GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

TOWN OF QUEENSBURY, WARREN COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: 557003

Prepared for:

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Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date
1	7/18/2022	Added clarifying text about ash material in Section 1.4.5.1, updated NYSDEC contact in excavation work plan and other miscellaneous formatting updates	3/20/2023

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REVISED JULY 18, 2022

SITE MANAGEMENT PLAN
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

CERTIFICATION STATEMENT

I, Jeffrey A. Marx, P.E., certify that I am currently a NYS registered professional engineer 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).

JEFFREY A. MARX, P.E.

JUNE 16, 2023

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SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This Site Management Plan is required as an element of the remedial program for the Glens Falls Municipal Landfill at Luzerne Road (hereinafter referred to as the "Site" or "Glens Falls Landfill") under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by the New York State Department of Environmental Conservation (NYSDEC). The site was remediated substantially in accordance with State Assistance Contract (SAC) No. C303503 for Site No. 557003, which was executed on November 19, 2007, and last amended on December 13, 2010.

1.1.1 General

In March 2000, the City of Glens Falls and the NYSDEC entered an Order on Consent (No. A7-0383-9903 dated March 30, 2000) to address the development and implementation of a remedial program for the site, including a Remedial Investigation/ Feasibility Study (RI/FS), remedial design and implementation of the selected remedy, and operation, maintenance and monitoring of the remedial system. The City then entered into a SAC with NYSDEC for the RI/FS phase of the project (SAC No. C301539) which was executed by the City and NYSDEC, and approved by the New York State Comptroller on March 2, 2001. In accordance with the Order on Consent, a RI/FS was conducted by C.T. Male Associates on behalf of and under contract with the City of Glens Falls between October 2001 and November 2002. Based on the findings of the RI/FS, the NYSDEC in consultation with the NYSDOH, selected a remedy to close/cap the landfill as presented in the NYSDEC Record of Decision (ROD) dated March 2003. The City entered into a separate SAC with the NYSDEC for the Remedial

Design and Remedial Action (RD/RA) phases of the project (SAC No. C303503) which was executed by the City and NYSDEC, and approved by the New York State Comptroller on November 19, 2007. SAC Amendment No. 1 was executed by the City and NYSDEC to increase the amount of the contract (financial assistance) based on updated preliminary engineering and construction costs, and approved by the New York State Comptroller on May 19, 2008. SAC Amendment No. 2 was executed by the City and NYSDEC to extend the completion date of the SAC until December 31, 2012, and approved by the New York State Comptroller on December 13, 2010.

A Site Location Map of the site is provided as Figure 1. The controlled property boundaries of the 23.7± acre site are shown on the Environmental Easement Survey, Glens Falls Municipal Landfill at Luzerne Road (C.T. Male Drawing No. 21-543) presented as Figure 2 in this Site Management Plan. The boundaries of the site are more fully described in the Metes and Bounds Description that is part of the Environmental Easement (refer to Appendix A, Metes and Bounds Description).

After completion of the remedial work described in the Remedial Design Report, landfill waste remains beneath the low permeability cover system/cap at this site, which is hereafter referred to as "remaining contamination." This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (C.T. Male Associates), on behalf of the City of Glens Falls, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 3, 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

1.1.2 Purpose

The site contains landfill waste beneath the low permeability cover system/cap after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement to be granted to the NYSDEC, and to be recorded with the Warren County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan is to be 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.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of the low permeability cover system/cap and stormwater management system; and (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports (i.e., Post-Closure Monitoring Reports).

To address these needs, this SMP includes four plans: (1) an Engineering and Institutional Control Plan (Section 2) for implementation and management of EC/ICs; (2) a Site Monitoring Plan (Section 3) for implementation of Site Monitoring (groundwater monitoring, explosive gas monitoring, site inspections, etc.); (3) an Operation and Maintenance Plan (Section 4) for maintaining the integrity of the site's landfill cover system/cap and stormwater management system; and (4) an Inspections, Reporting and Certifications Plan (Section 5).

This plan also includes a description of Periodic Review Reports (i.e., Post-Closure Monitoring Reports) for the periodic submittal of data, information, recommendations, and certifications to 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);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the SAC (No. C303503) for the Site (No. 5-57-003), and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's Project Manager. 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.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The site is located primarily in the Town of Queensbury, Warren County, New York. The northeastern portion of the site is located in the City of Glens Falls, Warren County, New York.

The portions of the site located in the Town of Queensbury include: Section No. 309.06, Block 2, Lots 77 and 78; a portion of the Lands of the People of the State of New York Acquired in Connection with Interstate Route 503-3-1.2 (Glens Falls By-Pass) as shown on the NYSDOT Conveyance Map 920-C Parcel 1423; and Section No. 309.10, Block 1, Lots 85, 86 and 88.12 and portions of lots 87 and 93 on the Warren County Tax

Maps. The portion of the site located in the City of Glens Falls is identified as a portion of Section No. 309.06, Block 3, Lot 10 on the Warren County Tax Maps. The site encompasses approximately 23.7 acres (area of controlled property) with the low permeability cover system/cap encompassing approximately 15.35 acres.

A commercial property (Northway Self Storage, LLC) and residential properties are located north of the site. A U.S. Army Corps of Engineers jurisdictional wetland (Wetland No. 2) and undeveloped land owned by the Greater Glens Falls Local Development Corporation are located east of the northern half of the site. A commercial/warehouse property (Bare Bones Furniture) and the Luzerne Road Site (listed as a NYSDEC Inactive Hazardous Waste Site) are located east of the southern half of the site. The Luzerne Road Site (Site Number 5-57-010) is reported to have been heavily contaminated with PCBs due to capacitor salvaging operations conducted during the 1950's through the 1970's. The Luzerne Road Site was remediated by the NYSDEC in 2008 and 2009. A portion of the remediation extended onto the Glens Falls Landfill remedial action project site. As part of the Luzerne Road Site remediation, an excavation delineation barrier consisting of a non-woven geotextile was placed on the side walls and bottom of the excavated surfaces to define the vertical and horizontal extent of PCB contaminated soil that was excavated. The latter excavation delineation barrier geotextile extends onto a portion of the Glens Falls Landfill site.

An active transfer station operated by the Town of Queensbury for residents of Warren County is located south of the site between the landfill and Luzerne Road. The transfer station opened on January 2, 1977 and accepts municipal solid waste and recyclables. A cemetery, residential properties and the West Glens Falls Emergency Squad are located south of the site on the south side of Luzerne Road. Undeveloped land owned by the State of New York (i.e., under NYSDOT control) and Interstate 87 are located west of the site. Refer to Figure 1, Site Location Map. The boundaries of the site (controlled property) are more fully described in the Metes and Bounds Description in Appendix A.

1.2.2 Site History

The City of Glens Falls operated the site as a municipal solid waste (MSW) landfill for approximately 16 years from 1961 to 1977. It has been reported by NYSDEC that the landfill was used primarily for disposal of municipal refuse and some quantity of PCB capacitors may have been deposited at this landfill. However, there is no known documentation of the quantity or characteristics of either solid or hazardous waste at the landfill, nor data pertaining to the receipt of any waste other than general refuse (MSW). In the late 1970s, closure efforts were made through grading and seeding, but they were not considered sufficient to properly close the landfill, resulting in the City being in non-compliance with the NYSDEC 6NYCRR Part 360 (Part 360) landfill closure requirements. In 1983 a Phase I investigation was performed by Recra Research, Inc. to do a preliminary assessment of the site. A Phase II investigation was completed in 1987 by Recra Environmental, Inc. to characterize the site. The NYSDEC listed the site as a Class 2 Inactive Hazardous Waste Disposal Site in 1988 due to two factors: down-gradient PCB contamination detected in groundwater at monitoring well MW-101-5, and right-to-know information which indicated that five tons of ink waste from Valcour Imprinting, Inc. was deposited in the landfill. A groundwater sampling and analysis program was completed in 1990 by Clough, Harbor and Associates, and then in 1996 NYSDEC completed a supplemental sampling program to determine if the site was a source of PCB contamination in groundwater. A RI/FS was completed by C.T. Male Associates between October 2001 and November 2002.

1.2.3 Geologic Conditions

Based on a review of the 1987 Surficial Geology Map of New York (Hudson Mohawk Sheet) by Cadwell and others, the area of the site is mapped as having lacustrine sand. This mapping unit is predominantly composed of quartz sand deposits which are associated with depositional environments in large bodies of water (well sorted, stratified).

Underlying bedrock geology within the vicinity of the site is unknown according to a review of the 1970 Bedrock Geologic Map of New York (Hudson Mohawk Sheet) by

Fisher and others. According to a reference (Surficial Geology of the Glens Falls Region, New York) presented within the February 1987 Phase II Investigation Report for the Glens Falls Landfill, bedrock in the immediate vicinity of the site is reported to vary between shale and limestone, and is present at an approximate depth of 120 feet.

According to a review of the Soil Survey of Warren County (January 1989), the site is mapped with three different soil units; one pertaining to the landfill mass (Ud), one associated with the low lying occasionally swampy area northeast of the landfill mass (OaB), and one for the remaining land surrounding the previous two soil units (OaA). These soil units are defined as follows:

- Ud (Udorthents): This map unit consists of areas that were excavated or filled with material derived from sandy, gravelly, or loamy soils. The material from most areas that were excavated was used as roadfill in the construction of the Interstate 87 (Adirondack Northway). Other areas consist of filled or leveled areas used for parking lots, for recreation areas, as sanitary landfills, and other similar uses.
- OaB (Oakville loamy fine sand): This soil unit is in the same category as OaA with the main difference being the percentage of slope this unit is typically found on. Oakville soils are well drained and are found on outwash plains. These soils are composed mainly of sand with a high permeability, which promotes rapid movement of water. Therefore, the surface water runoff is low and the capacity of the soil to store water available for plant growth is low.

Based on previously conducted subsurface investigations, site soil and groundwater have been extensively evaluated. Review of existing reports indicates that the site exhibits light brown to gray, fine to medium sands, with isolated occurrences of seams of silty fine sand or gravel. Additionally, previous geotechnical results show that the largest percentage, up to 98.8 percent, of material composition consists of sand with the remaining composition consisting of silt and clay.

Soils on the site consist mainly of sand (very fine to medium and occasionally coarse) with little to trace silt. Sand was encountered from grade and extended to the termination depths of the soil borings completed as part of the RI, which were 52.5 feet

(MW-101-6I), 44.5 feet (MW-101-7I), 53 feet (MW-101-8I), 28 feet (MW-101-9S) and 18 feet (MW-101-10S). The referenced soil boring locations are shown on the Site Plan and Sampling Locations Map (C.T. Male Drawing No. 02-178, Sheet 1 of 4) from the RI Report and presented as Figure 3 in this SMP. Bedrock in the vicinity of the site is reported to vary between shale and limestone and is present at an approximate depth of 120 feet.

During completion of the RI the depth to groundwater was generally measured between 8 and 24 feet below grade, or 357 to 363 feet above mean sea level. ~~A~~ The inferred direction of groundwater flow across the site is to the southeast as shown on the Water Level Contour Map (2/27/02) [C.T. Male Drawing No. 02-178, Sheet 4 of 4] from the RI Report and presented as Figure 4 in this SMP.

1.3 SUMMARY OF REMEDIAL INVESTIGATION, AND PRE- AND POST-REMEDIAL ACTION FINDINGS

1.3.1 General

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 Report Glens Falls Municipal Landfill at Luzerne Road Site, dated October 7, 2002, by C.T. Male Associates.

Generally, the RI determined that the potential site related contaminants include select volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals and leachate indicator parameters in various media at the site. The Site Plan and Sampling Locations Map from the RI Report, presented as Figure 3 in this SMP, depicts the sampling locations as discussed herein.

During the RI, the soil and ash material sampling results were compared to the soil cleanup objective values presented in the NYSDEC Technical and Administrative Guidance Memorandum 4046, Determination of Soil Cleanup Objectives and Cleanup

Levels (TAGM 4046). The sediment sampling results were also compared to the sediment criteria presented in the NYSDEC Technical Guidance for Screening Contaminated Sediments. Results of samples analyzed for the hazardous waste characteristics (ash material and contents of abandoned drums) were compared to the hazardous waste regulatory values presented in 6NYCRR Part 371, Identification and Listing of Hazardous Wastes. The groundwater sampling results were compared to the NYSDEC groundwater standards and guidance values presented in 6NYCRR Part 703, Surface Water and Groundwater Quality Standards and Groundwater Effluent Standards and NYSDEC TOGS 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.

In the following subsections is a summary of site conditions when the RI was performed in 2001-2002.

1.3.2 Surface Soil

Eleven surface soil samples were collected from a depth of 0 to 2 inches below the vegetative cover, and analyzed for the Target Compound List (TCL) SVOCS, TCL PCBs, TCL pesticides, RCRA herbicides, cyanide and the Target Analyte List (TAL) metals. The only SVOCs detected above their TAGM 4046 recommended soil cleanup objective value were benzo(a)anthracene, benzo(b)pyrene and chrysene.

