar Replace peristaltic pump tubing Empty waste container , , spray torch Replace water filter Replace or vacuum air filters	Laboratory Laboratory Laboratory Laboratory Laboratory Laboratory	Daily Daily, or as needed Daily, or as needed Every two weeks, or as needed Quarterly, or as needed Monthly, or as needed

Preventive Maintenance Procedures

Instrument	Activity	Lab or Vendor Performed	Frequency	Instrument
ICP-MS	Check argon dewar		Laboratory	Daily
	Replace peristaltic pump tubing		Laboratory	Daily, or as needed
	Empty waste container Clean nebulizer, spray chamber, and torch		Laboratory Laboratory	Daily, or as needed Every two weeks, or as needed
	Clean Cone		Laboratory	As needed
	Check air filters		Laboratory	Annually or as needed
	Check rotary pump oil Clean ion lens stack		Laboratory Laboratory	Quarterly, or as needed Annually or as needed
Chromatographs	Clean and repack column		Laboratory	As needed
	Backflush valves		Laboratory	As needed
Gas Chromatographs	Check gas supplies		Laboratory	Daily, replace when pressure reaches 250 psi
	Change in-line filters		Laboratory	Quarterly or after 30 tanks of gas
	Change injection port liner		Laboratory	Daily or as needed
	Clip first foot of capillary column		Laboratory	As needed
	Change guard column		Laboratory	As needed
	Replace analytical column		Laboratory	As needed when peak resolution fails
	Check system for gas leaks		Laboratory	After changing columns
	Clean FID		Laboratory	As needed
	Leak test ECD		Laboratory	Annually
Gas Chromatograph/Mass Spectrometers	Check gas supplies		Laboratory	Daily, replace when pressure reaches 50 psi
	Change in-line filters		Laboratory	Quarterly or after 30 tanks of gas
	Change septum		Laboratory	Daily
	Change injection port liner		Laboratory	Weekly or as needed
	Clip first foot of capillary column		Laboratory	As needed
	Change guard column		Laboratory	As needed
	Replace analytical column		Laboratory	As needed when peak resolution fails
	Clean jet separator		Laboratory	As needed
	Clean source		Laboratory	As needed when tuning problems
	Change pump oil Oil wick		Laboratory Laboratory	Every six months Every six months

Preventive Maintenance Procedures

Instrument	Activity	Lab or Vendor Performed	Frequency
Purge and Trap Concentrators	Change trap	Laboratory	As needed
	Change transfer lines	Laboratory	As needed
HPLC	Check gas supplies	Laboratory	Daily, replace when pressure reaches 200 psi
	Change guard column	Laboratory	As needed
	Change analytical column	Laboratory	As needed
	Change inlet filters	Laboratory	As needed
TCLP/SPLP Extractors	Monitor Room Temperature	Laboratory	Daily with use
	Monitor RPM of Rotators	Laboratory	Daily with use
	Leak Check ZHEs	Laboratory	Daily with use
	Grease fittings O-ring replacement	Laboratory	As needed

APPENDIX F – Sample Preservation, Containers, and Hold Times

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Bacterial Tests						
Coliform, Total	SM9223B	W	Sterile P,G	100	Cool, ≤6°C, 0.008% $Na_2S_2O_3$[d] No $Na_2S_2O_3$ if from unchlorinated source	30 hours
Inorganic Tests						
Alkalinity	SM2320B	W	P,G	125	Cool, ≤6°C no headspace	14 days
Ammonia	EPA 350.1	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Ammonia	EPA 350.1	S, NAq	P,G	4 oz.	Cool, ≤6°C	28 days
Ash, Percent	ASTM D482	NonAq Liq	P,G	250	Cool, ≤6°C	None Listed
Biochemical Oxygen Demand (BOD/ CBOD)	SM5210B	W	P,G	1000	Cool, ≤6°C	48 hours
Bromide	300.0/9056A	W	P,G	125	Cool, ≤6°C (not required)	28 days
Bromide	9056A	Naq, S	P,G	4 oz.	Cool, ≤6°C (not required)	None listed
Chemical Oxygen Demand (COD)	410.4	W, NAq	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Chemical Oxygen Demand (COD)	SM 5220B	S, NAq	G	4 oz.	Cool, ≤6°C	28 days
Chloride	300.0/ 9056A	W	P,G	125	Cool, ≤6°C (not required)	28 days
Chloride	9056A	Naq, S	P,G	4 oz.	Cool, ≤6°C (not required)	None listed
Chlorine, Total Residual	SM4500Cl F	W	P,G	500	None Required- field analysis preferred	15 minutes
Chlorine Demand	SM 409A	W	P,G	500	Cool, ≤6°C	None listed
Chlorophyll a - fluorometric	SM 10200H	W	P, Amber G, or filter	1000 or filter	Filter immediately and freeze filter	3 weeks
Color	SM2120B	W	P,G	100	Cool, ≤6°C	48 hours
Cyanide, Total, Amenable to Chlorination, Weak Acid Dissociable	335.4/ SM4500CNG /9012B/ Kelada-01	W	P,G	125	Cool, ≤6°C, NaOH to pH>12	14 days
Cyanide, Total	9012B	S	P,G	4 oz.	Cool, ≤6 °C	14 days
Density	ASTM D4052	NonAq Liq	P,G	250	None	None listed
Ethylene Glycol	NYSDEC 89-9	W	G	3x40 mL	Cool, ≤6°C	None listed
Fluoride	300.0/9056A	W	P,G	125	Cool, ≤6°C (not required)	28 days

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Fluoride	9056A	Naq, S	P,G	4 oz.	Cool, ≤6°C (not required)	None listed
Hardness	SM2340BorC	W	P,G	250	HNO_3 to pH<2	6 months
Hydrogen Ion (pH)	SM4500 H+B/ 9040	W	P,G	100	None Required – field analysis preferred	15 minutes
Ignitability – closed cup	1010A	Liquid	G	3 x 40mL	Cool, ≤6°C	14 days
Iodide	300	W	P,G	125	Cool, ≤6°C	28 days suggested
Iron, Ferrous	SM 3500 Fe D	W	P,G	125	Cool, ≤6 °C, no headspace	Immediate (24 hours – Field preferred)
Kjeldahl and Organic Nitrogen	351.2	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Kjeldahl and Organic Nitrogen	351.2	S, NAq	P,G	4oz.	Cool, ≤6°C	28 days
Nitrate	300.0/9056A	W	P,G	125	Cool, ≤6°C	48 hours
Nitrate	9056A	Naq, S	P,G	4 oz	Cool, ≤6°C	None listed
Nitrate-Nitrite	353.2	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Nitrite	300.0/9056A/ 353.2	W	P,G	125	Cool, ≤6°C	48 hours
Nitrite	9056A	S, Naq	P,G	4 oz	Cool, ≤6°C	None listed
Odor	SM 2150B	W	G	300 mL	None	Immediate
Oil and Grease	1664A	W	G, Teflon-Lined Cap	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Orthophosphate	365.1	W	P,G	125	Filter in field, Cool, ≤6°C	48 hours
Phenolics, Total	420.4/9066	W	Amber G Only	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Phenolics, Total	9066	S	G	4 oz.	Cool, ≤6°C	28 days
Phenolics, Total	9066	NAq	G	250	Cool, ≤6°C	28 days
Phosphorus, Total	365.1	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Phosphorus, Total	365.1	S, NAq	P,G	4 oz.	Cool, ≤6°C	28 days
Reactive Cyanide and Sulfide	Chpt7/9010	W,S	P,G	500 or 4 oz.	Cool, ≤6 °C	None listed
Residue, Total	SM2540B	W	P,G	250	Cool, ≤6°C	7 days
Residue, Filterable (TDS)	SM2540C	W	P,G	250	Cool, ≤6°C	7 days
Residue, Nonfilterable (TSS)	SM2540D	W	P,G	1000	Cool, ≤6°C	7 days
Residue, Settleable	SM2540F	W	P,G	1000	Cool, ≤6°C	48 hours

