HAZ-O-WASTE (NORTHEAST ENVIRONMENTAL SERVICES)

MADISON COUNTY

TOWN OF LENOX, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: 727003

Prepared for:

New York State Department of Environmental Conservation

Division of Environmental Remediation

625 Broadway, Albany, New York 12233

Contract/Work Assignment No. D009812-6.2

Prepared by:

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

AUGUST 2024

SITE MANAGEMENT PLAN
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MADISON COUNTY, TOWN OF LENOX, NEW YORK
NYSDEC SITE NO. 727003

TABLE OF CONTENTS

List of Tables

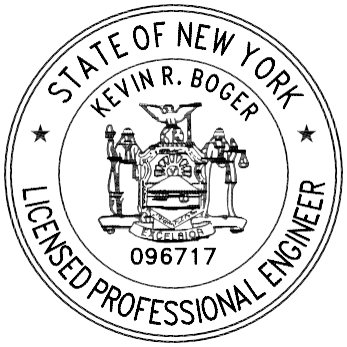
List of Figures

List of Appendices

CERTIFICATION

I, Kevin Boger, P.E., certify that I am currently a New York State Registered Professional Engineer as 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).

096717	8/26/24	
NYS Professional Engineer #	Date	Signature



List of Acronyms

BTEX	Benzene, Toluene, Ethylbenze, and Xylenes
COC	Certificate of Completion
CP	Commissioner Policy
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
EWP	Excavation Work Plan
HASP	Health and Safety Plan
IC	Institutional Control
NAVD 88	North American Vertical Datum of 1988
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
PRR	Periodic Review Report
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
ROD	Record of Decision
RSO	Remedial System Optimization
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SSDS	Sub Slab Depressurization System
TCL	Target Compound List
TICS	Tentatively Identified Compounds
TSOW	Technical Scope of Work
VOC	Volatile Organic Compounds

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:	**NYSDEC Site No. 727003,** **Haz-O-Waste (Northeastern Environmental Services)** **4123 Canal Rd., Town of Lenox, NY 13032**
Institutional Controls:	1. The Site is comprised of four parcels. Madison County SBL Nos. 36.-1-72.2, 36.-1-73.2, 36.-1-72.1 and 36.-1-72.3.
	2. The property is zoned for commercial and industrial uses;
	3. Property use is subject to an Environmental Easement and this Site Management Plan (SMP);
	4. All Engineering Controls (ECs) must be operated and maintained as specified in this SMP;
	5. All ECs must be inspected at a frequency and in a manner as defined in this SMP;
	6. The remedial party or property owner shall be required to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
	7. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) 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 New York State Department of Environmental Conservation (NYSDEC);
	8. Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;

Site Identification:	**NYSDEC Site No. 727003,** **Haz-O-Waste (Northeastern Environmental Services)** **4123 Canal Rd., Town of Lenox, NY 13032**
	9. Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
	10. All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
	11. Use of the property for farming, raising livestock, vegetable gardens, production of items for human consumption, active recreation, and residential housing is prohibited;
	12. Access to the property 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; and
	13. The potential for vapor intrusion must be evaluated for any buildings developed at the property and any potential impacts that are identified must be monitored or mitigated.
Engineering Controls:	Property access restriction via access gate with appropriate signage.

Monitoring Task:	**Frequency:**
1. Site-wide inspection	Annually
2. Monitoring of groundwater to assess the performance and effectiveness of the remedy	Quarterly
3. Site access restriction	As Needed
Reporting:	**Frequency:**
1. Inspection and Groundwater Sampling Report	90 Days After Completion of Groundwater Sampling

Site Identification:	NYSDEC Site No. 727003, Haz-O-Waste (Northeastern Environmental Services) 4123 Canal Rd., Town of Lenox, NY 13032
2. Periodic Review Report, including groundwater monitoring data	Annually

Notes:

(1) Inspections will also be performed following severe weather events and/or emergencies that may affect the property or Engineering Controls.

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 Haz-O-Waste Site located in the Town of Lenox, New York (the "Site"). See **Figure 1**. The Site is currently listed as Class 2 in the New York State Registry of Inactive Hazardous Waste Disposal Sites, Site No. 727003, which is administered by New York State Department of Environmental Conservation (NYSDEC or Department).