Benzo(a)anthracene was detected at a concentration of 0.45 mg/kg at SS-10, which is slightly above its NYSDEC TAGM 4046 recommended soil cleanup objective value and USEPA Health Based criteria (carcinogens) of 0.224 mg/kg, but below its TAGM 4046 soil cleanup objective value to protect groundwater quality of 3 mg/kg. Benzo(a)pyrene was detected at five surface soil sample locations (SS-2, SS-5, SS-8, SS-10 and in the field duplicate (FD-1) of SS-11) at concentrations slightly above their TAGM 4046 recommended soil cleanup objective value and USEPA Health Based criteria (carcinogens) of 0.061 mg/kg, but did not exceed its TAGM 4046 recommended soil cleanup objective value to protect groundwater quality of 11 mg/kg. Chrysene was detected at six surface soil sample locations (SS-2, SS-3, SS-5, SS-8, SS-10 and SS-11), but at concentrations below its TAGM 4046 recommended soil cleanup objective value

and TAGM 4046 soil cleanup objective value to protect groundwater quality of 0.4 mg/kg, except at SS-10. At this location chrysene was detected at 0.48 mg/kg, just slightly above its TAGM 4046 recommended soil cleanup objective value of 0.4 mg/kg.

One PCB (Aroclor 1254 at 1.7 mg/kg) was detected at SS-3 above the TAGM 4046 recommended soil cleanup objective value for surface soil of 1 mg/kg.

The majority of metals were detected at concentrations below their TAGM 4046 recommended soil cleanup objective values except for beryllium, copper, iron, mercury, nickel and zinc. The concentrations of beryllium, copper, iron and nickel are within the normal background range and/or within the same order of magnitude as the normal background range found in Eastern United States, New York State and/or the Albany area of New York State and so are felt to be background levels. The concentrations of mercury and zinc are within the normal background range found in the Eastern United States and therefore are potentially at background levels.

Based on the RI sampling results, it was concluded that surface soil outside of the landfill footprint was not significantly impacted by the landfill operations and did not contain contaminants that warranted remediation, and the NYSDEC and NYSDOH concurred.

1.3.3 Subsurface Soil and Ash Material

Eleven subsurface soil samples (six from select test pits taken from 3 to 8 feet below grade, and five from soil borings taken from 0 to 6 feet below grade) were collected and analyzed for TCL PCBs. An ash, slag, glass and cinders material (ash material) mixed with sand was encountered on the State of New York property adjacent to and west of the northern half of the western side of the landfill property line. Four samples were collected of the ash material from test pits on the west side of the site (TP-6B, TP-7A, TP-8A and TP-8C) and analyzed for TCL SVOCs, TCL PCBs, cyanide, TAL metals and hazardous waste characteristics [ignitability, corrosivity, reactivity (sulfide and cyanide), TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides and TCLP metals].

Two PCBs (Aroclor 1248 and Aroclor 1254) were detected within the subsurface soil samples collected with the landfill waste mass below the TAGM 4046 soil cleanup objective values. The analytical results detected Aroclor 1248 at 0.042 mg/kg (TP-15), 0.066 mg/kg (TP-17) and 0.17 mg/kg (TP-20), and Aroclor 1254 at 0.034 mg/kg (TP-15), 0.048 mg/kg (TP-17) and 0.11 mg/kg (TP-20). The concentrations of Aroclors detected were more than two orders of magnitude below the TAGM 4046 recommended soil cleanup objective value (10 mg/kg) and the TAGM 4046 soil cleanup objective value to protect groundwater quality (10 mg/kg), and approximately an order of magnitude below the USEPA Health Based criteria (1 mg/kg, carcinogens). Three PCBs were detected in the subsurface soil sample from soil boring MW-101-9S including Aroclor 1248 at 2.5 mg/kg, Aroclor 1254 at 2.0 mg/kg and Aroclor 1260 at 0.53 mg/kg, which were all below the TAGM 4046 recommended soil cleanup objective value of 10 mg/kg for subsurface soil and the TAGM 4046 soil cleanup objective value to protect groundwater quality of 10 mg/kg.

A total of twenty SVOCs were detected within the ash material samples, the majority of which were detected at low concentrations below the CRDL. Of those SVOCs detected above the CRDL, benzo(a)anthracene, benzo(a)pyrene, benzo(b)-fluoranthene, benzo(k)fluoranthene, chrysene and dibenzo(a,h)anthracene were the only compounds detected at concentrations above their NYSDEC TAGM 4046 recommended soil cleanup objective values. The concentrations detected of benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene and dibenzo(a,h) anthracene only slightly exceeded (within the same order of magnitude) their NYSDEC TAGM 4046 recommended soil cleanup objective values. Benzo(b)fluoranthene, benzo(k)-fluoranthene and chrysene were the only SVOCs that slightly (within the same order of magnitude) exceeded their NYSDEC TAGM 4046 soil cleanup objective value to protect groundwater quality at test pit TP-6B and TP-8A (chrysene only).

No PCBs were detected in the ash material samples above TAGM 4046 recommended soil cleanup objective values. Aroclor 1254 was detected at 0.12 mg/kg within TP-7A, at 0.2 mg/kg within TP-8A and at 0.093 mg/kg within TP-8C. These PCB concentrations are one to two orders of magnitude below the NYSDEC recommended

soil cleanup objective value and the NYSDEC TAGM 4046 soil cleanup objective value to protect groundwater quality of 10 mg/kg, and below the USEPA Health Based criteria of 1 mg/kg.

Twenty-three metals were detected above the CRDL and/or the IDL within the ash material samples, the majority of which were present at concentrations below their NYSDEC TAGM 4046 recommended soil cleanup objective values. Arsenic, barium, beryllium, copper, iron, mercury, nickel and zinc were the only metals detected in several ash samples above their TAGM 4046 recommended soil cleanup objective values, but were felt to be at or potentially at background levels. Analysis of the ash material samples for hazardous waste characteristics showed that the ash material is not corrosive, ignitable, reactive or TCLP hazardous.

The concentrations of contaminants detected in the ash material samples are not at levels that indicate the ash material is a significant threat to human health or at levels that would warrant remedial action of the ash material. The area where the ash material is located is covered with a vegetative cover, and access to the area is restricted. The potential for exposure to the ash material is anticipated to be minimal. Based on the RI sampling results, it was concluded that the ash material did not contain contaminants that would warrant remedial action, and the NYSDEC and NYSDOH concurred.

1.3.4 Sediment

Two sediment samples (SD-1 and SD-2) were collected and analyzed from a wetland area located northeast of the landfill waste mass and one sediment sample (SD-3) was collected and analyzed from a low-lying area located west of the landfill waste mass. The samples were analyzed for TCL SVOCs, TCL PCBs, TCL pesticides, RCRA herbicides, cyanide and TAL metals.

In general there were no contaminants of concern identified above NYSDEC TAGM 4046 recommended soil cleanup objective values or NYSDEC benthic aquatic life and wildlife bioaccumulation sediment criteria presented in the Technical Guidance for Screening Contaminated Sediments, except total PCBs in sediment sample SD-2. The

total PCB concentration of 0.191 mg/kg in sediment sample SD-2 was lightly above the NYSDEC wildlife bioaccumulation sediment criteria of 0.14 mg/kg.

Based on the RI sampling results, it was concluded that sediment outside of the landfill footprint was not significantly impacted by the landfill operations and did not contain contaminants that warranted remediation, and the NYSDEC and NYSDOH concurred.

1.3.5 Site-Related Groundwater

Eight groundwater monitoring wells (five shallow and three intermediate) were installed as part of the RI. Thirteen groundwater samples were collected from the eight RI (MW-101-6S, 6I, 7S, 7I, 8S, 8I, 9S and 10S) and five existing (MW-101-1, 2, 3, 4 and 5) monitoring wells during each of two sampling events (November 2001 and March 2002). The samples were analyzed for TCL VOCs, TCL PCBs, TAL metals, cyanide and Part 360 baseline leachate indicator parameters. An additional sample was collected from one of the existing wells (MW-101-1) and analyzed for VOCs in August 2002. The depth of the shallow wells ranged from 13 to 27 feet below grade. The depth of the intermediate wells ranged from 43 to 52 feet below grade. A summary of the RI groundwater monitoring results along with the historical, and pre- and post-remedial action groundwater monitoring results is presented in Table 1.3-1 at the end of the SMP text.

November 2001 Sampling Event-Shallow Wells

Four VOCs were detected in the shallow groundwater within monitoring well MW-101-1, and one VOC was detected within monitoring well MW-101-5. No other VOCs were detected above the CRDL or the IDL in the groundwater samples collected from the shallow wells. Benzene, chlorobenzene, cis-1,2-dichloroethene and tetrachloroethene were detected within the groundwater samples collected from monitoring well MW-101-1 at concentrations of 4, 18, 8.8 and 8.4 ug/l, respectively. The concentrations of these VOCs were slightly above their NYSDEC groundwater standards of 1 ug/l for benzene and 5 ug/l for the other VOCs. Chlorobenzene was detected at a

concentration of 3 ug/l within the groundwater sample collected from MW-101-5 which is below its NYSDEC groundwater standard of 5 ug/l.

Aroclor 1242 was the only PCB detected above the CRDL and/or the IDL within the existing shallow monitoring wells MW-101-1 through MW-101-5. Aroclor 1242 was detected within the groundwater samples collected from monitoring wells MW-101-1 (1.2ug/l), MW-101-4 (0.87ug/l) and MW-101-5 (7.4 ug/l), at concentrations that exceed the NYSDEC groundwater standard of 0.09 ug/l. No PCBs were detected above the CRDL and/or the IDL in the shallow monitoring wells installed as part of the RI (MW-101-6S through MW-101-10S).

Nineteen metals were detected above the CRDL and/or the IDL in the majority of the groundwater samples collected from the shallow monitoring wells. The majority of these metals were present at concentrations below their NYSDEC groundwater standards or guidance values except for arsenic, barium, beryllium, chromium, copper, iron, lead, magnesium, manganese and sodium. The concentrations of arsenic, barium, beryllium, chromium, copper and lead were generally slightly above or within the same order of magnitude as their groundwater standards. The exceedances of aluminum, iron, magnesium, manganese and sodium above groundwater standards or guidance values occurred in both upgradient and downgradient monitoring well locations suggesting that these metal concentrations could be at background levels.

Several leachate indicator parameters were detected above the CRDL. Ammonia, chloride, color, total dissolved solids and turbidity were the only parameters that were detected at concentrations that exceeded their NYSDEC groundwater standards.

March 2002 Sampling Event-Shallow Wells

Five VOCs were detected in shallow groundwater within monitoring well MW-101-1, and one VOC was detected within monitoring well MW-101-5. No other VOCs were detected above the CRDL or the IDL in the groundwater samples collected from the shallow wells. Benzene, chlorobenzene, cis-1,2-dichloroethene, methyl tert-butyl ether (MTBE) and tetrachloroethene were detected within the groundwater samples collected

from monitoring well MW-101-1 at concentrations of 1.9, 4.6, 11, 140 and 1.6 ug/l, respectively. The concentration of benzene was slightly above its NYSDEC groundwater standard of 1 ug/l and the concentration of cis-1,2-dichloroethene was slightly above its NYSDEC groundwater standard of 5 ug/l. The concentration of MTBE was more than one order of magnitude higher than its NYSDEC groundwater guidance value of 10 ug/l. Chlorobenzene and tetrachloroethene were detected at concentrations below their NYSDEC groundwater standards. Chlorobenzene was the only compound detected above the CRDL and IDL within monitoring well MW-101-5. The concentration of chlorobenzene at monitoring well MW-101-5 was below its NYSDEC groundwater standard of 5 ug/l.

Aroclor 1242 was the only PCB detected above the CRDL and/or the IDL within the existing shallow monitoring wells MW-101-1 through MW-101-5. Aroclor was detected within the groundwater samples collected from monitoring well MW-101-5 at a concentration of 3.4 ug/l, which exceeds its NYSDEC groundwater standard of 0.09 ug/l. Aroclor 1242 was not detected within any other existing monitoring well, nor were any other PCBs detected.

Nineteen metals were detected above the CRDL and/or the IDL in the majority of the groundwater samples collected from the shallow monitoring wells. The majority of these metals were present at concentrations below their NYSDEC groundwater standards or guidance values except for iron, magnesium, manganese and sodium. Lower concentrations of metals were detected during the March 2002 sampling event compared to the November 2001 sampling event. This is anticipated to be attributable to lower turbidity levels (laboratory measured) and lower dissolved solids levels during the March 2002 sampling event.

Several leachate indicator parameters were detected above the CRDL. Ammonia, chloride, color, phenols, total dissolved solids and turbidity were the only parameters that were detected at concentrations that exceeded their NYSDEC groundwater standards.