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Residue, Volatile (TVS, TVSS, TVDS)	SM 2540G	W	P,G	See Total Residue	Cool, ≤6°C	7 days
Residue, Volatile	SM 2540G	S	P,G	4 oz.	Cool, ≤6°C	none
Specific Conductance	120.1	W	P,G	100	Cool, ≤6°C Reagent Waters – no headspace	28 days Reagent Waters – 48 hours suggested
Specific Gravity	ASTM D1475	NonAq Liq	P,G	250	None	None listed
Sulfate	300.0/9056A	W	P,G	125	Cool, ≤6°C	28 days
Sulfate	9056A	Naq, S	G	4 oz.	Cool, ≤6°C	28 days
Sulfide, Acid Soluble	SM 4500-S2 F /9034	W	P,G	500	Cool, ≤6°C, Add Zinc Acetate plus NaOH to pH>9 No headspace	7 days
Sulfide, Acid Soluble	9030B/9034	S	P,G	4 oz.	Cool, ≤6°C No headspace	7 days
Sulfite	SM 4500-SO32-B	W	P,G	250	None Required- field analysis preferred	15 minutes
Sulfur – Peroxide Digestion	300	W,S,Naq	P,G	250	Cool, ≤6°C	None
Sulfuric Acid	8	A impingers	P,G	250	None	None
Temperature	170.1	W	NA	NA	None Required	Analyze immediately
Total Petroleum Hydrocarbons, Recoverable (gravimetric)	1664A	W	G, Teflon-Lined Cap	250	Cool, ≤6°C, HCl or H_2SO_4 to pH<2	28 days
Turbidity	180.1	W	P,G	100	Cool, ≤6°C	48 hours
UV Absorbing Constituents	SM 5910 B	W	P,G	125	Cool, ≤6°C	48 hours
Water, Percent	ASTM E203	W	P,G	4 oz.	Cool, ≤6°C	None listed

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Metals						
Chromium VI	218.6	W (not Drinking Water)	P,G	125	Cool, ≤6°C Buffering = pH 9.3-9.7 with specific solution	24 hours: 28 days if buffered
Chromium VI	218.6	Drinking Water	P,G	125	Cool, ≤6°C Buffering = pH 9.0-9.5 with specific solution	24 hours: 5 days if buffered
Chromium VI	218.7	Drinking Water	P,G	125	Cool, ≤6°C Buffering = pH >8 with specific solution	14 days
Chromium VI	7199, SM3500CrB	W	P,G	125	Cool, ≤6°C	24 hours
Chromium VI	7199	S	P,G	4 oz.	Cool, ≤6°C	30 days until digestion; 7 days until pH adjustment and analysis
Mercury, Low Level	1631E	W	G, double bagged	500	HCl BrCl in-lab, in bottle	28 days to BrCl 90 days from collection to analysis
Mercury	245.1/7470A	W	P,G	250	HNO_3 to pH<2	28 days
Mercury	245.5/7471B	S	P,G	4 oz.	Cool, ≤6°C	28 days
Metals, except Chromium VI and Mercury	200.7/200.8/ 6020A	W	P,G	125	HNO_3 to pH<2	180 days
Metals, except Chromium VI and Mercury	6010C	W	P,G	250	HNO_3 to pH<2	180 days
Lead and Copper for Public Water Systems	200.8	Drinking Water	P,G	1000-wide mouth	HNO_3 to pH<2 (upon receipt)	180 days
Lead for Schools	200.8	Drinking Water	P,G	250-wide mouth	HNO_3 to pH<2 (upon receipt)	180 days
Metals, except Chromium VI and Mercury	6010C/ 6020A	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	180 days
Metals, except Chromium VI and Mercury	6010C/ 6020A	Tissue	G, Teflon-Lined Cap	4 oz.	Freeze, ≤-10°C	180 days
Organics						
Organic Carbon, Total (TOC)	SM 5310B/C /9060	W	G	40	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Total Inorganic Carbon (TIC)	SM 5310C	W	G	125	Cool, ≤6°C	28 days
Organic Carbon, Total (TOC)/ Total Inorganic Carbon (TIC)	EPA Lloyd Kahn	S	G	4 oz	Cool, ≤6°C, no headspace	14 days
Organic Carbon, Total (TOC)/ Total Inorganic Carbon (TIC	EPA Lloyd Kahn	NAq	G	4 oz	Cool, ≤6°C, no headspace	None listed
Petroleum Hydrocarbons, Total	310-13	W	G, Teflon-Lined Cap	2x1000	Cool, ≤6°C,	7 days until extraction; 40 days after extraction
Petroleum Hydrocarbons, Total	310-13	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8260C/624.1	W	G, Teflon-Lined Septum Cap	3x40	No Headspace, Cool, ≤6°C, **Typical:** HCl to pH<2, **Residual Chlorine Known to be Present**: 25mg Ascorbic, then HCl to pH<2, Cool, ≤6°C 2-chloroethyl vinyl ether – unpreserved only Acrolein (624 only)– unpreserved (or field preserved to pH 4-5)	14 days 7 days if not chemically preserved 7 days 3 days (14 days if field preserved to pH 4-5)
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8260	S-Bulk Will be narrated	G, Teflon-Lined Cap	2 oz.	Cool, ≤6°C, Minimize Headspace	14 days
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8260	S - 5035	G, Teflon-Lined, Septum Cap	5g cores in 2x40 DI 1x40 MeOH Or 3 x 5g cores	Cool, ≤6°C, Freeze upon receipt Cool, ≤6°C or freeze, in coring tool, lab transfer to 2x40 DI 1x40 MeOH within 48 hours	14 days
Dissolved Gases	RSK-175	W	G, Teflon-Lined Septum Cap	3x40	Cool, ≤6°C, HCl to pH<2 No Headspace	14 days 7 days if not chemically preserved

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Semivolatile Organics						
Petroleum Hydrocarbons, Extractable (Diesel-Range Organics)	8015	W	G, Teflon-Lined Cap	2x1000	Cool, ≤6°C	7 days until extraction 40 days after extraction
Petroleum Hydrocarbons, Extractable (Diesel-Range Organics)	8015	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction
Non-Halogenated Organics	8015	W,S, NAq	G, Teflon-Lined Cap	3x40, 4 oz.	Cool, ≤6°C, No Headspace[g]	14 days
Phenols, Phthalate Esters, Nitrosamines, Nitroaromatics and Cyclic Ketones, Haloethers, Chlorinated Hydrocarbons, PAHs	625.1/ 8270	W	G, Teflon-Lined Cap	2x250 LL: 2x1000	Cool, ≤6°C, store in dark[g]	7 days until extraction; 40 days after extraction
Phenols, Phthalate Esters, Nitrosamines, Nitroaromatics and Cyclic Ketones, Haloethers, Chlorinated Hydrocarbons, PAHs	8270	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C, store in dark	14 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons	610/8310 625.1/ 8270 LL	W	G, Teflon-Lined Cap	2x1000.	Cool, ≤6°C, Store in Dark	7 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons	8270	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C, Store in Dark	14 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons	8270	T	G, Teflon-Lined Cap	4 oz.	Freeze, ≤-10°C, Store in Dark	14 days until extraction; 40 days after extraction
Organochlorine Pesticides	608.3/ 8081	W	G, Teflon-Lined Cap	2x250	Cool, ≤6°C, Adjust pH to 5-9 unless extracted within 72 hours	7 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	S, NAq	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	T	G, Teflon-Lined Cap	Hexane rinsed double aluminum foil and double bag	Frozen, ≤-20°C	Check client QAP 14/40 RIM Frozen 1 year for EPA Region 1
PCBs	608.3/8082	W	G, Teflon-Lined Cap	2x250, LL: 2x1000	Cool, ≤6°C	1 year until extraction and analysis
PCBs	608.3/8082	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	1 year until extraction and analysis
PCB Homologs	680	W	G, Teflon-Lined Cap	2x1000	Adjust pH to 5-9, Cool, ≤6°C, If not pH 5-9	7 days until extraction 40 days after extraction, 72 hours
PCB Homologs	680	T,S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	None listed