Following revocation of the on-site facility's Part 373 hazardous waste management facility permit in January 2002, the NYSDEC began initial investigations of the Site. A figure showing the Site layout and boundaries is provided in **Figure 2**. 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, residual contamination was left at the 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 running with the land, and recorded with the Madison County Clerk, requires compliance with this SMP and all ICs and ECs 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, in consultation with the New York State Department of Health (DOH). 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; and

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the Amended Record of Decision (ROD) issued on March 2021; Site #727003) 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. Site reports can be accessed via NYSDEC InfoLocator using the following link – https://extapps.dec.ny.gov/data/DecDocs/727003/.

This SMP was prepared by TRC Engineers, Inc. (TRC), on behalf of NYSDEC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), issued May 2010 and last updated March 2019, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and ECs that are required by the Environmental Easement for the Site.

1.2 Revisions and Alterations

Revisions and alterations to this SMP will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, post-remedial removal of contaminated sediment or soil, other significant change(s) to the Site conditions, or change(s) in site use. 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 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:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Environmental Easement, 6 NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with a remedial program.
- 15-day advance notice of any proposed ground-intrusive activity 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.
- Notice within 48 hours of any damage or defect to the 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.
- Notice within 48 hours of any non-routine maintenance activities.
- 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.

- 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:

1. 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 Environmental Easement, and all approved work plans and reports, including this SMP.

2. 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.

The table below 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**.

Notifications

Name	**Contact Information**	**Required Notifications**
NYSDEC Project Manager Nakya Stewart	518-402-9686 nakya.stewart@dec.ny.gov	All Notifications
NYSDEC, Chief, Remedial Section A Benjamin Rung, P.E.	518-402-9826 benjamin.rung@dec.ny.gov	All Notifications

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

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The Site is located at 4123 Canal Road, in the Town of Lenox, Madison County, New York and is identified as Section 36., Block 1 and Lots 72.1, 72.2, 72.3, and 73.2. The Site is situated on an approximately 11.98-acre area bounded by agriculture land to the north, Canal Road and the old Erie Canal to the south, agriculture land to the east, and agriculture land to the west (see **Figure 2**).

The boundaries of the Site are more fully described in the Environmental Easement **Appendix A**. The owner(s) of the Site parcel(s) at the time of issuance of this SMP is/are Madison County.

2.2 Physical Setting

2.2.1 Land Use

The Site was originally developed in 1976 and consisted of a single-story concrete block building. A larger, single-story steel structure was constructed around the existing block building at a later date. Both buildings were constructed on a single soil-supported concrete slab. The original building and addition were demolished in 2014. The building was located on the southeastern portion of the Site.

The Site currently consists of a paved asphalt surface surrounded by vegetated areas. The area of the soil removal is covered by one foot of clean fill with the upper six inches comprised of compacted crusher run. The Site is zoned for commercial and industrial use and is currently vacant.

The properties adjoining the Site and in the surrounding area are primarily agricultural. The nearest residential areas are approximately 0.5 miles to the east or west

on Canal Road. The Site is bounded to the south by Canal Road and the old Erie Canal. The properties to the north, east, and west of the Site include agricultural properties.

2.2.2 Geology

The soil underlying the Site consists of Niagara Silt Loam and Fredon Silt Loam. The soils are characterized as being poorly drained and receive little to no run-off from surrounding soils.

Soil borings completed at the Site indicated the presence of fine sands mixed with silty-sandy layers intermixed with lenses of fine-to-medium sandy-silt layers consistent with deposits of glacial till and outwash.

The basal till layer appears at approximately 30-35 feet (ft) below ground surface (bgs). This unit was encountered at some soil boring locations and appeared to consist of a mixture of unstratified drift consisting of variable particle sizes from clay to cobbles, dominated by dolostone, shale, and sandstone. Classification of the basal till unit indicated it ranged from dry to saturated and dense to very dense. Bedrock was not encountered in the soil borings, but is estimated to be approximately 40-60 ft bgs. Historical geologic cross sections which show pre-remediation conditions are shown in **Appendix C**. Boring logs are provided in **Appendix D.**

2.2.3 Hydrogeology

Based on previous work completed at the Site, groundwater was typically encountered 4-6 ft bgs at the Site. The area is underlain by a silty fine sand unit approximately 30-ft thick, which is underlain by a compact silt (till) layer a few feet thick. The Remedial Investigation (RI) suggested that there is an upward hydraulic gradient from the deep aquifer (30 to 45 ft bgs) to the shallow aquifer (4 to 30 ft bgs). Shallow groundwater flow is in a north-northwest direction.