August 2002 Sampling Event

Monitoring well MW-101-1 was the only well sampled in August 2002 and for TCL VOCs only. This well was re-sampled due to the MTBE detection of 140 ug/l during the March 2002 sampling event. Four VOCs were detected within monitoring well MW-101-1. Benzene, chlorobenzene, cis-1,2-dichloroethene, and MTBE were detected at concentrations of 3.5, 11, 8.3 and 35 ug/l, respectively.

The concentration of benzene was slightly above its NYSDEC groundwater standard of 1 ug/l and the concentrations of chlorobenzene and cis-1,2-dichloroethene were slightly above their NYSDEC groundwater standard of 5 ug/l. The concentration of MTBE was slightly above its NYSDEC groundwater guidance value of 10 ug/l, but almost an order of magnitude lower than the concentration detected during the March 2002 sampling event.

November 2001 Sampling Event-Intermediate Wells

One VOC was detected within intermediate monitoring well MW-101-7I. No other VOCs were detected above the CRDL or the IDL in the groundwater samples collected from the intermediate wells. Chloroform was detected at a concentration of 18 ug/l, which is above but within the same order of magnitude as its NYSDEC groundwater standard of 7 ug/l.

No PCBs were detected above the CRDL and/or the IDL within the groundwater samples collected from the intermediate monitoring wells.

Fourteen metals were detected above the CRDL and/or the IDL in the groundwater samples collected from the intermediate monitoring wells. The majority of these metals were present at concentrations below their NYSDEC groundwater standards except for lead, manganese and sodium.

Several leachate indicators were detected above the CRDL and the IDL. However, there were no leachate indicators that exceeded their NYSDEC groundwater standards.

March 2002 Sampling Event-Intermediate Wells

No VOCs and no PCBs were detected above the CRDL and/or the IDL in the groundwater samples collected from the intermediate monitoring wells.

Sixteen metals were detected above the CRDL and/or the IDL in the groundwater samples collected from the intermediate monitoring wells. The majority of the metals were present at concentrations below their NYSDEC groundwater standards except for iron, manganese and sodium.

Based on the RI groundwater sampling results, comparisons and findings, it was concluded that groundwater collection and treatment was not warranted considering that local groundwater was not used as a source of drinking water, and the NYSDEC and NYSDOH concurred.

June 2009 Pre-Remedial Action Groundwater Sampling Event

Pre-remedial action sampling of the existing groundwater monitoring wells was completed in June 2009 to determine if the site's groundwater conditions had changed since the last groundwater sampling event in 2002 and establish the existing conditions prior to the start of the remedial action construction. The monitoring wells sampled as part of the pre-remedial action sampling event were MW-101-1, MW-101-2, MW-101-3, MW-101-4, MW-101-5, MW-101-6S, MW-101-7S, MW-101-8S, MW-101-10S, MW-101-6I, MW-101-7I, and MW-101-8I.

During the June 2009 sampling event no VOCs were detected in the groundwater samples analyzed above NYSDEC groundwater standards or guidance values, except at monitoring wells MW-101-1 and MW-101-7S. Benzene was detected above its groundwater standard of 1 ug/l in the sample from well MW-101-1 at a concentration of 2.6 ug/l (estimated) and in the sample from well MW-101-7S at a concentration of 1.9 ug/l (estimated). Chlorobenzene was detected above its groundwater standard of 5 ug/l in the sample from well MW-101-1 at a concentration of 28 ug/l. PCBs were detected in the groundwater samples from monitoring wells MW-101-1, MW-101-5 and MW-101-7S above its groundwater standard of 0.09 ug/l total PCBs. Aroclor 1232 was detected in the

samples from wells MW-101-1 at a concentration of 1.0 ug/l and MW-101-7S at a concentration of 5.6 ug/l. Aroclor 1242 was detected in the sample from well MW-101-5 at a concentration of 10 ug/l.

The leachate indicator parameters and inorganic parameters that exceeded their groundwater standards or guidance values in one or more monitoring wells were as follows:

- Turbidity (lab measured): All wells except MW-101-4 and MW-101-8I;
- Color: All wells except MW-101-6I and MW-101-8I;
- Total dissolved solids (TDS): All wells except MW-101-3, MW-101-6I, MW-101-6S and MW-101-7I;
- Chloride: Well MW-101-3;
- Ammonia: Wells MW-101-1, MW-101-5 and MW-101-7S;
- Aluminum: Wells MW-101-2, MW-101-3, MW-101-6S, MW-101-7S and MW-101-10S;
- Iron: All wells except MW-101-8I;
- Magnesium: Wells MW-101-1, MW-101-4, MW-101-5 and MW-101-7S;
- Manganese: All wells except MW-101-3, MW-101-6S, MW-101-6I and MW-101-8I;
- Sodium: All wells except MW-101-6I; and
- Thallium: Well MW-101-2.

October 2011 Post-Remedial Action Groundwater Sampling Event

Post-remedial action sampling of the existing and replacement groundwater monitoring wells was completed in October 2011 to determine if the site's groundwater conditions had changed since the pre-remedial action groundwater sampling event in June 2009 and establish the existing conditions after the completion of the remedial action construction. The monitoring wells sampled as part of the post-remedial action

sampling event were existing wells MW-101-1, MW-101-3, MW-101-4, MW-101-5, MW-101-6S, MW-101-7S, MW-101-6I and MW-101-7I; replacement wells MW-101-8S(R), MW-101-10S(R) and MW-101-8I(R); and Luzerne Road Site well MW-2S (refer to Section 3.3.1.1).

During the October 2011 sampling event no VOCs were detected in the groundwater samples analyzed above NYSDEC groundwater standards or guidance values, except at monitoring wells MW-101-1 and MW-101-7S. Benzene was detected above its groundwater standard of 1 ug/l in the sample from well MW-101-1 at a concentration of 2.6 ug/l (estimated) and in the sample from well MW-101-7S at a concentration of 2.3 ug/l (estimated). Chlorobenzene was detected above its groundwater standard of 5 ug/l in the sample from well MW-101-1 at a concentration of 19 ug/l. 1,4-Dichlorobenzene was detected above its groundwater standard of 3 ug/l in the sample from well MW-101-1 at a concentration of 3.4 ug/l (estimated). PCBs were detected in the groundwater samples from monitoring wells MW-101-5 and MW-2S above its groundwater standard of 0.09 ug/l total PCBs. Aroclor 1242 was detected in the sample from well MW-101-1 at a concentration of 8.6 ug/l and in the sample from well MW-2S at a concentration of 3.6 ug/l.

The leachate indicator parameters and inorganic parameters that exceeded their groundwater standards or guidance values in one or more monitoring wells were as follows:

- Turbidity (lab measured): All wells except MW-101-5, MW-101-6I and MW-101-7I;
- Color: All wells except MW-101-6I and MW-101-8I;
- Total dissolved solids (TDS): Wells MW-101-1, MW-101-3 and MW-101-7S;
- Chloride: Well MW-101-3;
- Ammonia: Wells MW-101-1, MW-101-4, MW-101-7S and MW-101-7I;
- Aluminum: Wells MW-101-3, MW-101-6S, and MW-2S;
- Iron: All wells;

- Magnesium: Wells MW-101-4, MW-101-5 and MW-101-7S;
- Manganese: All wells except MW-101-3, MW-101-6S, and MW-101-6I; and
- Sodium: All wells except MW-101-5 and MW-101-8S(R).

1.3.6 Site-Related Explosive Gases and Soil Vapor Intrusion Findings

A total of one hundred and twenty six landfill gas sampling points were performed as part of the RI. There were isolated areas of elevated landfill gases detected below grade, primarily at higher elevations on top of the landfill waste mass and at a few perimeter locations on the southeast and south sides of the landfill. The elevated perimeter readings did not extend beyond the property boundary. No landfill gases were detected in the buildings at the transfer station.

The % LEL readings on top of the landfill ranged between 0 and 9%, except at sampling points EG-36, EG-69, EG-87, EG-92, EG-94, EG-95, EG-101 and EG-105 (below ground only), which were notably higher than the other locations. The locations where below ground % LEL readings were elevated corresponded to higher elevations on the landfill mass, except for EG-36. Sampling point EG-36 was advanced near monitoring well MW-101-8S. Additional sampling points (EG-77 and EG-78) were advanced around EG-36, specifically along the property boundary east and south of MW-101-8S, and elevated explosive gases were not detected (i.e., readings of less than 2% LEL). The % LEL readings around the perimeter of the landfill and property boundary ranged between 0 and 8%, except at sampling points EG-33 and EG-34 (below ground only), which were notably higher than the other locations. The below ground reading at EG-33 yielded a concentration of 99% LEL and the below ground reading at EG-34 yielded a reading of greater than 100% LEL. Both of these sampling locations were located on the south side of the landfill mass near the transfer station. Additional sampling points were advanced south of these two points along the property boundary (EG-74, EG-75 and EG-76) and elevated explosive gases were not detected (i.e., readings of less than 1% LEL). All of the above ground sampling points did not detect explosive gases at concentrations of concern.

A pre-remedial action soil vapor intrusion/soil gas study was completed on June 30, 2009 to determine the potential for intrusion of volatile landfill gasses into nearby structures. Structures/residences on or in the vicinity of the site include the attendant's building and quonset hut at the transfer station located adjacent to the south side of the landfill; the Bare Bones Furniture building(s) located adjacent to the site's southeastern property boundary; residential and commercial structures located south of the site and south of Luzerne Road; and three residential properties and self-storage units located to the north of the site. Six subsurface locations around the landfill identified as soil gas sampling points SG-1 to SG-6 as well as three outside ambient air samples identified as OA AIR-1 to OA AIR-3 were sampled as part of the pre-remedial action soil vapor intrusion/soil gas study. The soil gas and ambient air sampling locations are shown on the Soil Vapor Intrusion Study Sampling Locations Map presented as Figure 5 in this SMP.

Several VOCs were detected in the soil gas samples and outside ambient air samples, the majority of which were at low levels. In general, the ambient air sample detections were similar to or lower than the detections in the soil gas samples. A summary of the pre-remedial action soil gas and ambient are sampling results is presented in Table 1.3-2 at the end of the SMP text.

1.3.7 Waste Materials

Forty-three exploratory test pits were advanced around the perimeter of the landfill during the RI to determine the extent of waste deposition. In general, the waste encountered during the test pits consisted of municipal solid waste. Other types of waste material included construction and demolition debris, compressed paper, and bulky waste (e.g. white goods) on the east side of the landfill. An ash, slag, glass and cinders material mixed with sand was encountered on the west side of the landfill (sampling results discussed above in Section 1.3.3 Subsurface Soil and Ash Material).

Several abandoned drums were observed across the landfill waste mass during the RI. In general, the drums did not have any visible markings, were rusted and pitted, and

appeared to be empty or contained a hard white material, possibly a hardened enamel/epoxy material. Based on sampling and testing results, the contents of the abandoned drums encountered at the landfill that contained a hard white material were not corrosive, ignitable, reactive or TCLP hazardous.

1.3.8 Leachate

During the RI, no leachate outbreaks were observed during completion of field activities or specifically during the surface leachate investigation. In addition, there has been no leachate outbreaks historically reported for the subject site. Laboratory analysis of groundwater samples for 6NYCRR Part 360 leachate indicator parameters did not identify groundwater contamination that suggests on-going leachate outbreaks or the significant presence of leachate. Based on the RI investigations and sampling results, it was concluded that leachate collection and treatment were not warranted, and the NYSDEC and NYSDOH concurred.

1.4 SUMMARY OF REMEDIAL ACTIONS

1.4.1 Remedial Action Objectives

Based on the types and extent of contamination at the Glens Falls Landfill and the potential for exposure to the contaminants the remedial action objectives for the site were as follows:

- Prevent direct contact with the landfill contents;
- Minimize stormwater/precipitation infiltration into the landfill waste mass and thereby reduce the potential for contaminants to leach to groundwater;
- Control surface water runoff and surface erosion; and
- Control landfill gas migration.

The remedial action as presented in the ROD of closing and capping the landfill with a low permeability cover system/cap was selected to eliminate the potential

exposure routes and pathways of dermal contact with exposed refuse, dermal contact and/or ingestion of contaminated soil and potential leaching of contaminants with stormwater runoff, and minimize stormwater/precipitation infiltration and potential leaching of contaminants from the waste mass that could be carried downward to, and migrate with, groundwater.

1.4.2 Major Components and Description of Remedial Action

The site was remediated substantially in accordance with the NYSDEC approved Final Remedial Design Report, Remediation (Closure and Capping) of Glens Falls Municipal Landfill at Luzerne Road Site, dated November 4, 2008 and revised June 10, 2009 by C.T. Male Associates; the Stormwater Pollution Prevention Plan (SWPPP) for Construction Activities, Glens Falls Municipal Landfill At Luzerne Road Remedial Construction, dated December 1, 2008 and revised June 10, 2009 by C.T. Male Associates; and the NYSDEC approved Contract Documents (Project Manual and Drawings), Glens Falls Municipal Landfill at Luzerne Road Remedial Construction, dated July 2009 by C.T. Male Associates.