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Chlorinated Herbicides	8151	W	G, Teflon-Lined Cap	2x250	Cool, ≤6°C	7 days until extraction; 40 days after extraction
Chlorinated Herbicides	8151	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction
Metabolic/Fatty/Organic Acids	In house	W	G, Teflon-Lined Cap	2x40 or 250	Cool, ≤6°C, H_3PO_4	28 days recommended
Carbonyl Compounds (Formaldehyde)	8315	W	G, Teflon-Lined Cap	500	Cool, ≤6°C	3 days until extraction, 3 days after extraction
1,4-Dioxane	522	DW	G, Teflon-Lined Cap	500	Dechlorinate Na_2SO_3, Cool, ≤6°C, pH <4 $NaHSO_4$	28 days until extraction; 28 days after extraction
1,4-Dioxane	8270	W	G, Teflon-Lined Cap	500	Cool, ≤6°C[d]	7 days until extraction; 40 days after extraction

Toxicity Characteristic Leaching Procedure (TCLP)

Mercury	7470	HW	P,G	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: HNO_3 to pH<2	28 days until extraction; 28 days after extraction
Metals, except Mercury	6010	HW	P,G	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: HNO_3 to pH<2	180 days until extraction; 180 days after extraction
Volatile Organics	8260	HW	G, Teflon-Lined Cap	2 oz. (25g)	Sample: Cool, ≤6°C Minimize Headspace TCLP extract: Cool, ≤6°C, HCl to pH<2, No Headspace	14 days until extraction; 14 days after extraction
Semivolatile Organics	8270	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C, Store in Dark[g] TCLP extract: Cool, ≤6°C, Store in Dark	14 days until TCLP; 7 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: Cool, ≤6°C	14 days until TCLP; 7 days until extraction; 40 days after extraction
Chlorinated Herbicides	8151	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: Cool, ≤6°C	14 days until TCLP; 7 days until extraction; 40 days after extraction

a Holding time is from collection to analysis unless otherwise specified. Where allowed by project sampling and analysis protocols, the holding time for sediment, soil, and tissue samples may be extended for a defined period when stored frozen at -20°C.
b W=Water, S=Soil or Sediment, A = Air, HW = Hazardous Waste, T=Tissue, NAq = Non-Aqueous Liquid
c P=Polyethylene G=Glass
d For chlorinated water samples
e The recommended maximum holding time is variable, and is dependent upon the geographical proximity of sample source to the laboratory
g If the water sample contains residual chlorine, 10% sodium thiosulfate is used to dechlorinate.

APPENDIX G – Standard Operating Procedures

STANDARD OPERATING PROCEDURES

SOP NAME	FILE NAME
DATA RECALL	CE-GEN006
LABORATORY ETHICS and DATA INTEGRITY	CE-GEN001
SAMPLE BATCHES AND ANALYTICAL SEQUENCES	ADM-BATCH
CONFIRMATION OF ORGANIC ANALYTE IDENTIFICATION AND QUANTITATION	ADM-CONFIRM
NONCONFORMANCE AND CORRECTIVE ACTION	ADM-CA
CONTROL LIMITS AND TRENDING	ADM-CTRL_LIM
MAKING ENTRIES ONTO ANALYTICAL RECORDS	ADM-DATANTRY
DOCUMENT CONTROL	ADM-DOC_CRTL
HANDLING CUSTOMER FEEDBACK	ADM-FEEDBACK
MECHANICAL VOLUMETRIC DISPENSING DEVICES, VOLUMETRIC AND NON-VOLUMETRIC LABWARE	ADM-PCAL
INITIAL CALIBRATION	ADM-ICAL
INTERNAL AUDITS	ADM-IAUD
PREPARING SAMPLE DILUTIONS	ADM-DIL
GENERATION OF ELECTRONIC DATA DELIVERABLES USING EDDGE	ADM-EDD
LABORATORY DATA REVIEW PROCESS	ADM-DREV
DELAWARE HSCA PROGRAM SOP	ADM-DNREC-HSCA
USE OF ACCREDITATION ORGANIZATION NAMES SYMBOLS AND LOGOS	ADM-LOGO
PROJECT CHEMIST DUTIES AND REPORT REVIEW	ADM-PCR
PROCUREMENT AND CONTROL OF LAB SERVICES AND SUPPLIES	ADM-PUR
REPORT GENERATION	ADM-RG
RECORD STORAGE AND ARCHIVING	ADM-ARCH
CALIBRATION CHECK PROCEDURES FOR SUPPORT EQUIPMENT	ADM-DALYCK
MANUAL INTEGRATION	ADM-INT
MANAGEMENT REVIEW	ADM-MGMTRVW
PERFORMING METHOD DETECTION LIMIT STUDIES AND ESTABLISHING LIMITS OF DETECTION AND QUANTITATION	ADM-MDL
SOFTWARE QUALITY ASSURANCE AND DATA SECURITY	ADM-SWQADATA
PH MEASUREMENTS FOR SUPPORT OF OTHER METHODS - CALIBRATION, USE, AND DOCUMENTATION	ADM-PhSUPPORT
PROFICIENCY TESTING SAMPLE ANALYSIS	ADM-PTS
SIGNIFICANT FIGURES	ADM-SIG.FIG
ESTABLISHING STANDARD OPERATING PROCEDURES	ADM-SOP
SAMPLE PREPARATION, COMPOSITING, AND SUBSAMPLING	ADM-SPLPREP
QUALIFICATION OF SUBCONTRACT LABORATORIES	ADM-SUBLAB
TRAINING AND ORIENTATION	ADM-TRAINING
COORDINATION AND REPORTING OF SAMPLES REQUIRING DECANTED PERCENT SOLIDS	ADM-DECANT
CARBON DIOXIDE BY CALCULATION	ADM-4500 CO2 D
HARDNESS BY CALCULATION	GEN-2340B
LANGLIER INDEX CALCULATION	ADM-2330B
UN-IONIZED SULFIDE BY CALCULATION	ADM-H2SCALC
FIELD SAMPLING	FLD-SAMPLE
TEMPERATURE - FIELD	FLD-2550B
FIELD MEASUREMENTS OF DISSOLVED OXYGEN BY MEMBRANE ELECTRODE	FLD-4500OG
FIELD CHLORINE RESIDUAL	FLD4500CLG
pH IN WATER AND AQUEOUS WASTE	FLD-4500H+B
METHOD 18 - AIR SAMPLING	FLD-18
METHOD 26A - AIR SAMPLING	FLD-26A
BOTTLE PREPARATION, PACKING, AND SHIPPING	SMO-BPS
RECEIPT, STORAGE AND DISPOSAL OF FOREIGN SOIL UNDER USDA PERMIT	SMO-FOREIGN SOIL
SAMPLE RECEIVING	SMO-GEN
INTERNAL CHAINS OF CUSTODY	SMO-ICOC
SAMPLE DISPOSAL	SMO-SPLDIS