A groundwater surface elevation contour map is shown in **Figure 3**. Groundwater monitoring well construction logs are provided in **Appendix D**.

2.3 Investigation and Remedial History

The Site has undergone a number of environmental investigations since 1981. An initial soil and groundwater assessment was completed by the Haz-O-Waste Corporation in 1981. A Site hydrology study and a groundwater correction plan for releases were completed in 1982 and 1985, respectively. A Phase II Remedial Investigation (RI) was completed in 1986. Additional investigations were completed throughout the 1990s. An air-stripping system combined with carbon adsorption with a single recovery well was installed in 1993. In 2001, the Site was abandoned by Northeast Environmental Services.

Significant events that have occurred at the Site include:

- July 2001—Northeast Environmental Services ceased operation of the treatment system.
- August 2001—Northeast Environmental Services ordered to restart system.
- January 2002—NYSDEC revokes Part 373 hazardous waste management facility permit and the NYSDEC assumes control of the Site.
- 2002—Source area investigation completed by Strategic Environmental Management, Inc.
- 2004—Supplemental source area investigation completed by Strategic Environmental Management, Inc.
- 2005—Off-site soil and groundwater investigation completed by Techlaw, Inc.
- 2007—Groundwater sampling completed by Op-Tech, Inc.

- 2009—Immediate Corrective Action completed by Op-Tech, Inc to remediate a diesel fuel spill from an abandoned truck.
- 2011—Remedial Investigation Report completed by EA Engineering, Inc.
- 2013—Pre-Design Investigation completed by TRC Engineers, Inc.
- 2020—Supplemental Remedial Investigation completed by TRC Engineers, Inc.
- 2023/2024—A remedial action was undertaken to abandon on-site monitoring wells, excavate contaminated material, and treat on-site groundwater.

The investigations revealed the presence of dissolved-phase volatile organic compounds (VOCs) above NYSDEC Ambient Water Quality Standards in shallow groundwater at the Site. Soil investigations completed at the Site detected concentrations of several VOCs above NYSDEC Part 375-6.8 Unrestricted Soil Cleanup Objectives primarily in the areas north of, northwest of, and beneath the former building.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Amended ROD issued March 2021 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.
- 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.

Soil Vapor

RAOs for Public Health Protection

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

Remedial Action

TRC prepared design plans, specifications, and supporting documents, approved by NYSDEC, in support of the Remedial Action (RA) outlined in the March 2021 amended ROD. The remediation work associated with implementation of the Technical Scope of Work (TSOW) was assigned to LaBella Associates (LaBella), a NYSDEC call-out contractor. The RA included site preparation, monitoring well decommissioning, dewatering with treatment and discharge, contaminated soil removal and disposal, post-excavation soil sampling, backfilling excavations using clean fill mixed with amendments, monitoring well installation, and site restoration. RA field work activities were completed between October 2023 and January 2024. The RA is documented in detail in the *Final Engineering Report*, dated August 2024, prepared by TRC. Primary elements of the completed SRA are summarized below.

Well Decommissioning

In October 2023, LaBella decommissioned 19 groundwater monitoring wells and groundwater extraction wells in accordance with NYSDEC CP-43: *Groundwater Monitoring Well Decommissioning Policy*.

Groundwater Dewatering, Treatment and Discharge

Dewatering was performed prior to and during excavation and backfilling activities. Groundwater was pumped from dewatering wells in the excavation area to an 18,000-gallon weir tank using a diesel-powered pump. On-site treatment of groundwater consisted a two-bag filter skid, consisting of two filter units (25-micron and 1-micron), an air stripper, and two 1,000-pound carbon vessels configured in series. Dewatering treatment system effluent was discharged to an on-site drainage swale and sampled in accordance with a NYSDEC State Pollutant Discharge Elimination System (SPDES) Permit Equivalent.