Based on the results of the RI/FS for the site and the criteria identified in the Feasibility Study for the evaluation of alternatives, the NYSDEC selected the installation of a Modified 6NYCRR Part 360 Cap to close and cap the landfill. The remedial action construction work was awarded to and implemented by Kubricky Construction Corporation. The following is a summary of the Remedial Actions performed at the site and a description of the steps taken to accomplish the remedial action objectives:

- Placed and constructed temporary erosion and sediment control measures including, but not limited to, stabilized construction entrances, temporary drainage swales, temporary sediment traps, temporary riprap outlets and silt fence, prior to the start of construction in accordance with the SWPPP;
- Removed trees and cleared the landfill surface to facilitate the remedial construction;
- Excavated areas of landfill waste mass that extended onto adjoining properties to the north (Northway Self Storage, LLC) and east (A & Q Holdings, Inc.) and placed the

material back onto the surface of the landfill within the site's property boundaries, and cut side slopes (refuse) to achieve a more balanced cut and fill across the site;

- Excavated some landfill waste mass on the northeast side of the landfill that extended into a jurisdictional wetland, transferred the waste back onto the surface of the landfill, restored the disturbed jurisdictional wetland, and cut back the northeast side slope of the landfill so that the landfill cover system/cap did not extend into the wetland;
- Excavated some landfill waste mass on the south side of the landfill and transferred it back onto the surface of the landfill so that the landfill cover system/cap did not extend into the existing transfer station south of the landfill;
- Characterized the contents of and segregated drums of waste encountered on the surface and within the landfill waste mass, and properly disposed of wastes off-site based on the sampling results (refer to Section 1.4.3);
- Excavated PCB contaminated soil (equal to or greater than 50 mg/kg) in an area on the east side of the landfill and properly dispose of the soil off-site, and installed an excavation delineation barrier geotextile over the excavation area prior to backfilling (refer to Section 1.4.3);
- Imported intermediate grading material (from on-site sources such as where storm drainage basins were excavated and from off-site sources including the Beneficial Use Determination (BUD) incinerator ash material from the City's Wastewater Treatment Plant) to grade the landfill to achieve the required maximum side slope;
- Re-graded the landfill waste mass for erosion and drainage control and to meet the minimum (4%) and maximum (31.5%) slope and slope stability requirements;
- Installed a Modified Part 360 low permeability cover system/cap over the landfill surface consisting of a 12-inch thick soil gas venting layer with gas venting laterals and structures, a geomembrane low permeability barrier layer consisting of textured 40 mil linear low density polyethylene (LLDPE), a geocomposite (instead of soil) drainage layer above the geomembrane low permeability barrier layer, an 18-inch

thick soil barrier protection layer, and a 6-inch thick topsoil layer that was hydroseeded to establish a vegetative cover;

- Installed a drainage swale and crushed stone underdrain with 6-inch diameter perforated HDPE drain pipe below the drainage swale around the perimeter of the landfill to provide an outlet for the landfill surface water runoff, minimize ponding and divert it to stormwater management basins, and to minimize the landfill surface water runoff and other stormwater run-on from infiltrating the area around the perimeter of the landfill;
- Constructed stormwater management basins (two retention basins and one detention basin with spillway and outlet structure) to accept surface water runoff (no leachate, just stormwater from precipitation events) from the closed landfill and allow it to infiltrate into the ground or be discharged, as applicable, in a controlled manner;
- Installed four catch basins, five HDPE culvert pipes and one HDPE discharge pipe to convey the stormwater from the perimeter drainage swale and underdrain below the swale to the stormwater management basins;
- Installed NYSDOT medium stone filling underlain by a non-woven geotextile at the outlets of the culvert pipes that convey the flow from the drainage swales into the stormwater basins and at the outlets of the drainage swales that covey flow into the basin on the east side of the landfill to control erosion;
- Installed a 10-foot wide perimeter access road around the landfill where sufficient space exists and a 3-foot wide access path on the north side of the landfill to provide access for operation, maintenance and monitoring of the closed landfill;
- Installed a 6-foot high chain link fence around the perimeter of the landfill outside the drainage swale and perimeter access road to keep out trespassers, specifically off-road vehicles that could damage the integrity of the landfill cover system/cap;
- Installed 4 inches of topsoil and hydroseeded areas outside of the landfill cover system/cap and the areas disturbed by the construction, to establish a vegetative cover;

- Installed erosion control blankets, after hydroseeding, over the landfill surface, in the perimeter drainage swale and at other select locations around the landfill perimeter to control erosion until a vegetative cover was established; and
- Installed turf reinforcement mat, after hydroseeding, in areas of concentrated flow and steeper gradients in the drainage swale including along the western and northeastern sides of the landfill to provide long term erosion control.

These remedial activities were completed at the site between November 2009 and November 2010.

The execution and recording of an Environmental Easement to restrict land use and prevent future exposure to landfill waste and any contamination remaining below the landfill cover system/cap at the site will be filed for the site.

The development and implementation of this Site Management Plan is for long term management of the remaining contamination (landfill waste mass) as required by the Environmental Easement, which includes plans for: (1) Engineering and Institutional Controls, (2) media monitoring, (3) operation and maintenance of low permeability cover system/cap and stormwater management system, and (4) reporting.

1.4.3 Removal of Contaminated Materials from the Site

1.4.3.1 General

The contaminated materials that were removed from the site during the remedial action construction and properly disposed of off-site included abandoned drums of non-hazardous and hazardous wastes, one capacitor, and hazardous PCB contaminated soil (equal to or greater than 50 mg/kg PCBs) as discussed in the following subsections.

Wastes generated during the pre- and post-remedial action groundwater sampling events and remedial action construction including groundwater development and purge water, decontamination water, personal protective equipment, spent materials of construction from the temporary drum storage areas, and spent materials of construction

and wastes from the equipment decontamination pad were also removed from the site and properly disposed of off-site.

A summary of the contaminated materials and wastes that were removed from the site is presented in Table 1.4.3-1 at the end of the SMP text. The referenced table includes: the waste type, quantity, disposal classification, date removed from site, transporter name and permit number, and disposal facility name and permit number.

The PCB soil cleanup objectives (SCOs) used for the remedial action construction project are as follows:

- Less than 50 mg/kg total PCBs for soil below the low permeability cover system/cap over the surface of the landfill. Soil with a total PCB concentration of 50 mg/kg or greater is a hazardous waste in New York State (NYS) in accordance with 6NYCRR Part 371.4(e)(1) and required off-site disposal.
- Less than or equal to 1 mg/kg total PCBs for site surface soil (less than 1-foot below ground surface) outside of the low permeability cover system/cap per TAGM 4046, Determination of Soil Cleanup Objectives and Cleanup Levels.
- Less than or equal to 10 mg/kg total PCBs for subsurface soil (greater than 1-foot below ground surface) outside of the low permeability cover system/cap per TAGM 4046.

1.4.3.2 Abandoned Drums of Waste

As noted in Section 1.3.7 of this SMP, during the RI several abandoned drums were identified across the landfill that either were empty or contained a hard white material. During the remedial action construction, additional drums of waste were encountered during clearing and grubbing of the site, and during landfill waste mass excavation and re-grading activities. In general, the drums were unmarked, rusted and pitted. The majority of the drums were empty, contained the hard white material that was sampled during the RI or contained metal filings/shavings.

The drums of waste were sampled and characterized, and properly disposed of off-site based on the laboratory analyses results. The contents of several abandoned drums were characterized as a hazardous waste with one or more of the following EPA waste codes: D008, D040, F002 and F003. Approximately one-hundred and sixty-five drums were encountered and disposed of off-site. The empty drums and drums of waste that were characterized as non-hazardous were disposed of in bulk in two roll-offs (23.07 tons) and nine DOT approved 55-gallon drums. The drums of waste that were characterized as hazardous waste were disposed of in six DOT approved cubic yard boxes and five DOT approved 55-gallon drums. Refer to Table 1.4.3-1 at the end of the SMP text for transportation and disposal information.

The drums of metal filings/shavings were encountered in an area approximately 50 feet by 50 feet (approximately 2,500 square feet) where landfill waste mass was being excavated (approximately 10,800 square feet) on-site and on the adjoining property to the east (A & Q Holdings, Inc. property) for relocation onto the surface of the landfill within the low permeability cover system/cap and in the area of Temporary Sediment Trap #7B on the east side of the landfill. The area of waste excavation on A & Q Holdings, Inc. property was also adjacent to the Luzerne Road Site area of remediation. A portion of the Luzerne Road Site remediation extended onto the Glens Falls Landfill remedial action project site on the east side of the landfill. As part of the Luzerne Road Site remediation, an excavation delineation barrier (EDB) consisting of a non-woven geotextile was placed on the side walls and bottom of the excavated surfaces to define the vertical and horizontal extent of PCB contaminated soil that was excavated and provide demarcation between existing soils and imported materials. The western limit of the EDB geotextile associated with the Luzerne Road Site was observed in close proximity to the eastern limit of where the landfill waste mass was being excavated on A & Q Holdings, Inc. property.

Due to the changed condition of encountering buried drums that contained a different material then the drums of hard white material previously sampled during the RI and determined to not be TCLP hazardous, soil sampling was required by the NYSDEC to document the quality of the soil remaining in place below where the drums of metal

filings (changed condition) were encountered and removed (outside of the landfill low permeability cover system/cap).

Three soil samples (one per 900 square feet) identified as PE-7B-1 to PE-7B-3 were collected on January 5, 2010 and analyzed for the TCL VOCs, TCL SVOCs, TCL PCBs and TAL metals. No VOCs or SVOCs were detected above laboratory method detection limits. Several metals were detected, but the levels were below the 6NYCRR Part 376-6.8(a) (Part 375) unrestricted use SCOs, except for chromium. Chromium was detected at concentrations ranging from 2.90 mg/kg to 4.48 mg/kg, which is slightly above the Part 375 unrestricted use SCOs for hexavalent chromium of 1 mg/kg, but below the Part 375 unrestricted use SCOs for trivalent chromium of 30 mg/kg. The concentrations of chromium detected were within the normal background range found in Eastern United States and New York State, and so were felt to be background levels. PCBs (Aroclor 1248) were detected in the soil samples at concentrations ranging from <0.17 mg/kg to 1.4 mg/kg, which were below the TAGM 4046 SCOs criteria of 10 mg/kg for subsurface soil (outside of the landfill cover system/cap). Due to the low level PCB detections, nine additional soil samples (one per 900 square feet) identified as PE-7B-4 to PE-7B-12 were collected on February 2, 2010 in the balance of the area where landfill waste mass was excavated in the area of Temporary Sediment Trap #7B and analyzed for TCL PCBs. The PCB results were <0.34 mg/kg to 0.44 mg/kg, which were below the TAGM 4046 SCOs criteria of 10 mg/kg for subsurface soil (outside of the landfill cover system/cap).

The soil sampling results are summarized in Table 1.4.3-2 at the end of the SMP text. The soil sampling locations are shown on the Temporary Sediment Trap #7A (East Basin) and Trap #7B Post-Excavation Soil Sampling Locations and PCB Results Map presented as Figure 6 in this SMP.

The soil with low levels of PCBs was not required to be excavated by the NYSDEC below where the landfill waste mass was removed on-site outside of the low permeability cover system/cap and on the A & Q Holdings, Inc. property since the PCB detections were below the TAGM 4046 SCOs criteria of 10 mg/kg for subsurface soil.

Due to the low level PCB detections, the NYSDEC did require that EDB geotextile be placed over the excavated area to provide a demarcation barrier between the existing soils and imported materials. An EDB geotextile (Geotex 311 by Propex, Inc.) was installed over the excavated area prior to the area being backfilled with imported sand. The horizontal limit and vertical elevations of the EDB geotextile is shown on the New Excavation Delineation Barrier East Side (Trap #7B Area) of the Glens Falls Landfill presented as Figure 7 in this SMP

1.4.3.3 PCB Capacitor

During landfill waste mass excavation and re-grading activities, a capacitor was encountered on the north slope of the landfill. It was discovered in a load of landfill waste that had been loaded into an end dump for relocation. Based on laboratory analysis of two soil samples for TCL PCBs, one in the area where the capacitor was encountered (<0.44 mg/kg PCBs) and the other in the load of material that was in the end dump with the capacitor (4.9 mg/kg PCBs), PCB contaminated soil above the SCOs criteria for soil below the landfill cover system/cap was not encountered associated with the capacitor. Therefore, no soil associated with the capacitor was removed from the site. The capacitor was containerized in a DOT approved 55 gallon drum and disposed of off-site as a hazardous waste (NYS waste code B005). Refer to Table 1.4.3-1 at the end of the SMP text for transportation and disposal information.