STANDARD OPERATING PROCEDURES

SOP NAME	FILE NAME
AMMONIA BY COLORIMETRY	GEN-350.1
ASH, DETERMINATION OF	GEN-ASH
BIOCHEMICAL OXYGEN DEMAND	GEN-5210B
CHEMICAL OXYGEN DEMAND-Soils	GEN-CODS
CHEMICAL OXYGEN DEMAND-Waters	GEN-410.4
CHLORINE DEMAND	GEN-409A
CHLORINE RESIDUAL	GEN-4500ClF
CHLOROPHYLL A BY FLUOROMETRY	GEN-CHLPHA
COLILERT AND VERIFICATION OF E.COLI IN MUG CULTURES	GEN-9223B
COLOR	GEN-2120B
CONDUCTIVITY IN WATER	GEN-120.1
TOTAL CYANIDE BY AUTOMATED IN-LINE UV DIGESTION, FLASH DISTILLATION, AND COLORIMETRIC ANALYSIS	GEN-KELADA
CYANIDE, AMENABLE TO CHLORINE	GEN-4500 CN G
CYANIDE, MIDI DISTILLATION	GEN-9012
CYANIDE, WEAK ACID DISSOCIABLE	GEN-WADCN
DENSITY OR SPECIFIC GRAVITY BY WEIGHT PER GALLON CUP	GEN-D1475Cup
DISSOLVED OXYGEN	GEN-DO
GLYCOLS AND FORMALDEHYDE BY COLORIMETRY	GEN-89-9
FERROUS IRON	GEN-3500
HARDNESS, TOTAL	GEN-2340C
ALKALINE DIGESTION FOR HEXAVALENT CHROMIUM IN SOIL	GEN-3060
HEXAVALENT CHROMIUM BY IC	GEN-7199
HEXAVALENT CHROMIUM - WATERS	GEN-CR6
HYDROGEN PEROXIDE IN AIR IMPINGERS BY MANUAL COLORIMETRY WITH TITANIUM (IV)	GEN-OSHAVI6
IN-LAB FILTRATION	GEN-FILTER
ION CHROMATOGRAPHY, DETERMINATION OF ANIONS BY	GEN-300.0
NITRATE AND NITRITE	GEN-353.2
NITROGEN, TOTAL KJELDAHL	GEN-351.2
OIL AND GREASE HEXANE EXTRACTION	GEN-1664
PAINT FILTER TEST	SMO-9095
PERCENT WATER BY KARL FISCHER	GEN-H2O
pH IN WATER AND AQUEOUS WASTE	SMO-PH
pH IN WATER AND AQUEOUS WASTE	SMO-PH
PHENOLICS, TOTAL	GEN-420.4/9066
PHOSPHORUS, ORTHO	GEN- OPO4
PHOSPHORUS, TOTAL	GEN-365.1
SKALAR, SPECIFIC CONDUCTANCE, PH, and ALKALINITY	GEN-SKALAR
SOLIDS, PERCENT	GEN-DWPS
SOLIDS, TOTAL	GEN-2540B
SOLIDS, TOTAL DISSOLVED	GEN-2540C
SOLIDS, TOTAL SUSPENDED	GEN-2540D
SOLIDS, VOLATILE AND FIXED (TOTAL, DISSOLVED, and SUSPENDED)	GEN-160.4
SOLIDS, PERCENT VOLATILE	GEN-2540G
SETTEABLE SOLIDS	GEN-2540F
SUSPENDED SEDIMENT CONCENTRATION IN WATER SAMPLES by ASTM D3977	GEN-SSC
SULFIDE, ACID SOLUBLE	GEN-9030B
SULFIDE, TOTAL AND DISSOLVED IN WATERS	GEN-4500S2F
SULFITE	GEN-4500SO3B
SULFURIC ACID BY METHOD 8	GEN-8
TMA and TMAH IN SORBENT TUBES AND WATER USNG IC	GEN-TMA(H)
TOTAL ORGANIC CARBON OR TIC B Y LLOYD KAHN/9060	GEN-TOCLK/9060
TOTAL ORGANIC CARBON-WATERS	GEN-5310

STANDARD OPERATING PROCEDURES

SOP NAME	FILE NAME
TOTAL INORGANIC CARBON - WATERS	GEN-TICW
TURBIDITY	SMO-180.1
UV-ABSORBING CONSTITUENTS	GEN-5910B
WET CHEMISTRY GLASSWARE CLEANING	GEN-GC
DETERMINATION OF METALS AND TRACE ELEMENTS BY ICP	MET-200.7/6010C
DETERMINATION OF METALS AND TRACE ELEMENTS BY ICP-MS	MET-6020A
MERCURY IN WATER AND SOLID OR SEMISOLID WASTE BY COLD VAPOR ATOMIC ABSORPTION SPECTROMETRY	MET-HG
MERCURY IN WATER BY OXIDATION, P&T, AND CVAFS	MET-1631
METALS DIGESTION, WATERS FOR ICP	MET-3010A
METALS DIGESTION, SOIL, SEDIMENT, SLUDGE FOR ICP AND GFAA ANALYSIS	MET-3050B
CLP DIGESTION TECHNIQUES FOR WATERS AND SOILS	MET-CLPDIG
SPLP EXTRACTION FOR METALS AND SEMIVOLATILES	MET-SPLP
METALS AND SEMIVOLATILES TCLP EXTRACTION (METHOD 1311)	MET-TCLP
ZERO HEADSPACE EXTRACTION (EPA METHOD 1311)	MET-TZHE
METALS GLASSWARE CLEANING	MET-GC
VOLATILE SCREENING	VOC-SCREEN
PREPARATION AND MONITORING PROCEDURES FOR VOLATILE STORAGE BLANKS	VOC-BLK
MIXED GASES BY RSK-175M	VOC-8015/RSK175
CLOSED SYSTEM PURGE AND TRAP	VOC-5035
ANALYSIS OF VOLATILE ORGANIC COMPOUNDS BY GC/MS IN DRINKING WATER	VOC-524
VOLATILE ORGANIC COMPOUNDS BY GC/MS	VOC-8260
DETERMINATION OF POLYAROMATIC HYDROCARBONS BY HPLC	HPLC-8310
DETERMINATION OF CARBONYL COMPOUNDS BY HPLC	HPLC-8315A
ANALYSIS OF WATER SAMPLES FOR METABOLIC ACIDS	HPLC-METACIDS
DETERMINATION OF HYDROQUINONE BY HPLC/ECD FOR "Client"	HPLC-Hydroquinone
SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION	EXT-3510C
AUTOMATED SOXHLET EXTRACTION	EXT-3541
MICROWAVE EXTRACTION OF SOILS, SEDIMENTS, AND SOLIDS FOR ORGANIC ANALYTES	EXT-3546
WASTE DILUTION	EXT-3580A
SHAKE EXTRACTION FOR IMMISCIBLE NON-AQUEOUS LIQUID SAMPLES	EXT-NAQ
ADDITION OF SPIKES AND SURROGATES	EXT-SAS
PREPARATION OF ANHYDROUS SODIUM SULFATE	EXT-SUL
CONCENTRATION OF EXTRACTS	EXT-CONC
FLORISIL CLEANUP	EXT-3620B
SULFUR CLEANUP	EXT-3660B
SULFURIC ACID CLEANUP OF PCB EXTRACTS	EXT-3665A
ORGANIC EXTRACTIONS GLASSWARE CLEANING	EXT-GC
DIAZOMETHANE PREPARATION	EXT-DIAZ
GASEOUS ORGANIC COMPOUNDS ON MEDIA BY GC/FID	SOC-18
PETROLEUM PRODUCTS IN WATER (HYDROCARBON SCAN)-NYSDOH Mtd	SOC-310-13
1,4-DIOXANE IN DRINKING WATER BY SPE AND GC/MS SIM	SOC-522
1,4-DIOXANE IN WATER BY SPE AND GC/MS SIM OPT IDMS	SOC-14-DIOXANE
NONHALOGENATED ORGANICS BY GC/FID	SOC-8015
PETROLEUM HYDROCARBONS AS DIESEL IN WATERS, SOILS, AND WASTE	SOC-8015-DRO
ORGANOCHLORINE PESTICIDES IN WATERS AND SOILS	SOC-8081A
PCBs IN WATERS and SOILS	SOC-8082
CHLORINATED HERBICIDES	SOC-8151A
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	SOC-8270