Contaminated Material Excavation and Off-Site Disposal

Contaminated soils were excavated and removed from the Site as part of the RA. The off-site disposal of contaminated materials was as follows:

- 3,148.55 tons of non-hazardous soils; and
- 1,106.87 tons of hazardous soils.

Post-Excavation Soil Sampling

Upon completion of the remedial excavation activities, 21 confirmatory soil samples were collected from the excavation. Post-excavation soil sample results were compared to Commercial Use Soil Cleanup Objectives (CUSCOs) and Protection of Groundwater Soil Cleanup Objectives (PGWSCOs). Remaining contamination at the Site is summarized below.

Backfilling

Approximately 4,270 tons of backfill material and 750 pounds of Daramend® Reagent Zero Valent Iron (ZVI), manufactured by Evonik, were imported and used at the Site to backfill the excavation. ZVI was placed in the excavation bottom and mixed with the lowest 1.5 feet of clean fill. An amendment mixing ratio of 1.7 pounds of ZVI per cubic yard of backfill was used during mixing. The excavation was then filled to grade.

Monitoring Well Installation

Two 2-inch diameter monitoring wells (TRC-MW-401 and TRC-MW-402) were installed. Well locations are shown on **Figure 2**. A summary of the well identification numbers, location, depth, diameter, and approximate screen interval depths are presented in the monitoring well construction table in **Section 4.3.1.** Monitoring well construction logs are provided in **Appendix D**.

2.5 Remaining Contamination

During the RA, endpoint soil samples were collected from the sidewalls and base of the excavation. Three individual sidewall soil samples indicated the presence of the following compounds at concentrations above commercial use soil cleanup objectives (SCOs): 1,2,4-trimethylbenzene, barium, toluene, and m/p xylene. Additionally, groundwater sampling indicated the presence of chlorinated VOCs, benzene, toluene, ethylbenze, and xylenes (BTEX) in the groundwater at concentrations above the NYSDEC Class GA Ambient Water Quality Standards and Guidance Values.

As contaminated soil and groundwater remain beneath the Site after completion of the RA, institutional and engineering controls are required to protect human health and the environment. Long-term management of these engineering and institutional controls and residual contamination will be performed under the SMP approved by the NYSDEC.

The Site is covered by an existing environmental easement that prohibits the future use of groundwater underlying the Site for use as a potable, process, or irrigation water supply, without the implementation of necessary water quality treatment as determined by the NYSDEC.

2.5.1 Soil

Upon completion of the RA excavation, endpoint soil samples were collected from the base and sidewalls of the excavation. Sidewall endpoint sample HOW-PE-SW-06 indicated the presence of 1,2,4-trimethylbenzene, HOW-PE-SW-08 indicated the presence of barium, and HOW-PE-SW-11 indicated the presence of the toluene and m/p xylene above Commercial Use SCOs. **Table 1** and **Figure 4** summarize the results of all soil

samples collected that exceed the Commercial Use SCOs at the Site after completion of the RA.

The source area was identified to be an 80’ by 100’ area excavated and disposed of during the RA. Upon completion of excavation, backfill consisting of Select Fill and Crushed stone was installed and compacted to match the existing site grade. Excavation was completed to elevation 416.0’ above North American Vertical Datum of 1988 (NAVD 88). Sidewall samples were collected at the approximate midpoint at an elevation of approximately 420.0’ NAVD 88.

Based on sidewall endpoint samples collected during the RA, estimated soil volume exceeding Commercial Use SCOs is assumed to be present around the three (3) sidewall samples detailed above. Assuming a 10-foot by 10-foot by 1-foot area around each sidewall sample to be contaminated, the total volume of contaminated soil remaining is estimated at 50 cubic yards. Any required soil sampling conducted during future development in the areas near the impacted samples should be conducted in accordance with the guidelines set forth in the Monitoring and Sampling Plan. Refer to **Section 3.1**.

Currently there are no known subsurface obstacles or utility lines in the excavation area. Other subsurface facilities may be present and should be verified before any excavation work via NY UDig 811 and/or private survey as needed.