1.4.3.4 PCB Contaminated Soil

During excavation for the stormwater retention basin (East Basin) in the area of the Temporary Sediment Trap #7A on the east side of the landfill as part of the remedial action construction, the non-woven geotextile associated with the Luzerne Road Site remediation was encountered in a few locations as expected. As noted in Section 1.4.3.2, a portion of the Luzerne Road Site remediation extended onto the Glens Falls Landfill remedial action project site on the east side of the landfill. As part of the Luzerne Road Site remediation, an excavation delineation barrier (EDB) consisting of a non-woven geotextile was placed on the side walls and bottom of the excavated surfaces to define the

vertical and horizontal extent of PCB contaminated soil that was excavated and provide demarcation between existing soils and imported materials. In accordance with the Glens Falls Landfill remedial action construction Contract Documents, the bottom and sides of the retention basin were over-excavated two feet in April 2010 from the design elevation to provide adequate cover between the new EDB geotextile to be installed and the future removal of sediment build up in the stormwater basin. Twelve inches of cover over the EDB geotextile is required by NYSDEC. Twenty-four inches of cover was required to be installed under the Contract Documents so that when sediment is removed from the retention basin in the future, the minimum twelve inches of cover over the EDB geotextile is not compromised.

The soil removed during over-excavation of the East Basin was placed on the surface of the landfill as intermediate grading material below the low permeability cover system/cap. Post-excavation soil sampling was conducted to document the soil remaining in place prior to installation of the new EDB geotextile and backfilling of the over-excavated area. Thirty-six surface soil samples identified as PE-7A-1 to PE-7A-36 were collected from the East Basin (area of Temporary Sediment Trap #7A) on April 26, 2010 and analyzed for TCL PCBs. Several of the post-excavation soil samples had PCB concentrations above the TAGM 4046 SCOs criteria outside of the landfill cover system/cap of 10 mg/kg for subsurface soil and 1 mg/kg for surface soil. Additional soil was excavated in May 2010 in an area approximately 35 feet by 45 feet by 2 feet deep (1,713 square feet) that had PCB detections of 4.4 mg/kg to 42 mg/kg on the east end of the north slope of the East Basin; and in an area approximately 35 feet by 130 feet by 1-foot deep (4,561 square feet) that had PCB detections of 1.1 mg/kg to 3.9 mg/kg on the bottom of the west end of the East Basin. Since the PCB concentrations were less than 50 mg/kg, the excavated soil was placed on the southern half of the east side slope of the landfill surface below the low permeability cover system/cap.

Following the additional soil excavation, seventeen additional post-excavation surface soil samples identified as PE-7A-37 to PE-7A-53 were collected from the East Basin (area of Temporary Sediment Trap #7A) on May 10, 2010 and analyzed for TCL PCBs. The PCB detections in the additional soil samples ranged from <0.34 mg/kg to

5.3 mg/kg, except at sample location PE-7A-37 where 58 mg/kg PCBs were detected. The extent of the soil at or greater that 50 mg/kg PCBs was determined through additional soil sampling conducted on May 14, 2010 to the north (PE-7A-37N), east (PE-7A-37E), south (PE-7A-37S) and west (PE-7A-37S) of sample location PE-7A-37 within a grid interval of 10 feet per the Toxic Substance Control Act (TSCA) requirements and at depths of 0-6 inches and 12-18 inches below grade. The PCB detections in the additional soil samples ranged from <0.34 mg/kg to 1.3 mg/kg, which were below the TAGM 4046 SCOs criteria outside of the landfill cover system/cap of 10 mg/kg for subsurface soil. Based on the soil sampling results, additional soil was excavated on July 28, 2010 in an area approximately 13 feet by 13 feet by 18 inches deep centered around soil sample location PE-7A-37 and in an area approximately 12 feet by 21 feet by 12 inches deep to the south, where minor potential erosion of the latter soil had occurred. On July 28, 2010 the PCB contaminated soil at 50 mg/kg or greater was loaded into a polyethylene lined roll-off and disposed of off-site (23.13 tons) as a hazardous waste (NYS waste code B007). Refer to Table 1.4.3-1 at the end of the SMP text for transportation and disposal information.

Post-excavation soil samples (PE-7A-37 North SW, East SW, South SW, West SW and Bottom) were collected on the same day at a frequency of one side wall (SW) sample per 30 linear feet and one bottom sample per 900 square feet per the Contract Documents and analyzed for TCL PCBs. The PCB results were <0.34 mg/kg to <0.36 mg/kg, except a detection of 1.5 mg/kg at sample location PE-7A-37 North SW. The PCB results were below the TAGM 4046 SCOs criteria outside of the landfill cover system/cap of 10 mg/kg for subsurface soil.

The soil sampling results are summarized in Table 1.4.3-3 at the end of the SMP text. The soil sampling locations are shown on the Temporary Sediment Trap #7A (East Basin) and Trap #7B Post-Excavation Soil Sampling Locations and PCB Results Map presented as Figure 6 in this SMP. The areas of additional soil excavation in the East Basin are shown on the East Basin (Temporary Sediment Trap #7A Area) Limits of Soil Excavation Map presented as Figure 8 in this SMP.

At completion of the over-excavation and additional soil excavation in the East Basin, EDB geotextile (Geotex 311 by Propex, Inc.) was installed over the excavated side walls and bottom of the East Basin and the excavated areas were backfilled with imported sand. The horizontal limit and vertical elevations of the EDB geotextile in the East Basin is shown on the New Excavation Delineation Barrier East Basin presented as Figure 9 in this SMP.

1.4.4 Site-Related Treatment Systems

No long-term treatment systems were installed as part of the site remedy.

1.4.5 Remaining Contamination

Other than the removal of the abandoned drums and PCB contaminated soil as described above, the remainder of contaminants (soil and landfill waste mass) were left in-place below the landfill cover system/cap.

The potential site related contaminants identified during the RI include select volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals and leachate indicator parameters (groundwater only) in various media as further described in the following subsections.

Table 1.4.5-1 from the ROD summarizes the results of surface soil, ash material, sediment and groundwater samples remaining at the site after completion of the Remedial Action that exceed SCOs.

1.4.5.1 Ash Material Outside Landfill Cover System/Cap

An ash, slag, glass and cinders material (ash material) mixed with sand remains below the surface outside of the landfill cover system/cap on the northern half of the western portion of the site and on the adjacent State of New York property (under control of NYSDOT). The area of the ash material is shown on the Environmental Easement Survey, Glens Falls Municipal Landfill at Luzerne Road (C.T. Male Drawing No. 21-543) presented as Figure 2 in this SMP. Select SVOCs were detected in the ash material samples slightly above their TAGM 4046 soil cleanup objective values, but SVOCs have

a tendency to adsorb to the media and not migrate, and SVOCs have not historically been detected in groundwater at the site. No PCBs were detected in the ash material samples above their NYSDEC TAGM 4046 soil cleanup objective value. Select metals (copper, mercury and zinc) were detected in the ash material samples above regulatory levels, but within the normal background range found in Eastern United States and therefore are potentially at background levels. Analysis of the ash material samples for hazardous waste characteristics showed that the ash material is not corrosive, ignitable, reactive or TCLP hazardous. The ash material is covered with a vegetative cover, and access to the area is restricted (within fenced-in area) minimizing the potential risk for exposure. The ash material area is depicted by the orange dashed line on the Environmental Easement Survey (C.T. Male Associates Drawing No. 21-543) which is included in Appendix B.

1.4.5.2 Subsurface Soil Below Landfill Cover System/Cap

Two PCBs (Aroclor 1248 and Aroclor 1254) were detected within some of the six subsurface soil samples collected from test pit excavations during the RI (refer to Section 1.3.3); however, the concentrations were below the NYSDEC TAGM 4046 recommended soil cleanup objective value of 10 mg/kg for subsurface soil and below the SCOs of 50 mg/kg for soil below the low permeability cover system/cap over the surface of the landfill.

Soil excavated from the area of the East Basin during the remedial action construction with PCB detections (Aroclor 1248) up to 42 mg/kg (refer to Section 1.4.3.4), which is below the SCOs of 50 mg/kg for soil below the low permeability cover system/cap over the surface of the landfill, was placed on the southern half of the east side slope of the landfill surface below the low permeability cover system/cap.

1.4.5.3 Groundwater

During the RI, select VOCs were detected in groundwater (five in one well, one in another well), but generally at concentrations only slightly above groundwater standards and within the same order of magnitude as the groundwater standards. PCBs were detected above groundwater standards in three of the existing monitoring wells, but

historical analytical data indicates the concentrations are decreasing. With the exception of aluminum, iron, magnesium, manganese and sodium, a few metals were detected above groundwater standards in a minority of the monitoring well locations, but generally only slightly above or within the same order of magnitude as the groundwater standards. The exceedances of aluminum, iron, magnesium, manganese and sodium occurred in both up-gradient and down-gradient monitoring well locations suggesting that these metal concentrations could be at background levels. A few leachate indicator parameters were detected above groundwater standards, but the exceedances generally occurred in both upgradient and downgradient monitoring well locations. Table 1.3-1, at the end of the SMP text, summarizes the historical, RI, and pre- and post-remedial action groundwater sampling results.

1.4.5.4 Explosive Landfill Gases and Soil Gas

During the RI, isolated areas of elevated explosive gases were detected below grade, primarily at higher elevations on top of the landfill waste mass and at a few perimeter locations on the southeast and south sides of the landfill. The elevated perimeter readings did not extend beyond the property boundary. No explosive gases were detected in the buildings at the adjacent transfer station. No elevated readings of explosive gases were detected at above grade sampling locations suggesting that significant levels of explosive gases were not entering the atmosphere on-site or off-site, or were dispersing or being degraded before accumulation occurred.

Several VOCs were detected in the soil gas samples and outside ambient air samples collected during the pre-remedial action soil vapor intrusion/soil gas study, the majority of which were at low levels. In general, the ambient air sample detections were similar to or lower than the detections in the soil gas samples. Table 1.3-2, at the end of the SMP text, summarizes the pre-remedial action soil gas and ambient are sampling results.

A soil gas venting layer including underground landfill gas collection points, underground gas collection lateral pipes, and gas venting structures have been installed to

provide an outlet for the landfill gases to be emitted to the air for dispersion instead of potentially traveling horizontally outside the limits of the landfill cover system/cap.

1.4.5.5 Subsurface Soil Below Excavation Delineation Barrier Geotextile

As discussed in Sections 1.4.3.2 and 1.4.3.4, existing soil with low levels of PCBs (less than 10 mg/kg) remains below the excavation delineation barrier (EDB) geotextile below the stormwater retention basin identified as the East Basin and below the area of former Temporary Sediment Trap #7B.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated soil, groundwater and landfill gases exist beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- 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 EC/ICs, such as the implementation of the Excavation Work Plan 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 EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

2.2.1.1 Low Permeability Cover System/Cap

Exposure to remaining contamination in the landfill waste mass at the site is prevented by a low permeability cover system/cap placed over the landfill waste mass at the site. This cover system is comprised of a gas venting layer (12-inch thick sand layer), low permeability barrier layer (40-mil textured linear low density polyethylene geomembrane liner), geocomposite drainage layer (tri-axial geonet with thermally bonded 6-ounce non-woven geotextile filter fabric on each side), barrier protection layer (18-inch thick silty sand layer), and topsoil and vegetative cover layer (6-inch thick topsoil layer with grass cover). The low permeability cover system/cap is more thoroughly described below:

Gas Venting Layer

The gas venting layer (GVL) consists of a gas venting soil layer with a filter layer below it and containing landfill gas collection lateral pipes and gas venting structures. The GVL is 12 inches thick and consists of a sand with a minimum permeability of 1 x 10^{-3} cm/sec and a maximum of 10 percent passing the No. 200 sieve. In accordance with Part 360, a filter layer consisting of a non-woven geotextile filter fabric was placed below the gas venting layer to maintain the integrity and prevent piping of the GVL sand into the underlying soil.

The gas venting layer also includes underground landfill gas collection points, underground gas collection lateral pipes, and gas venting structures to provide an outlet for the landfill gases to be emitted to the air for dispersion instead of potentially traveling horizontally outside the limits of the landfill. The underground gas collection points and gas venting structures consist of perforated vertical pipe extending from the GVL at least 5 feet into the refuse. At the gas venting structure locations, the vertical pipe is connected to a solid riser pipe at the top of the GVL to at least 3 feet above the final

cover grade elevation and fitted with a gooseneck cap and insect screen. The underground gas collection points are 6-inch diameter and the gas venting structures are 8-inch diameter, and both constructed of Schedule 40 PVC. The perforated portion of the underground gas collection point and gas venting structure within the refuse is backfilled with a porous stone (crushed stone). Fifteen underground gas collection points and three gas venting structures with risers that actually extend through the landfill cap above grade are present. The underground gas collection points are divided into three groups and each group connects to separate lateral pipes within the gas venting layer that connect to one of the gas venting structures that extends above grade. The lateral pipes are constructed of 6-inch diameter perforated and flexible high density polyethylene (HDPE) and surrounded by a filter sock. The location of the underground gas collection points, lateral pipes and gas venting structures is shown on the Environmental Easement Survey, Glens Falls Municipal Landfill at Luzerne Road (C.T. Male Drawing No. 21-543) presented as Figure 2 in this SMP.