APPENDIX H – Data Qualifiers

ALS Environmental

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Accreditations[1]

NELAP States
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Virginia #460167

Non-NELAP States
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island LAO00333

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

APPENDIX I – Master List of Controlled Documents

ALS Environmental

CONTROLLED FORMS

Click here to access specific sections of the list:

Master List:

	Form	Revision	Date
QA			
	Archive Access Log	0	1/13/21
	Balance Log Template	5	7/25/19
	Distribution Control Form	2	10/24/19
	Induction Training record	0	4/9/19
	New Employee QA and Ethics Orientation Training	2021	6/8/21
	Project Communication Form	0	11/12/12
	SOP Attestation Form	1	11/27/12
	SOP Change Form	1	1/13/21
	Vendor Evaluation Form	1	12/15/2020
	Volume Verification Log	0	2/6/17
	Log of LIMS Test Request – Change Control		
	Maintenance Log – Fridge/Freezer	0	12/23/19
	Gases Receipt and Use Log	0	1/6/2020
Data Review Checklists			
	EXT Extractables (GC)	1	12/1/11
	EXT_PCBs	3	3/27/12

	EXT Pesticides	1	3/27/12
	EXT HPLC	1	11/29/11
	EXT SVOA	5	4/2/2020
	MET ICP/CVAA/1631	9	5/24/21
	MET ICPMS	8	5/24/21
	MET MARRS	0	1/7/13
	SMO pH/Conductivity	3	1/5/18
	SMO Sett/Color/Turbidity	0	2/20/12
	VOC GC	1	12/1/11
	VOC GCMS	4	7/5/22
	VOC GCMS sub-checklist for rushes	1	1/23/13
	WC	4	11/29/11
	Ion Chromatography	1	11/11/21
Initial Calibration Checklists			
	ICAL checklists - All Departments	6	2/15/19
	ICAL checklist – Pest-PCB	7-PEST-PCB	3/20/2020
Training			
	Training Sign-In	1	8/3/17
	Critical Job Function Authorization Statement	3	1/23/18
	DOC Cover Page	2	3/29/19
Training Plan Forms (Initial)			
	Filtering	1	1/2/13
	Generic – use only if none other is applicable	1	1/2/13
	Glassware Cleaning	1	1/2/13
	Thermometer and Balance	1	1/2/13
	Pipette Use	1	1/2/13
	pH Meter	1	1/2/13
	SMO GEN	1	1/4/13
	SMO BPS	1	1/4/13
	Extractables - 3510	2	8/15/18
	Extractables – 3541	2	8/15/18
	Extractables – 3546	0	2/2/22
	HPLC	1	1/2/13
	Metals – TCLP	0	10/7/13
	Metals –ZHE TCLP	0	10/7/13
	Metals – SPLP	0	10/7/13
	Metals –ZHE SPLP	0	10/7/13
	Metals – Digestion	1	1/2/13
	Metals- Instrument	1	1/2/13
	VOC- GC	1	1/2/13
	VOC- MS	1	1/2/13
	SVOA GC ECD	1	4/26/21
	SVOA GC	1	1/2/13
	SVOA MS	1	1/2/13
	WC BOD	2	9/28/18
	WC Extraction	1	2/28/2020
	WC Distillation/Digestion	1	1/2/13
	WC Ion Chromatography	1	1/4/13
	WC Lachat	1	1/4/13
	WC Solids	1	1/4/13
	WC Manual Spec	1	1/4/13
	WC Titration	1	1/4/13
	WC TOC	1	1/4/13
DOC 4 rep Spreadsheets	reserved		

SMO			
	Bottle Kit Preservations	0	4/9/21
	Cooler Receipt and Preservation Form	19	3/2/21
	Cr6+ Preservation Log	4	10/22/21
	Containers, Preservation, and Holding Time	33	6/16/2020
	Foreign Soil Log	1	12/14/16
	Internal Tracking Form for Short Holding Time Samples	1	10/29/12
	Sample Preparation, Compositing, and Subsampling	0	1/17/13
	Sampling Instructions and Preservative Information	1	10/18/12
	Sampling 1631 Instructions	1	9/18/13
	Sampling 522 1,4-Dioxane Instructions	1	12/17/21
	Sampling 524.2 Instructions	1	7/16/18
	Sampling Instructions Coliform	3	7/20/15
	Sampling Instructions 5035 Terracore	0	6/3/15
	Short Holding Times Job Aid	4	7/21/22
	DI Conductivity Log	0	11/12/19
WC logs			
	IC Repeat Log	1	6/13/18
	IC Standards Log	02042016	2/4/16
	Pipettor Calibration Log	4	12/23/19
	Pipettor Calibration Calculator	1	4/1/2020
	Solids Oven In/Out Log	2	10/7/19
	6 mL Cyanide Tube Volume Verification	0	1/9/17
	6 mL Cyanide Tube – Excel for Calcs	0	1/9/17
	pH Meter Calibration	0	2/9/17
WC Flowcharts and Postings			
	Alcoa Common Dilutions	0	11/12/18
	Autoclave Operation	1	1/17/13
	BOD Evaluation Flowchart	0	8/5/21
	Colilert Flowchart	6	2/16/2021
	Colilert Package Instructions	0	3/7/18
	Hexavalent Chromium Soil Digest Flowchart	1	2/7/13
	Oil and Grease Flowchart	1	3/15/21
	Phenol Print Windows	0	10/9/18
	Quanticult Instructions	0	3/7/18
	Scan Instructions for COAs	0	1/6/20
	Solids – TDS Volume Determination	0	3/7/13
	TOC-LK Linear Ranges	1	9/2/14
	TMAH Dilutions	0	11/7/17
	WC Spiking Levels	8/5/2020	8/5/2020
WC Standards Prep			//
	Ammonia 8500	1	1/12/16
	Cr6+ Waters	0	4/12/13
	Nitrite	2	1/12/16
	TOTN	3	8/4/17
	TKN	3	12/20/19
	OPO4	1	10/17/17
	TPO4	2	1/24/18
	TPO4 – low level	2	1/23/18
WC Forms			
	Sample Dilutions	2	9/18/15
	BOD Dilution and Screening Sheet	2	1/19/17