2.5.2 Groundwater

Groundwater contamination above the NYSDEC Class GA Ambient Wate Quality Standards and Guidance Values is known to be present on the Site. The environmental easement prohibits the use of groundwater underlying the Site for use as a potable, process, or irrigation water supply, without the implementation of necessary water quality treatment as determined by the NYSDOH.

During the RA, backfill was amended with a chemical reductant, Daramend® Reagent ZVI, to enhance anaerobic reductive dichlorination of the groundwater contaminants of concern. Additional details regarding monitoring and evaluation for enhanced bioremediation have been added to Section 4.3.

During the April 2024 groundwater monitoring event, the following were determined:

- Generally, the location of the groundwater impacts coincides with the location of the former soil impacts, largely centered in the subsurface beneath the former building foundation.
- Chlorinated VOCs and BTEX compounds are the predominant VOCs detected in groundwater.
- Exceedances of Class GA Values for site related compounds were observed in the monitoring wells HOW-MW-401 and HOW-MW-402 located within the excavation area. These exceedances were two to three orders of magnitude below the concentrations previously detected in samples collected from the excavation area monitoring wells HOW-PT-MW103S and HOW-PT-MW101S before the remedial action took place.
- Marginal exceedances of Class GA Values for site related compounds were observed in limited monitoring wells surrounding the excavation area including monitoring wells HOW-MW-301, HOW-MW-303, HOW-MW-305, and HOW-MW-306.

Table 2 and **Figure 5** summarize the results of groundwater sampling completed in April 2024 and summarizes samples which exceed the standards, criteria, and guidelines (SCGs) after completion of the RA.

2.5.3 Soil Vapor

A soil vapor assessment has not been conducted at the Site as there are no structures currently present; however the potential for migration of VOCs from soil and/or groundwater into new buildings exists. **Section 3.2** discusses requirements for assessment of potential soil gas mitigation and vapor intrusion potential.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Because contamination remains 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 if future conditions warrant amendment by the NYSDEC project manager.

This IC/EC 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 features 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 E**, 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.

3.2 Institutional Controls

A series of ICs are required by the March 2021 Amended ROD 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 commercial or industrial uses only. Adherence to these ICs on the Site is memorialized 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 shown on **Figure 2**. These ICs are:

- The property may be used for commercial or industrial use (**Appendix A**);
- All ECs must be operated and maintained as specified in this SMP (**Appendix A**);
- All ECs must be inspected at a frequency and in a manner defined in the SMP (**Section 4.2**);
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH 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 NYSDEC (**Appendix A**);
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP (**Section 4.0**);
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP (**Section 6.0**);
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP (**Appendix E**);
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP (**Section 4.0**);
- 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 (**Appendix A**);

- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on **Figure 2** and any potential impacts that are identified must be monitored or mitigated (**Appendix A**);
- Farming, raising livestock, vegetable gardens, production of items for human consumption, active recreation, and residential housing are prohibited (**Appendix A**); and
- 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 (Appendix E).

3.3 Engineering Controls

3.3.1 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the RAOs 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 wells as per the NYSDEC CP-43 policy.

The remedial party will also conduct any needed site restoration activities, such as asphalt patching. 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 Monitoring Wells associated with Enhanced In-Situ Bioremediation

Groundwater monitoring activities to assess enhanced in-situ bioremediation (EISB) will continue, as determined by the NYSDEC 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 enhanced in-situ bioremediation 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 MONTORING 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 samples collected as part of site management for the Site are detailed in the Quality Assurance Project Plan provided in **Appendix F**. The monitoring, sampling and inspection conducted at the Site must be in accordance with the procedures defined in the Health and Safety Plan (HASP) provided in **Appendix G**.

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; and
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment.

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

- Sampling locations, protocol and frequency;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and

- Annual inspection and periodic certification.

Reporting requirements are provided in Section 6.0 of this SMP.

4.2 Site-Wide Inspection

Site-wide inspections will be performed annually. Site-wide inspections will also be performed after all severe weather events and/or emergencies that may adversely affect the ECs or monitoring devices. Modification to the frequency or duration of the inspections will require approval from the NYSDEC project manager. During these inspections, an inspection form will be completed as provided in **Appendix H** – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; 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; and
- If site records are complete and up-to-date.

Reporting requirements are outlined in Section 6.0 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 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 determined by the NYSDEC. Written confirmation must be provided to the NYSDEC 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.