Low Permeability Barrier Layer

The low permeability barrier layer is present above the gas venting layer and consists of a textured linear low density polyethylene (LLDPE) geomembrane liner manufactured by Poly-Flex, Inc. that is 40 mil thick per Part 360-2.13(r) requirements, and is chemically and physically resistant to materials likely to contact it at the landfill (i.e., waste). A textured geomembrane was used in lieu of a smooth geomembrane to increase the interface friction angle and resulting slope stability between the geomembrane and cover materials underlying/overlying it. A pipe boot constructed of 40 mil textured LLDPE is present where the three underground gas collection points and gas venting structures penetrate through the 40 mil textured LLDPE geomembrane liner. The boot flange is extrusion welded to the top surface of the geomembrane liner. The top of the boot is secured in place around the gas venting structure riser pipe with a gasket and stainless steel clamp.

Geocomposite Drainage Layer

The drainage layer is present above the geomembrane liner and consists of a double sided geocomposite comprised of a tri-axial geonet structure with thermally bonded 6-ounce non-woven filter fabric (geotextile) on both sides. The geocomposite product that was installed is TexDrain TD340 supplied by CETCO Lining Technologies. The drainage layer discharges into a perimeter underdrain below the perimeter drainage swale. The benefit of the drainage layer is to allow stormwater/precipitation that infiltrates through the topsoil layer and barrier protection layer to be drained from the surface of the geomembrane liner to eliminate the build up of water in the latter layers, to promote the flow of water into the perimeter drainage swale and underdrain below the drainage swale, to minimize the potential for erosion, and to provide greater slope stability.

Barrier Protection Layer

The barrier protection layer (BPL) is present above the geocomposite drainage layer. The BPL is 18 inches thick and consists of a silty sand of a gradation to prevent piping into the underlying geocomposite drainage layer.

Topsoil and Vegetative Cover Layer

The topsoil layer is 6 inches thick and hydroseeded and mulched to establish a grass vegetative cover.

The Excavation Work Plan that appears in Section 2.3.2 and in Appendix B outlines the procedures required to be implemented in the event the low permeability cover system/cap is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed.

Procedures for the inspection and monitoring of this low permeability cover system/cap are provided in the Site Monitoring Plan included in Section 3 of this SMP. The Site Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the site, occurs.

Procedures for operating and maintaining the low permeability cover system/cap are documented in the Operation and Maintenance Plan (Section 4 of this SMP).

2.2.1.2 Stormwater Management System

The stormwater management system for the site consists of a drainage swale and underdrain below the drainage swale around the perimeter of the landfill, three stormwater management basins (two retention basins, and one detention basin with spillway and outlet structure) located adjacent to the toe of the landfill slope, and four catch basins, five culvert pipes and one discharge pipe to convey the stormwater from the perimeter drainage swale and underdrain below the swale to the stormwater basins. The stormwater basins are identified as the Southwest Basin, off of the southwest area of the landfill; the East Basin, east of the central portion of the landfill; and the Northeast Basin, off of northeast corner of the landfill. The catch basins are identified as CB1 through CB4. The outlet structure associated with the detention basin is identified as CB5. The stormwater management system has been designed to maintain existing drainage patterns as much as possible, to continue the conveyance of upland watershed runoff, to reduce the runoff from the capped landfill onto adjacent properties to existing rates or less, and to control increases in stormwater runoff resulting from the project.

The purpose of the perimeter drainage swale and underdrain below the drainage swale is to promote drainage of the drainage and barrier protection layers and topsoil layer and minimize ponding, to provide an outlet for the landfill surface water runoff and divert it to stormwater management basins, to minimize the landfill surface water runoff and other stormwater run-on from infiltrating the area around the perimeter of the landfill, to mitigate potential stormwater quality impacts, and to prevent soil erosion and sedimentation resulting from stormwater runoff. The purpose of the stormwater management basins, including two retention basins and one detention basin, is to accept surface water runoff (no leachate, just stormwater from precipitation events) from the closed landfill via the drainage swale and culvert pipes and allow it to infiltrate into the ground or be discharged, as applicable, in a controlled manner.

The perimeter drainage swale is approximately 3.5 feet wide by 2-foot deep with 3H:1V side slopes. The perimeter underdrain below the drainage swale is constructed of No. 2 crushed stone surrounded by a non-woven geotextile drainage fabric with a 6-inch diameter perforated HDPE drain pipe at the bottom of the underdrain. The perimeter underdrain pipe and drainage swale discharge into concrete catch basins at four locations (CB1 through CB4), and discharge the flow into the stormwater management basins via 18-inch diameter HDPE culvert pipes. The catch basins are necessary to convey the flow from the perimeter underdrain pipe to the culvert pipes, which discharge to the stormwater basins. An additional 12-inch diameter HDPE culvert pipe is located at the low point on the west side of the landfill, where a catch basin was not feasible, to convey flow from the low point of the drainage swale to the stormwater basin. An additional 6-inch diameter HDPE discharge pipe is located between catch basins CB2 and CB3 on the west side of the landfill, to convey flow from the low point of the underdrain below the perimeter drainage swale to the stormwater basin.

The stormwater management system is designed to intercept the runoff from the landfill mound and direct it to one of three stormwater management basins. Two of these basins (Southwest Basin and East Basin) are retention basins and one of them is a detention basin (Northeast Basin). Each retention basin has 3H:1V side slopes, and the Southwest Basin and East Basin are 3 feet and 6 feet deep, respectively. The detention basin (Northeast Basin) has 3H:1V side slopes and is 5 feet deep. The retention basins are designed to hold the runoff and let it infiltrate back into the ground over time resulting in no surface discharge. The detention basin is designed to temporarily store the runoff and release it as a surface flow over time at a controlled rate. The detention basin has a spillway and outlet structure (CB5) designed to control the peak rate of flow.

An excavation delineation barrier (EDB) consisting of a non-woven geotextile (Geotex 311 by Propex, Inc.) is present beneath the side walls and bottom of the East Basin approximately two feet below the contour elevations shown on the Environmental Easement Survey, Glens Falls Municipal Landfill at Luzerne Road (C.T. Male Drawing No. 21-543) presented as Figure 2 in this SMP. The purpose of the EDB geotextile is to provide a demarcation barrier between the existing soils and imported materials.

Procedures for operating and maintaining the stormwater management system are documented in the Operation and Maintenance Plan (Section 4 of this SMP). The Excavation Work Plan that appears in Section 2.3.2 and in Appendix B outlines the procedures required to be implemented in the event the EDB geotextile is breached or penetrated, and any underlying low level PCB contaminated soil is disturbed.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness 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 6.6 of NYSDEC DER-10.

2.2.2.1 Low Permeability Cover System/Cap

The low permeability cover system/cap is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals until permission to discontinue is granted in writing by the NYSDEC.

2.2.2.2 Monitored Natural Attenuation

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. 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.

2.2.2.3 Explosive Gas Monitoring

Explosive gas monitoring activities will continue, as determined by the NYSDEC, until concentrations are found to be at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the

NYSDEC. If explosive gas levels become elevated to a level that is not acceptable to the NYSDEC, additional control measures will be evaluated.

2.3 INSTITUTIONAL CONTROLS

2.3.1 Description of Institutional Controls

A series of Institutional Controls is required by the ROD to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site. Adherence to these Institutional Controls on the site is required by the Environmental Easement (Appendix C) and will be implemented under this Site Management Plan. These Institutional Controls are:

- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in this SMP;
- Groundwater, explosive gas and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the 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 components 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 Controlled Property shall not be used for unrestricted use, residential use, restricted residential use, or developed and/or used in a manner that could result in contact with the landfill waste mass or explosive landfill gases, damage the integrity of the low permeability cover system/cap over the surface of the closed landfill, or damage and/or interfere with the operation of the stormwater management system for the closed and capped landfill;
- The Controlled Property may be used for its current use as a closed and capped landfill, and passive recreation use such as walking and hiking, which limits contact with the landfill waste mass and explosive gases; and
- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns.

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property as identified in the ROD are:

- The use of groundwater as a source of potable or process water is prohibited without necessary water quality treatment as determined by the NYSDOH.
- The property owner will complete and submit to NYSDEC an annual certification until the NYSDEC notifies the property owner in writing that this certification is no longer needed. This submittal will contain a certification that the institutional controls and engineering controls put in place pursuant to the ROD are still in place, have not been altered and are still effective. This

certification can be part of the regular reporting requirement by the Site Management Plan.

2.3.2 Excavation Work Plan

The site has been remediated and shall be maintained as a closed and capped landfill with associated stormwater management system. Any future intrusive work that will penetrate the low permeability cover system/cap, encounter or disturb the remaining contamination, including any modifications or repairs to the existing cover system, or encounter the excavation delineation barrier (EDB) geotextile on the east side of the site in the area of the stormwater retention basin (East Basin) and in the area of the Temporary Sediment Trap #7B during the remedial action construction (west and southwest of the East Basin) will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix B 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 with CAMP is attached as Appendix D to this SMP that is in current compliance with DER-10, 29 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 B-1 of the EWP. Future contractors will generate their own site specific HASP and CAMP based on the work to be performed. 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 submitted under the Inspections, Reporting and Certifications Plan (See Section 5).

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.

2.3.3 Soil Vapor Intrusion and Explosive Gas Evaluation

Prior to the construction of any enclosed structures located over areas that contain remaining contamination (landfill waste mass) and the potential for soil vapor intrusion (SVI) and/or explosive gases, a SVI and explosive gas evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors/explosive gases in the proposed structure. Alternatively, a SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting a SVI/explosive gas investigation or installing a 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" and 6NYCRR Part 360-2.17(f). Measures to be employed to mitigate potential vapor intrusion/explosive gases will be evaluated, selected, designed, installed, and maintained based on the SVI/explosive gas 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.

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

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Site Monitoring Plan schedule (Section 3.1.2). A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls 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; and
- Changes, or needed changes, to the remedial or monitoring system.

Inspections will be conducted in accordance with the procedures set forth in the Site Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this SMP (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- At least 60-day advance notice of any proposed changes in site use that are required under the terms of the State Assistance Contract (SAC), 6NYCRR Part 375, and/or Environmental Conservation Law.
- At least 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- 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 Engineering Controls 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 shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the Engineering Controls.

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

- 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 has been provided with a copy of the State Assistance Contract (SAC), and all approved work plans and reports, including this SMP.
- 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.

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted (refer to Table 2.5.1-1 below). Prompt contact should also be made to the Superintendent of the Department of Public Works and to the City Engineer at the City of Glens Falls (refer to Table 2.5.1-2 below). These emergency contact lists must be maintained in an easily accessible location at the offices of City of Glens Falls Department of Public Works and City Engineer.

Table 2.5.1-1: Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center (UDig NY:	811 or (800) 272-4480 (3 business day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline:	(800) 457-7362
24-Hour Emergency Contact for City of Glens Falls Department of Public Works:	(518) 761-3840 (Glens Falls Police Department)
Additional 24-Hour Emergency Contact for City of Glens Falls:	(518) 761-3857

Table 2.5.1-2: Other Contact Numbers

Superintendent of the Department of Public Works at the City of Glens Falls	(518) 761-3834 (office)
City Engineer at the City of Glens Falls	(518) 761-3850 Ext. 124 (office); (518) 376-7207 (cell)
C.T. Male Associates	(518) 786-7400 (office)

* Note: Contact numbers subject to change and should be updated as necessary.