WC/Micro Benchsheets	All linked to I:\Acquadata\Wetchem		
	%Ash	1	12/5/13
	%Water	2	9/4/14
	Alkalinity –Low Level	3	2/1/16
	Alkalinity –Regular Level	4	12/9/15
	Alkalinity – High Level	4	12/9/15
	BOD	12	11/15/18
	Chlorine Demand	1	12/5/13
	Chlorophyll a Fluorometric	3	5/23/19
	COD –LL	8	2/17/22
	COD-HL	9	2/17/22
	COD Soil	1	12/6/13
	Colilert	0	8/9/21
	Color	1	4/13/21
	Conductivity	5	3/18/19
	Cr6 Soil Digest	4	8/24/18
	Cr6 pH Adjust	1	1/17/2020
	Cyanide – Residual	1	12/6/13
	Cyanide-Micro	3	11/8/17
	Density	1	12/6/13
	Dissolved Oxygen	1	1/2/15
	Ethylene Glycol	1	5/1/13
	Ferrous Iron	3	10/17/18
	Hardness	4	2/1/16
	Hydrogen Peroxide in Air	2	10/13/15
	Hydrogen Peroxide in Water	0	7/23/15
	Method 8	2	4/15/14
	Oil and Grease/ TPH 1664	4	3/15/21
	Paint Filter – Free Liquid	1	3/16/15
	pH	3	1/4/18
	REDOX	4	12/5/19
	Residual Chlorine	2	4/7/2020
	Solids	8	9/15/21
	Solids-%Volatile	2	3/16/16
	Solids-Volatile Total	4	10/26/16
	Solids-Volatile Dissolved	4	10/26/16
	Solids-Volatile Suspended	4	10/26/16
	Solids-Fixed Dissolved	4	10/26/16
	Solids - Settleable	1	5/19/21
	Specific Gravity – Cup	1	12/6/13
	Sulfide 4500	3	2/1/16
	Sulfide 9030/9034	5	12/28/21
	Sulfite	1	12/9/13
	TKN Digest	5	11/3/17
	TPO4 Digest	4	12/19/19
	Turbidity	1	10/30/2020
	UV 254	3	1/4/21
Metals			
	Flowchart 200.2	1	10/18/17
	Flowchart 3010	0	1/16/15
	Flowchart 3050	1	12/2/2020
	ICP True Values	0	1/13/2020
	M33 Values	0	12/1/21
	Relative Error Instructions	0	2/16/22
Metals MDL Postings			
	Mercury	2021 r0	5/17/21
	ICPMS water	2021 r0	5/17/21
	ICPMS soil	2021 r0	5/17/21
	200.7	2021 r0	5/17/21
	6010 water	2021 r0	5/17/21
	6010 soil	2021 r0	5/17/21
Metals			

Benchsheets			
	LLHg Calibration Blank Template	0	6/11/21
	LLHg Dilution Sheet	0	11/18/21
	Soil Weight Sheet	1	10/11/19
Metals Logbooks			
	MDL Standards Log	07152019	7/15/19
	LOQ Prep Log	01142015	01/14/15
	ICP Standards Log	003082022	03/08/2022
	ODD Metals Standard Log	2	6/13/13
	ICP 6 Runlog	2	11/23/2020
	Agilent ICPMS Runlog	0	12/7/17
	Mercury Run Log	4	2/12/2020
	LL Mercury M8000 Runlog	1	12/30/2020
	Mercury Standards Log	2	2/24/16
	LL Mercury Standards Log	1	11/18/21
	MS Standards Log	03082022	3/8/22
	Mercury Reagents and Acid Lot Tests	0	10/3/14
TCLP			
	TCLP MB Vessel Rotation	0	5/18/15
	TCLP Benchsheet	8	4/23/2020
	ZHE TCLP Benchsheet	6	3/6/18
	SPLP Benchsheet	4	3/13/18
	TCLP Job Aid	0	8/9/21
Extractables			
	2 mL Vial Calibration Log	1	10/22/15
	8151 Extraction of Soils Flowchart	1	3/30/2020
	8151 Extraction of Waters Flowchart	1	3/26/2020
	Concentration Tracking Log	0	12/2/2020
	Confirmation Policy Flowchart	2	10/30/17
	Concentration Table	3	11/17/2021
	Extractables Prep Benchsheet	0	4/24/2020
	Pipettor Calibration Log	4	12/23/19
	Glassware Cleaning Flowchart	1	12/26/12
	Kiln Operation Instructions	1	12/19/12
	Methods Summary Spreadsheet (Spikes)	6	9/1/21
	Microwave Vessel Loading Posting	0	11/16/2020
	pH Meter Calibration Log	1	1/4/17
	Maintenance Log - Org	0	3/4/16
	Maintenance Log - LC	0	2/7/17
	RRT Template	0	3/18/21
	Runlog HPLC	2	3/23/18
	Runlog GC Ext	2	4/27/17
	Sodium Sulfate Prep Log	0	12/5/17
VOAs			
	Runlog MSVOA	5	1/11/22
	Runlog GCVOA	1	12/5/12
	5035 Prep Log		
	RRT Template VOA 10	0	5/3/21
	RRT Template VOA 12	0	5/3/21
	RRT Template VOA 14	0	5/3/21
	RRT Template VOA 14S	0	5/3/21
VOA-GC Calibration Templates			
	RSK	2	10/10/18
Project Manager			
	Qualifier Page - Routine	6	9/30/21
	Qualifier Page –Routine for Massachusetts	3	5/13/13
	Qualifier Page – No NELAC	0	6/17/13

	Qualifier Page - DOD	0	9/30/21
	Inorganic Preparation Methods	2	12/20/19
	Cr6+ EHpH Graphs	1	4/17/15
	Langlier, Ryznar, and Saturation Index	2	12/20/21
	Un-Ionized Sulfide Calculation	1	8/11/17
	Calculation Tests		6/28/22
	Terms and Conditions		
	Raw Data Order for scanning	0	3/7/18
	Drinking Water Certs and Limits	2021 r0	5/17/21
Instrument Manuals			
	Thermometer 398 Instructions Autoclave	Autoclave	
	Thermometer 412 Sper Sci 800007	Ovens	
	Excursion-Trac Datalogging Thermometer		
	R-Oven-09 Operating Manual		
	R-Incubator-03 Operating Manual		
	Coliform Water Bath Operating Manual		
	SympHony pH Meters B10P, B30PCI		
	Symphony pH Meter SB80PC		
	SympHony pH Probes		
	Analytical Balances Mettler AE200		
	Analytical Balances Mettler AE240		
	Sartorius LA5200D Manual		
	Skalar San++		
	REDOX-02 – Hanna Instruction Manual		
	Trilogy User Manual	chlorophyll	
	Buchi Operation Manual for I-300 Pro	Concentration	
	Buchi Operation Manual for R-300 Rotavapor		
	Buchi Operation Manual for V-300 Vacuum Pump		
	Buchi Operation Manual for F-314 chiller		
		Location	
	Perkin Elmer FIMS Flow Injection Mercury System Hardware Guide April 2007	Metals Shelf	
	Perkin Elmer FIMS Flow Injection Mercury Setting Up and Performing Analyses July 2003	Metals Shelf	
	Agilent 5100 ICP-OES Users Guide 2014	Metals Shelf	
	Agilent SPS 4 Autosampler User's Guide G8410-90000, Rev. A, May 2015	Metals Shelf	
	Perkin Elmer Concepts, Instrumentation, and techniques in Inductively Coupled Plasma Atomic Emission Spectrometry, Boss and Fredeen, 1989	Metals Shelf	
	Perkin Elmer Concepts, Instrumentation, and techniques in Atomic Absorption Spectrophotometry, Beaty and Kerber 1993	Metals Shelf	
	Perkin Elmer Elan 9000 Hardware Guide 1002729A, 2001	Metals Shelf	
	Perkin Elmer ELAN Version 2.4 Software Guide 1002821A, 1999-2001	Metals Shelf	