4.3 Media Monitoring and Sampling

Samples shall be collected from the groundwater on a routine basis. Sampling locations, required analytical parameters, and schedule are provided in the Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

Sampling Requirements and Schedule Sampling Location	**Schedule**		
	TCL VOCs + 10 TICS (EPA Method 8260C)*	Enhanced In-Situ Bioremediation and Chemical Reduction Parameters	Frequency
HOW-MW-301	X	X	Quarterly
HOW-MW-303	X	X	Quarterly
HOW-MW-305	X	X	Quarterly
HOW-MW-306	X	X	Quarterly
HOW-MW-401	X	X	Quarterly
HOW-MW-402	X	X	Quarterly

Notes: TCL = Target Compound List

TICS = Tentatively Identified Compounds

Enhanced In-Situ Bioremediation and Chemical Reduction Parameters = methane/ethane/ethene by USEPA Method RSK-175, total organic carbon/dissolved carbon by USEPA Method SM5310D/9060A, chloride/sulfate by USEPA Method 300, and alkalinity by USEPA Method 310.2

* = Water quality parameters consisting of temperature, dissolved oxygen, oxidation/ reduction potential, pH, turbidity, and conductivity shall be collected and recorded using field instruments during each groundwater sampling event.

Detailed sample collection and analytical procedures and protocols are provided in the Field Activities Plan provided in **Appendix I** and the Quality Assurance Project Plan provided in **Appendix F**.

4.3.1 Groundwater Sampling

Groundwater monitoring will be performed quarterly to assess the performance of the remedy. Modification to the frequency or sampling requirements requires approval from the NYSDEC project manager.

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

The monitoring well network for this Site includes the following wells: HOW-MW-301, HOW-MW-303, HOW-MW-304, HOW-MW-305, HOW-MW-306, HOW-MW-401, and HOW-MW-402. The monitoring well network includes one sentinel well (HOW-MW-304) that can monitor downgradient plume migration. Sentinel wells are uncontaminated wells located directly downgradient of the plume or upgradient of sensitive receptors.

The table below summarizes the wells' identification numbers, as well as the location, depths, diameter, and screened intervals of the wells. As part of the groundwater monitoring, seven (7) on-site wells will be 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.

Monitoring Well Construction Details

Monitoring Well ID	Coordinates (North/ East)	Well Diameter (inches)	Elevation (above NAVD 88)			
			Casing	Surface	Screen Top	Screen Bottom
HOW-MW-301	1125131.90/ 1050897.93	2	426.45	423.44	418.44	408.44
HOW-MW-303	1125320.48/ 1050660.95	2	421.35	421.32	416.32	406.32
HOW-MW-304	1050686.65/ 125503.65	2	421.68	419.03	414.03	404.03
HOW-MW-305	1125438.03/ 1050866.50	2	421.07	421.10	416.10	406.10
HOW-MW-306	1125339.56/ 1050932.46	2	422.42	422.38	417.38	407.38
HOW-MW-401	1125287.88/ 1050827.48	2	423.05	423.10	418.10	408.10
HOW-MW-402	1125206.18/ 1050827.09	2	424.43	424.40	419.40	409.40

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

If biofouling or silt accumulation occurs in the on-site and/or off-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 prior approval from 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 6.0** – Reporting Requirements.

4.3.2 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in **Appendix H**. Other observations (e.g., groundwater monitoring well integrity) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the Field Activities Plan provided in **Appendix I**.

5.0 PERIODIC ASSESSMENTS/EVALUATIONS

5.1 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.

Potential vulnerabilities identified for the Site are as follows:

- Flooding: The Site is not within a FEMA Flood Zone; however, the old Erie Canal is located directly southeast of the Site across Canal Road. In an extreme weather event, the canal could overflow its banks and cause flooding on-site. While the old Erie Canal may flood in response to heavy rainfall, the flooding is not expected to impact the remedy such that it reduces the protectiveness of human health and the environment.

- Hurricanes: In an extreme weather event a hurricane could reach the Site, which could result in potential erosion or damage of the cover system or access gate.

As there are known vulnerabilities as indicated above, future vulnerability assessments for these and other potential vulnerabilities shall be assessed during periodic reviews.