2.5.2 Map and Directions to Nearest Health Facility

Site Location: Luzerne Road, Glens Falls, New York 12801

Nearest Hospital Name: Glens Falls Hospital

Hospital Location: 100 Park Street, Glens Falls, New York 12801

Hospital Telephone: (518) 792-3151

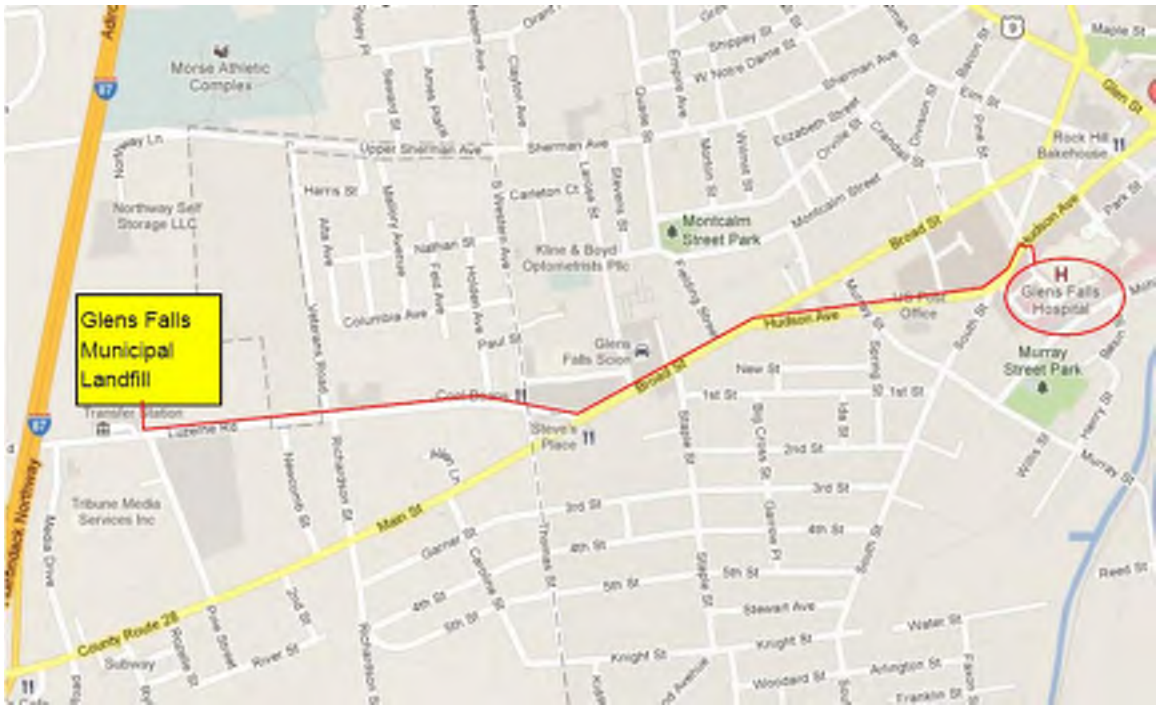
Directions to the Hospital:

1. Head east on Luzerne Road toward Newcomb Street, go 0.7 miles.
2. Turn slight left at Broad Street, go 0.3 miles.
3. Turn slight right at Hudson Avenue, go 0.6 miles.
4. Turn right at School Street, go 256 feet.
5. Turn right at Park Street, go 85 feet.

Total Distance: 1.6 miles.

Total Estimated Time: 5 minutes.

Map Showing Route from the site to the Hospital:



2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 2.5.1-1). The list will also be posted prominently at the offices of City of Glens Falls Department of Public Works and City Engineer, and made readily available to all personnel at all times.

In the event of a spill, do not attempt to contain if spill cannot be contained safely. Immediately contact the NYSDEC spills hotline at (800) 457-7362.

In the event of an emergency evacuation, the site can be evacuated via Luzerne Road to the south or Veterans Road to the east.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Site Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, for monitoring the low permeability cover system/cap, and for monitoring all affected site media identified below. Monitoring of other Engineering Controls is described in Section 4, Operation and Maintenance Plan. This Site Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Site Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, landfill explosive gas, etc.);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards;
- 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 Site Monitoring 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.

Quarterly monitoring of the performance of the remedy and overall reduction in contamination on-site and off-site will be conducted for the first two years. The frequency thereafter will be determined by NYSDEC, based on monitoring reduction requests submitted by the City. Trends in contaminant levels in groundwater and/or explosive gas in the affected areas will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in Table 3.1.2-1 below and outlined in detail in Section 3.3.

The Part 360 regulations require that monitoring, operation and maintenance be performed for 30 years, unless specific approval is obtained from NYSDEC to reduce this requirement. For those landfills that closed prior to October 9, 1993 (which applies to the Glens Falls Municipal Landfill at Luzerne Road), the Post-Closure Monitoring II Specific Variance in the Local Government Regulatory Relief Initiative document dated February 26, 1993 allows the frequency of monitoring to be reduced after two baseline parameters sampling events. The frequency can be reduced from annually to once every three years for baseline parameters and from quarterly to twice per year for routine parameters as long as certain conditions are met. Therefore, the groundwater monitoring is anticipated to be able to be evaluated, including the number of monitoring wells that are sampled, after two baseline sampling events and reduced as approved by NYSDEC.

Table 3.1.2-1: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Explosive Gas	Quarterly	Soil Gas and Ambient Air	Percent lower explosive limit (% LEL) for methane and parts per million (ppm) of hydrogen sulfide.
Water Quality	Quarterly	Groundwater	6NYCRR Part 360 baseline parameters annually, 6NYCRR Part 360 routine parameters during three quarters, and TCL PCBs semi-annually.
Landfill Inspections	Quarterly	Infrastructure	Visual observation of landfill cover system/cap, vegetative cover, repairs completed since the last inspection, gas venting structures, and monitoring wells.
Stormwater Management System**	Two times per year and after major storm events	Stormwater Infrastructure	Visual observation of catch basins, end sections, drainage culverts, stormwater basin side slopes, detention basin outlet structure, and sediment buildup in basins.

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

** The Post Landfill Closure Operation and Maintenance Manual for Stormwater Management System is included in Appendix E and is further described in Section 4.

3.2 LOW PERMEABILITY COVER SYSTEM/CAP MONITORING

Inspections of the landfill will be initially conducted quarterly during water quality monitoring events. Inspection observations shall be recorded on the Site-Wide Inspection Form, and shall include the date, identity of inspector, status of landfill cover, description of vegetative cover condition, repairs needed and repairs completed since the last inspection. During the inspections, the landfill cover system/cap and vegetative cover shall be inspected for burrows created by animals, sparsely vegetated areas, ponding, depressions, leachate seeps, signs of erosion or any other notable damage. The gas venting structures shall be inspected for stability and insect screens shall be checked for blockages. The monitoring wells shall also be inspected for any damage and their condition recorded.

3.3 MEDIA MONITORING PROGRAM

3.3.1 Post-Closure Groundwater Monitoring

3.3.1.1 General, Monitoring Well Network and Laboratory Analyses

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy.

The network of monitoring wells has been installed to monitor both up-gradient and down-gradient groundwater conditions at the site. The network of on-site and off-site wells has been designed based on the following criteria:

Monitoring wells MW-101-1 through MW-101-5 were wells installed at the site in 1985 as part of site investigations prior to the RI. Well MW-101-1 is located down-gradient of the landfill waste mass to the south southeast, just north of Luzerne Road. Well MW-101-2 was located southwest of the landfill waste mass just north of Luzerne Road and was considered a cross-gradient location. Well MW-101-2 was abandoned as part of the remedial action construction (closure and capping of landfill) in December 2009 due to its location in the retention basin constructed adjacent to the landfill and no longer exists. Based on historical groundwater sampling results, well MW-101-2 was not replaced with NYSDEC concurrence. Well MW-101-3 is located west of the northern portion of the landfill waste mass between the site and Interstate 87 and is considered an up-gradient location. Wells MW-101-4 and MW-101-5 are located in down-gradient positions relative to the landfill waste mass on the east side of the site.

Three additional monitoring well pairs and two additional shallow monitoring wells (shallow groundwater table wells) were installed as part of the RI. Each monitoring well pair consisted of solid and screened PVC casing installed at approximately 15 to 25 feet below grade (shallow groundwater table well) and approximately 40 to 50 feet below grade (intermediate well). The shallow well of the pair was installed within the first water bearing unit, similar to the existing monitoring wells, and the top of the intermediate well's screened interval was positioned a minimum of 25 feet below the

bottom of the shallow well's screened interval. Monitoring wells were not proposed at deep levels (approximately 100 to 130 feet below grade) since analytical data from sampling the monitoring wells in the area of the neighboring Luzerne Road Site suggested no site specific contaminants in the deeper portion of the aquifer.

The RI monitoring wells were designated MW-101-6 through MW-101-10 followed by a "S" for shallow well or an "I" for intermediate. The rational for selecting the locations of the monitoring well pairs was based primarily on historical analytical results of groundwater samples collected from existing monitoring wells MW-101-1 through MW-101-5. Listed below is brief description for this rational:

MW-101-6S & 6I: This pair of wells (i.e., shallow and intermediate) are cross-gradient to the landfill based on the inferred groundwater flow direction. Groundwater samples collected from this well pair would assist in delineating PCB or leachate contamination, if any, to the groundwater from the landfill waste mass. Additionally, the location of this well pair would possibly determine if the low lying area northeast of the landfill was affecting the groundwater flow pattern.

MW-101-7S & 7I: Existing monitoring well MW-101-5 had been reported to have PCBs (in groundwater samples) at concentrations above groundwater standards. To further delineate the potential source of this groundwater contamination this well pair was placed closer to the landfill, north-northwest of existing monitoring well MW-101-5 and west-southwest of existing monitoring well MW-101-4, on the down-gradient side of the landfill.

MW-101-8S & 8I / MW-101-8S(R) & 8I(R): Existing monitoring well MW-101-1 had been reported to have PCBs (in groundwater samples) at relatively lower concentrations than MW-101-5. This existing well is located near the transfer station and its activities, as noted by others, may have affected the quality of the groundwater from this well. As such, the MW-101-8S and 8I well pair were placed further north-northwest of well MW-101-1, but staying close to the down-gradient side of the landfill. The groundwater sampling/analysis would assist in evaluating potential PCB groundwater contamination down-gradient of the landfill. Monitoring wells MW-101-8S and MW-101-8I were

abandoned in December 2009 as part of the remedial action construction, and were replaced in-kind by monitoring wells MW-101-8S(R) and MW-101-8I(R) in October 2011. The replacement monitoring wells were installed slightly northeast of the original well locations.

MW-101-9S / MW-2S: Monitoring well MW-101-9S was installed down-gradient of the landfill waste mass on the east side of the landfill to monitor groundwater quality down-gradient of the central portion of the landfill. Monitoring well MW-101-9S was abandoned as part of the Luzerne Road Site remedial action construction and no longer exists. It was not replaced due to the close proximity of monitoring well MW-2S, associated with the Luzerne Road Site, to where MW-101-9S was located. Monitoring well MW-2S will be sampled in the future in the place of well MW-101-9S.

MW-101-10S / MW-101-10S(R): Monitoring well MW-101-10S was located on the west side of the landfill and is considered up-gradient of the landfill waste mass based on the inferred groundwater flow direction. Groundwater samples collected from this location would either provide additional data relative to the potential for mounding of leachate within the landfill and its effects on the surrounding water quality or provide up-gradient water quality data for comparison. Monitoring well MW-101-10S was abandoned in December 2009 as part of the remedial action construction, and was replaced in-kind by monitoring well MW-101-10S(R) in October 2011. The replacement monitoring well was installed slightly southwest from the original well location.

The groundwater monitoring wells that will be sampled for the first two years following the completion of the remedial action construction include MW-101-1, MW-101-3, MW-101-4, MW-101-5, MW-101-6S, MW-101-6I, MW-101-7S, MW-101-7I, MW-101-8S(R), MW-101-8I(R), MW-101-10S(R) and MW-2S, of the neighboring Luzerne Road Site. A summary of the monitoring wells and their surveyed elevations is presented in Table 3.3.1-1 at the end of the SMP text. The location of the monitoring wells is shown on the Groundwater Monitoring Well Network Map presented as Figure 10 in this SMP. Monitoring well construction logs for the RI wells and the replacement monitoring wells are included in Appendix F.

The groundwater samples will be analyzed for the Part 360 baseline parameters on an annual basis (during one quarter), for the Part 360 routine parameters on a quarterly basis (during three quarters) and for the target compound list (TCL) PCBs on a semi-annual basis (during two quarters). The list of routine and baseline parameters are those in the Water Quality Analysis Table of the 6NYCRR Part 360 regulations effective October 9, 1993. If the field-measured turbidity is greater than 50 NTUs, both filtered and unfiltered samples will be collected and submitted to the laboratory for dissolved and total metals analyses.

The analyses will be performed in accordance with the NYSDEC Analytical Services Protocol (ASP, revised June 2000 or subsequent revision). The laboratory analyses will be performed by a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory. The laboratory will prepare an ASP Category B data deliverable package for baseline parameters and TCL PCBs sampling events, and an ASP Category A data deliverable package for the routine parameters sampling events. Refer to Section 3.5, Monitoring Quality Assurance/Quality Control, for analytical methods, holding times and quality assurance/quality control procedures.

In accordance with the Post-Closure Monitoring II Specific Variance in the Local Government Regulatory Relief Initiative document dated February 26, 1993, the groundwater monitoring is anticipated to be able to be evaluated, including the number of monitoring wells that are sampled, after two baseline sampling events and reduced as approved by NYSDEC. The sampling frequency may be modified with the approval of the NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

3.3.1.2 Sampling Protocol

A. General Sampling Procedures

During groundwater sampling it is important to follow strict acceptable protocol during the collection and transportation of groundwater samples. This minimizes the potential for sample variation from well to well due to sampling and transportation

techniques. Quality control measures will be instituted as discussed in Section 3.5 of this SMP as a check on the procedures being utilized so that the quality of the data can be assessed.