	Perkin Elmer WinLab32 Data Management Software Guide 2000	Metals Shelf	
	Perkin Elmer AS-93plus Autosampler for Atomic Spectrometry User's Guide 0993-5278 Release 3 July 2000	Metals Shelf	
	Perkin Elmer S10 Autosampler for Atomic Spectrometry User's Guide 0993-6788 Release B December 2007	Metals Shelf	
	Perkin Elmer WinLab32 Instrument Control Software, Software Guide, 0993-6335 Release B January 2000	Metals Shelf	
	PolyScience Refrigerated Recirculating Chillers Operator's Manual 110-811 03.13.12	Metals Shelf	
	Leeman Labs HYDRA AF Automated Mercury Analyzer Manual 150-00214 Rev 05	Metals Shelf	
	Polyscience Refrigerated Recirculating Chillers Operator's Manual for Model N0772036 110-462 8/24/09	Metals Shelf	
	Polyscience Refrigerated Recirculating Chillers Operator's Manual for Model N0772026 110-240 02/05	Metals Shelf	
	Polyscience Refrigerated Recirculating Chillers Operator's Manual for Model N0772046 110-811 02/25/15	Metals Shelf	
	Labindustries REPIPET II Dispensers. Barnstead Internations. Assembly, Operation and Maintenance Instructions, Parts List and Warranty. LT832X1 6/17/02	Metals Shelf	
	Barnstead/Thermolyne Type RC2200 Remote Control Hot Plate Operation Manual and Parts List Serier 410/411 LT410X1 6/18/97	Metals Shelf	
	Agilent Tech 2015 ICP Expert Help, Version 1.0.1.0, April 2015	In Instrument Software	
	Agilent 5973 MSD	Part of Software	**Voa or Ext. Shelf Organic Managers Office**
	Agilent 5975 MSD	Part of Software	**Voa or Ext. Shelf Organic Managers Office**
	Agilent 6890 GC	Part of Software	**Voa or Ext. Shelf Organic Managers Office**
	Agilent 7890 GC	Part of Software	**Voa Shelf Organic Managers Office**
	Atomx Auto Sampler	Part of Software	
	Archon Autosampler	Voa Shelf	
	Encon Concentrator	Voa Shelf	
	Tekmar 3400 GC	Voa Shelf	
	Agilent HPLC	Part of Software	
	Shimadzu HPLC	Ext. Shelf	
	Gerhardt Soxtherm	Ext. Shelf	
	Horizon SPE	Ext. Shelf	
	LabConco Concentrator	Ext. Shelf	
	Metrohm IC Net 2.3 SR2 6.6034.033 8.102.0013 Software Manual 04.2005/chs	Wetchem Shelf	
	Metrohm Autodatabase 1.0 8.110.8213 25.01.2000/do	Wetchem Shelf	
	Metrohm IC Cap 2.2 Administrator Manual 8.102.1013 04.2005/chs	Wetchem Shelf	
	Metrohm Illustrated Spare Parts Guide Jan	Wetchem Shelf	

	1, 2011		
	Metrohm Environmental Application 9702.C2.1001 2011	Wetchem Shelf	
	Metrohm 838 Advanced Sample Processor Instructions for Use 8.838.1003 09.2004/dm	Wetchem Shelf	
	Metrohm Using "IC Net 2.3"Software to comply with FDA 21CFRPart11 compliance white paper 8.110.8293 11.2003/pkl	Wetchem Shelf	
	Metrohm IC Cap 2.2 User Manual 8.102.1119 04.2005/chs	Wetchem Shelf	
	Metrohm 838 Addvanced Sample Processor Installation Instructions 8.838.1303 07.2004/dm	Wetchem Shelf	
	OI Analytical TOC Analyzer Operator's Manual WinTOC Cersion 5.01 Control Software for the Model 1010 TOC Analyzer	Wetchem Shelf	
	OI Analytical Model 1051 Vial Autosampler Operator's Manual Rev.4 July 2000 Part#278549	Wetchem Shelf	
	OI Analytical Model 1010 Instrument Validation Package SN02112603 Rev. 3.1 1998-2002	Wetchem Shelf	
	Dionex DRS 600 Suppressor Quick Start Doc No. 065750-01 Jan2018		
	Dionex PeakNet Software User's Guide 034914 rev 8 May 1998	Wetchem Shelf	
	Dionex ED40 Electrochemical Detector Operator's Manual 034855 Rev. 03 March 1995	Wetchem Shelf	
	Dionex DX-120 Ion Chromatograph Operator's Manual 031183 rev. 03 Sept 1998	Wetchem Shelf	
	Dionex AS40 Automated Sampler Operator's Manual 034970 Rev. 02 June 1994	Wetchem Shelf	
	Dionex Installing the Dionex PeakNet System 034941 Rev. 10 April 1999	Wetchem Shelf	
	Dionex GP40 Gradient Pump Operator's Manual 034856 Rev. 03 May 1995	Wetchem Shelf	
	Dionex Introduction to the Dionex DX500 Chromatography Systems 034892 Rev 02 Oct 1996	Wetchem Shelf	
	Dionex LC20 Chromatography Enclosure Operator's Manual 034859 Release 02 Sept 1993	Wetchem Shelf	
	Dionex ICS Series AS-AP Autosampler Operation Manual, PN 065361-05, 065470-02	Wetchem Shelf	
	AI Scientific AIM 600 Users Manual Rev. F September 2012 DG-U-UM001	Wetchem Shelf	
	Thermo Scientific Thermolyne Furnace Benchtop Muffle Type 47900and 48000 Installation and Operation Manual 2010	Wetchem Shelf	
	Environmental Express Hotblock Digestion System Operation and Instruction Manual May 2011	Wetchem Shelf	
	Lachat QuikChem 8500 Series 2 FIA Automated Ion Analyzer User Manual June 2008, Edition 4	Wetchem Shelf	
	Lachat Quik Chem 8500 Series Automated Ion Analyzers Training Manual, May 2008, Ed. 4	Wetchem Shelf	
	Operation Manual for Technicon Proportioning Pumps II and III, Technical Publication TAO-0159-00 Sept 1970	Wetchem Shelf	
	Technicon Automating Manual Methods using Technicon AutoAnalyzer II System Techniques, Manual TN1-0170-01, 1972 HH/71	Wetchem Shelf	
	Technicon Troubleshooting Guide for the Technicaon Autoanalyzer II System,	Wetchem Shelf	

	Technical Publication No TD2-0170-00, April 1972		
	LabLine Magnistirs Operation Manual, Manual NO. 057-539-00 Rev. 0, ECN 18222	Wetchem Shelf	
	Hach COD Reactor Model 45600 Instrument Manual 45600-18, 2000.	Wetchem Shelf	
	YSI ProOBOD IDS ProOBOD User manual Document #626471, Rev C Drawing #A626471 April 2013	Wetchem Shelf	
	YSI ProODO User Manual Item #626279 Rev C Drawing #A626279 March 2009	Wetchem Shelf	
	YSI ProODO Handheld Quick-Start Guide, Item #626280 Drawing # A626280 Rev B, December 2008.	Wetchem Shelf	
	Metrohm 848 Titrino Plus Manual 8.848.8008EN/2015-01-19	Wetchem Shelf	
	Metrohm 806 Exchange Unit Manual 8.806.8002ML 01/2011	Wetchem Shelf	
	Lachat QuikChem 8000 Automated Ion Analyzer Continuum Series, Hardware Installation and System Operation Manual, April 1998	Wetchem Shelf	
	Parr 6300 Oxygen Bomb Calorimeter Operating Instructions Manual, 10/2003	Wetchem Shelf	

ACCREDITED IN ACCORDANCE WITH nelac

APPENDIX J – Laboratory Accreditations

The current accreditations with scope and expiration dates are available online at
https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

or by request.

ALS/Rochester Certifications/Accreditations/Contracts

Federal, National, and International Programs

- NELAP/TNI Accreditation, since January 2001.
  Primary Accreditation with New York (see below).
  Secondary Accreditation with New Hampshire, Pennsylvania, and Virginia (see below).

- United States Department of Defense Environmental Laboratory Accreditation Program (DOD-ELAP) since January 2010. Currently accredited to QSM 5.4. Accredited through Perry Johnson Laboratory Accreditation. Accreditation #65817. Expires 6/30/2024.

- ISO/IEC 17025:2017. Accredited through Perry Johnson Laboratory Accreditation. Accreditation #65817. Expires 6/30/2024.

State and Local Programs

- State of Connecticut, Department of Health Services, Approved Public Health Laboratory.
  Certified Laboratory for Potable Water, Waste Water, Solid Waste and Soil.
  Examination for Inorganic Chemicals and Organic Chemicals. Registration No. PH-0556.
  Exp. 6/30/23.