5.2 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 of the SMP provides a summary of any green remediation evaluations to be completed for the Site during site management, and as reported in the Periodic Review Report (PRR).

Waste generation, water usage, and emissions will be minimized to the greatest extent possible during the groundwater sampling events on-site as well as during the remedial system inspections. No other waste, water or energy usage, or emissions are anticipated in association with this SMP.

5.2.1 Timing of Green Remediation Evaluations

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.

5.2.2 Frequency of Sampling and Other Periodic Activities

Transportation to and from the Site and use of consumables in relation to visiting the Site in order to conduct inspections and/or collect samples and ship samples to a laboratory for analyses, have direct and/or inherent energy costs. To the extent feasible, these tasks will be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources. Deliveries, shipping events, and non-routine Operation, Maintenance and Monitoring (OM&M) activities (i.e., removal and off-site disposal of liquid waste) will be coordinated with routine OM&M events to reduce overall travel to and from the Site.

5.2.3 Metrics and Reporting

As discussed in **Section 7.0** and as shown in **Appendix H** – Site Management Forms, information on energy usage, solid waste generation, and transportation and shipping will be recorded to facilitate and document consistent implementation of green remediation during site management.

5.3 Remedial System Optimization

A Remedial System Optimization (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.

The RSO study will focus on overall site cleanup strategy, process optimization and management with the intent of identifying impediments to cleanup and improvements to site operations to increase efficiency, cost effectiveness and remedial time frames. Green remediation technology and principals are to be considered when performing the RSO.

6.0. REPORTING REQUIREMENTS

6.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in **Appendix H**. These forms are subject to NYSDEC revision.

Inspection forms and other records generated for the Site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of the table below and summarized in the Periodic Review Report.

Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Inspection and Groundwater Sampling Report	Quarterly
Periodic Review Report	Annually, or as otherwise determined by the NYSDEC

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

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).

6.2 Periodic Review Report

A PRR shall be submitted annually to the NYSDEC or at another frequency as may be required by the NYSDEC. In the event that the Site is subdivided into separate parcels with different ownership, a single PRR will be prepared that addresses the Site described in **Appendix A** - Environmental Easement. The report will be prepared in accordance with NYSDEC DER-10 and submitted within 30 days of the end of each certification period. 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, fire 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 the groundwater monitoring events conducted under this SMP;
- 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, including but not limited to:

  - Trend monitoring graphs that present groundwater contaminant levels from before the start of the remedy implementation to the most current sampling data;
  - Trend monitoring graphs depicting system influent analytical data on a per event and cumulative basis;
  - Operation and Maintenance (O&M) data summary tables;
  - A current plume map for sites with remaining groundwater contamination; and
  - A groundwater elevation contour map for each gauging event.
- 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.
- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the ROD;
  - Any new conclusions or observations regarding Site contamination based on inspections;
  - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan;
  - An update to the climate change vulnerability assessment if site or external conditions have changed since the previous assessment, and recommendations to address vulnerabilities.
  - An evaluation of trends in contaminant levels in the affected media to determine if the remedy continues to be effective in achieving remedial goals as specified by the ROD; and
  - The overall performance and effectiveness of the remedy.

Following the last inspection of the reporting period, a Professional Engineer will prepare, and include in the PRR, 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 name] located at [address], am certifying as the New York State Department of Environmental Conservation Representative for the Site"

6.3 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.

7.0 REFERENCES

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

EA Engineering, 2011. Final Remedial Investigation Report Haz-O-Waste Site (7-27-003) Lenox, New York. March 2011.

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).

NYSDEC, 2021. Amended Record of Decision Haz-O-Waste (Northeast Environmental Services) Town of Lenox, Madison County, New York Site Number 727003, March 2021.

Strategic Environmental Management, Inc. 2002. Source Area Investigation Report: Former Northeast Environmental Services, Inc. Site. Town of Lenox, Madison County, New York. 2002

Strategic Environmental Management, Inc. 2004. Supplemental Source Area Investigation Report: Former Northeast Environmental Services, Inc. Site. Town of Lenox, Madison County, New York. 2004

TRC, 2024. Final Engineering Report, Haz-O-Waste (Northeast Environmental Services) Town of Lenox, New York. June 2024.