- State of Delaware, Department of Natural Resources and Environmental Control. Approved for Delaware Hazardous Substance Cleanup Act.

- State of Florida, Department of Health, Bureau of Public Health Laboratories. Non-Potable Water, Solid Waste. Lab E87674. Expires 6/30/2023.

- State of Maine, Department of Health and Human Services.
  Drinking Water, Wastewater, and Solid Waste. Certification No.NY0032. Expires 11/12/2022.

- The Commonwealth of Massachusetts, Department of Environmental Protection.
  Non-Potable Water. Certification No. M-NY032. Exp. 06/30/2023.

- State of New York, Department of Health, Environmental Laboratory Approval Program.
  Potable Water, Air, Non-Potable Water, and Solid and Hazardous Waste.
  Certification No. 10145. Exp. 04/01/2023.

- State of New Hampshire, Department of Environmental Services
  Non-Potable Water, Drinking Water, Solid Waste. Certification No. 294102. Exp. 10/14/2022.

- State of North Carolina, Department of the Environment and Natural Resources, Division of Water Quality
  Wastewater, Ground water. Certificate 676. Expires 12/31/2022.

- State of North Carolina, Department of Health and Human Services
  Drinking Water, 1,4-Dioxane only. Lab 36701. Expires 7/31/2022.

- Pennsylvania Department of Environmental Protection.
  Non-Potable Water, Solid and Chemical Materials. Lab ID No. 68-00786. Expires 6/30/2023.

- State of Rhode Island, Department of Health
  Approved for Surface Water, WasteWater, and Sewage. LAO00333. Exp. 12/30/2022.

- Virginia Department of General Services Division of Consolidated Laboratory Services.
  Non-potable Water and Solid and Chemical Materials, Metals Category only. ID# 460167. Exp. 6/14/2023.

ATTACHMENT 2

Table 1

(Analytical Laboratory Testing Program)

Table 1

Analytical Laboratory Testing Program

Quality Assurance Project Plan
225-405 Mt. Hope Avenue
Rochester, New York
(NYSDEC Site ID C828125)

Task	Sample Matrix	Parameter	Field Samples	Trip Blanks	MS/MSD	Field Blanks	Analytical Methods	Reporting Levels	Corresponding SCGs
Long-Term Groundwater Monitoring	Water	TCL VOCs	Bi-Annually (every 2 years) until instructed otherwise by the NYSDEC, up to 5 samples/round	1/round	1/round	1/round	USEPA Method 8260	ASP-B	TOGS 1.1.1 Groundwater Standards and Guidance Values

APPENDIX G
SITE MANAGEMENT FORMS

ANNUAL SITE-WIDE INSPECTION FORM
ERIE HARBOR SITE
205-405 MT. HOPE AVENUE
ROCHESTER, NEW YORK
NYSDEC SITE NUMBER: C828125

Date of Inspection: ______________________________

Inspected By: ______________________________

____

(Include: name, company, and position of person(s) conducting inspection)

Observed Use of Site: ______________________________

SSDS in Building #3:

Integrity of Observed Aboveground Components: ______________________________

____

Results of testing alarm by temporary disconnection of tubing: ______________

Vacuum reading at temporary disconnected alarm tubing: ______________

Vacuum reading at #602 SSDS Monitoring Point: ______________

Vacuum reading at #604 SSDS Monitoring Point: ______________

Vacuum reading at #607 SSDS Monitoring Point: ______________

Vacuum reading at #610 SSDS Monitoring Point: ______________

Discuss any corrective actions needed or taken: ______________

____

SSDS in Building #4:

Integrity of Observed Aboveground Components: ______________________________

____

Results of testing alarm by temporary disconnection of tubing: ______________

Vacuum reading at temporary disconnected alarm tubing: ______________

Vacuum reading at #502 SSDS Monitoring Point: ______________

Vacuum reading at #505 SSDS Monitoring Point: ______________

Discuss any corrective actions needed or taken: ______________

____

Monitoring Wells:

Evidence of damage or blockage of monitoring wells: ☐ Yes ☐ No

Describe damage or blockage if observed: ____________________________________

____

____

____

____

Discuss any corrective actions needed or taken: ______________________________

____

____

____

Additional Comments: ____

____

____

____

Signatures: ____

____

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e) and 6NYCRR Part 360.13. Use of this form is not a substitute for reading the applicable regulations and Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that passes a size 100 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

____
Signature

____
Date

____
Print Name

____
Firm

Summary of Green Remediation Metrics for Site Management

Site Name: ________________________________ Site Code: ______________________
Address: __________________________________ City: __________________________
State: _____________ Zip Code: _________ County: ________________________

Initial Report Period (Start Date of period covered by the Initial Report submittal)
Start Date: ____________________

Current Reporting Period
Reporting Period From: ______________________ To: ___________________________

Contact Information
Preparer's Name: ___________________________ Phone No.: ____________________
Preparer's Affiliation: ___________________________________

I. Energy Usage: Quantify the amount of energy used directly on-site and the portion of that derived from renewable energy sources.

	Current Reporting Period	**Total to Date**
Fuel Type 1 (e.g. natural gas (cf))		
Fuel Type 2 (e.g. fuel oil, propane (gals))		
Electricity (kWh)		
Of that Electric usage, provide quantity:		
Derived from renewable sources (e.g. solar, wind)		
Other energy sources (e.g. geothermal, solar thermal (Btu))		

Provide a description of all energy usage reduction programs for the site in the space provided on Page 3.

II. Solid Waste Generation: Quantify the management of solid waste generated on-site.

	Current Reporting Period (tons)	**Total to Date (tons)**
Total waste generated on-site		
OM&M generated waste		
Of that total amount, provide quantity:		
Transported off-site to landfills		
Transported off-site to other disposal facilities		
Transported off-site for recycling/reuse		
Reused on-site		

Provide a description of any implemented waste reduction programs for the site in the space provided on Page 3.

III. Transportation/Shipping: Quantify the distances travelled for delivery of supplies, shipping of laboratory samples, and the removal of waste.

	Current Reporting Period (miles)	**Total to Date (miles)**
Standby Engineer/Contractor		
Laboratory Courier/Delivery Service		
Waste Removal/Hauling		

Provide a description of all mileage reduction programs for the site in the space provided on Page 3. Include specifically any local vendor/services utilized that are within 50 miles of the site.

IV. Water Usage: Quantify the volume of water used on-site from various sources.

	Current Reporting Period (gallons)	**Total to Date (gallons)**
Total quantity of water used on-site		
Of that total amount, provide quantity:		
Public potable water supply usage		
Surface water usage		
On-site groundwater usage		
Collected or diverted storm water usage		

Provide a description of any implemented water consumption reduction programs for the site in the space provided on Page 3.

V. Land Use and Ecosystems: Quantify the amount of land and/or ecosystems disturbed and the area of land and/or ecosystems restored to a pre-development condition (i.e. Green Infrastructure).

	Current Reporting Period (acres)	**Total to Date (acres)**
Land disturbed		
Land restored		

Provide a description of any implemented land restoration/green infrastructure programs for the site in the space provided on Page 3.

Description of green remediation programs reported above (Attach additional sheets if needed)
Energy Usage:
Waste Generation:
Transportation/Shipping:
Water usage:
Land Use and Ecosystems:
Other:

CONTRACTOR CERTIFICATION
I, ____________________________ (**Name**) do hereby certify that I am ______________________ (**Title**) of __________________ (**Contractor Name**), which is responsible for the work documented on this form. According to my knowledge and belief, all of the information provided in this form is accurate and the site management program complies with the DER-10, DER-31, and CP-49 policies. ____ **Date** **Contractor**