Prior to sampling the water level in the well will be measured, and the well will be purged and allowed to recover to at least 90% of static conditions. The wells will be purged with bailers, peristaltic pump or submersible pump depending on the depth of the monitoring well. Groundwater samples will be taken for field and laboratory analyses. The field parameters to be measured are pH, temperature, turbidity, oxidation-reduction potential, and specific conductance. All pertinent groundwater sampling information will be recorded on a Groundwater Services Field Log form (refer Appendix G for blank form). A separate log will be completed for each monitoring well sampled. The well sampling log will serve as the inspection form for the groundwater monitoring well network. Logs will be dated and include the name of the person making the entries, and will be submitted to the project manager for inclusion in the project files. The following information will be included on the log forms:

1. Project name and location.
2. Date and times.
3. Monitoring well identification number.
4. Bailer or pump type and identification number, if any.
5. Well purging procedure and data.
6. Physical characteristics of samples (i.e., color, odor, etc.).
7. Field analyses results.
8. Name of sampler(s).
9. Recovery times of wells.
10. Any additional pertinent observations/information including well integrity.

An Environmental Services Field Log will also be completed for the groundwater sampling event.

The sample containers and preservatives to be used for the sampling must conform to NYSDEC ASP (revised June 2000 or subsequent revision) requirements and analytical procedures. Only new pre-cleaned laboratory provided sample containers and caps will be used for sample collection/analyses. All sample containers required to be fixed with a preservative will be prepared by the laboratory before each sampling event. The container type, cap type and preservative requirements for the analytical parameters to be analyzed are summarized in Table 3.5.3-1 in Section 3.5.3 of this SMP.

Sample labels will be prepared prior to sampling and affixed to the sample containers. The client, project name, site location, matrix, sample type (grab/composite), preservative and laboratory analyses to be performed will be recorded on the sample labels prior to sampling. The sample location (i.e., monitoring well ID), date, sampler's initials and time will be filled out on the sample label at the time of sampling.

Upon arrival at the sampling location, the well will be observed for any damage. Clean polyethylene sheeting will be placed around the well to protect purging and sampling equipment from contamination, and a hole cut in the poly to access the well. The cover of the stick-up protective casing will be cleared of any debris/vegetation and unbolted or unlocked. The cap will be removed and a PID meter reading will be collected of the well head. This requirement may be omitted on a per well location basis if no measurable volatile organic vapors are detected at a well location during two previous groundwater sampling events. The water level in the well will then be measured.

B. Measuring the Water Level

Prior to sampling and purging, static water heights will be measured using a water level indicator to determine the standing water column height. When necessary for groundwater mapping purposes, a full round of water levels will be taken prior to initiating the water sampling. The water column height and depth of the well are used to calculate the well water volume. Non-vented well caps will be removed for a period of

ten minutes to allow the water column to reach static conditions prior to taking the water level measurements.

Water levels will be measured in the monitoring wells using a water level indicator probe. The water levels will be measured from the surveyed reference point to the nearest 0.01 foot. Water levels will be measured progressively from up-gradient monitoring wells to down-gradient monitoring wells, attempting to measure water levels from the cleanest well to the dirtiest well, if known. The water depth levels and reference elevations determined from the monitoring well survey will be recorded on a Water Level Record form and the water table elevations calculated.

To avoid possible cross contamination of the wells, the water level indicator will be decontaminated prior to and following the water measurement of individual wells. The water level indicator will be decontaminated with a non-phosphate detergent wash and a tap water rinse, then rinsing it with deionized or distilled water.

C. Well Purging Procedures

Prior to sampling of the groundwater, it is necessary to purge the wells. Purging of the wells allows for a representative sample to be taken from the screened internal of the well by removing stagnant water from the well.

Three to five well volumes of the standing water will be removed from the well. The volume of standing water in the well is calculated by subtracting the water level height from the well depth measurement, and multiplying this value by a conversion factor. The conversion factor is based on the well casing diameter and converts linear feet of water into gallons. In cases where the water recharges at a slow rate, the well will be purged dry when possible.

New clean polyethylene bailers, a peristaltic pump with new clean disposable polyethylene tubing, or a field-cleaned submersible pump (i.e., Grundfos Redi-Flo2) with new clean disposable tubing will be used to purge the wells. The purging and sampling methods used will be documented on the Groundwater Services Field Log form. When purging and sampling with a bailer, a new clean piece of polypropylene rope will be used

at each individual well. Physical observations of the purge water will be noted and recorded on the Groundwater Services Field Log form. The actual quantity of purge water removed from the well will be measured by using a bucket graduated in gallons, and the volume will be recorded. Once purging is complete, the bailer or tubing will be removed from the well and placed on the clean polyethylene sheeting adjacent to the well until completion of the groundwater sampling.

The purge water from the monitoring wells will be discharged to the ground surrounding the well and allowed to infiltrate the soil, unless a sheen or non-aqueous phase liquid is observed. If a sheen or non-aqueous phase liquid is observed, then the purge water will be collected and placed in NYSDOT approved 55-gallon drum(s) and managed as discussed in Section 3.3.1.6 of this SMP.

D. Sample Collection

Prior to sample collection, the wells will be allowed to recover to at least 90% of their initial static water level. Slow recharging wells will be allowed to recover for a period of two hours and sampled within three hours of completing purging. Recovery times and water depths will be recorded on the Groundwater Services Field Log form.

The sample will be collected using a new clean disposable bailer or a low flow pump (inorganic parameters only) that was dedicated to the well for the sampling event. A new pair of clean disposable gloves will be used to handle the sampling equipment and containers, and collect the samples at each sampling location.

The disposable bailer will be lowered slowly into the well to minimize the aeration of the samples. Volatile samples will be collected first, followed by field parameters (refer to Section 3.3.1.2-E) and then in decreasing order of the volatility of the parameters being analyzed.

In order to insure the integrity of samples, sample containers must be filled properly. The following sections contain general procedures for sampling and specific procedures for sampling volatile organic compounds. Care shall be taken in sampling to assure that analytical results represent the actual sample composition.

General Sampling:

1. Don't remove caps until the actual sampling time and only long enough to fill the container.
2. Identify every container by filling out the label with all the required data.
3. Fill all containers completely without overfilling.
4. Some bottles may contain a fixative which should not be rinsed out of the bottle. Read the sample label treatment and fixative section to determine if a preservative/fixative has been added. Be careful not to contact fixatives with skin or clothing. If this should occur, rinse liberally with water and seek medical attention.
5. After the sample is taken and sealed, wipe the container with a paper towel and place the container in a cooler with ice packs or bagged ice, to maintain the cooler at 4°C.
6. Complete the Groundwater Services Field Log and Chain of Custody Record forms.
7. Deliver or ship samples to the laboratory within 24 hours or as soon as possible, but not exceeding 48 hours.

Sampling for Volatile Organic Compounds:

1. Samples are to be collected in glass containers having a total volume in excess of 40 ml with open-top screw caps with Teflon-faced silicone septa. Sample containers could have hydrochloric acid (HCL) added to them as a preservative. This preservative must not be rinsed out.
2. A transport blank will be prepared by the laboratory from organic-free water and carried through the sampling and handling procedure. It will serve as a check for transport and container contamination.
3. Fill sample container slowly to minimize aeration of the sample, until a curved meniscus is observed over the bottle rim.

4. Float the septa, Teflon™ side down on the liquid meniscus. The Teflon™ side is the thin layer observed when viewing the septum from the side horizontally.

5. Carefully set on septum, expelling excess sample and being careful to exclude air. Then screw open-top cap down. Using the index finger to push the center of the cap downward usually assists in expelling excess sample and air.

6. Check for a good seal by inverting bottle and tapping and checking for visible air bubbles. If air bubbles are visible or there is a bad seal, remove cap and add additional sample and repeat steps 4 to 6.

7. Groundwater samples for volatile analysis may be taken in duplicate, triplicate or as required by the analytical laboratory.

At completion of the sampling the well cap will be put in place, closed; and the cover to the protective stick-up casing will be bolted and/or locked in place. The rope, gloves, tubing and sheeting will be managed as solid waste as discussed in Section 3.3.1.6 of this SMP.

E. Field Analyses

The field analyses include pH, temperature, specific conductivity, turbidity, and oxidation-reduction potential. The field analyses will be measured in the field since these constituents change during storage. A minimum 40 ml sample will be collected and placed in clean polyethylene or glass containers for field analysis, or in a new clean disposable plastic cup. The containers will be covered if the measurements are not recorded immediately. All field analyses readings will be recorded on a Groundwater Services Field Log form.

The conductivity, pH and temperature of a sample are measured with a single portable unit capable of measuring all three parameters. The portable unit automatically adjusts to compensate for the temperature of the sample. The temperature, pH and conductivity are displayed on the unit and will be recorded when the instrument reading stabilizes for each parameter.

The turbidity of the field samples is measured with a turbidity meter. A portion of the sample will be poured into the instrument's dedicated VOA vial. The outside of the VOA vial is wiped with a paper towel and inserted in the instrument. The reading is recorded upon stabilization.

The oxidation-reduction potential (ORP) is measured on an instrument typically equipped to measure other field parameters. Regardless of the instrument, the method of sample analysis is similar and the reading is recorded after inserting a probe into the sample and recording the stabilized reading.

All of the field instrumentation will be calibrated to known standards prior to start of field activities in accordance with the manufacture's recommendations.

F. Sample Handling and Chain of Custody Procedure

A chain of custody record will be completed by the sampler in the field. The sampler will be responsible for retaining possession of the samples until they are delivered to the laboratory, to a courier or overnight common carrier for shipment to the laboratory. When the samples are released from the custody of the sampling personnel, the chain of custody will be signed by both relinquishing and receiving parties with the date and time indicated. A copy of the chain of custody form will be retained by the sampler for inclusion in the project files and the original form will accompany the shipment. The chain of custody will then be signed by the relinquishing party and receiving laboratory personnel when the samples are received at the laboratory.

If samples are shipped, prior to shipment the chain of custody form will be placed in the cooler, a custody seal signed and dated by the sampler will be affixed to the cooler, and the cooler will be securely wrapped with clear tape and to protect it from tampering.

3.3.1.3 Decontamination Procedures

Well purging and sampling equipment including water level indicator, field parameter meters, submersible pump, etc. will be cleaned prior to use, in between each sample/measurement and at completion of the work using the following procedures:

1. Remove any excess material remaining on the equipment, as applicable.
2. Prepare a solution of tap water and non-phosphate detergent in a wash bucket, and scrub the equipment with a brush to remove any adhering particles.
3. Rinse the equipment with copious amounts of tap water.
4. Rinse the equipment with deionized or distilled water.
5. Place clean equipment on clean polyethylene sheeting, or wrap in aluminum foil if the equipment will not be immediately used for sampling.
6. New disposable gloves will be worn when cleaning and handling the equipment to avoid contamination.
7. The water in the wash and rinse buckets will be changed frequently to avoid cross contamination.

A minimum amount of decontamination liquid is anticipated to be generated during groundwater purging and sampling. The decontamination liquid will be discharged to the ground surrounding the well and allowed to infiltrate the soil.

3.3.1.4 Monitoring Well Repairs, Replacement and Decommissioning

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 (as per the Media Monitoring Program), 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 "CP-43: 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.

If new or replacement monitoring wells are necessary, the borehole will be advanced utilizing a drill-rig. The borehole will be advanced until groundwater is encountered and continued at least 5 feet into the water table, and converted to a monitoring well. During advancement of the boreholes, soil samples (either standard or continuous) will be collected with the split-spoon for soil classification purposes, if required by the NYSDEC. If soil sampling is conducted, the soils will be classified according to the Unified Soil Classification System. Observations will be recorded on Subsurface Exploration Logs.

The monitoring well will be constructed using 2-inch Schedule 40 PVC threaded pipe, with a 10-foot screen (0.010 slot size), a bottom plug and a push-on well cap. The bottom of the well screen will be placed at least five feet into the water table to allow for groundwater fluctuations. Any void space below the bottom of the screen will be filled with #1 silica-quartz sand. The sand pack around the screen will extend approximately two feet above the top of the screen, utilizing #0 silica-quartz sand. Above the #0 sand pack an approximate 0.5 to 1-foot layer of #000 silica-quartz sand will be placed. Above the sand pack, a 3-foot bentonite seal will be placed. Above the bentonite seal up to the surface a 20:1 cement/bentonite grout mixture will be placed. The PVC stick-up above grade will be enclosed in a steel guard pipe set in concrete, and a lock placed on the guard pipe. Well construction details will be recorded on a Monitoring Well Construction Log.

All drilling equipment (i.e., augers, casing, tools, etc.) will be decontaminated prior to the commencement of drilling activities, between locations and at completion of work using a high pressure - high temperature washer (i.e., steam cleaner). The decontamination water will be containerized in NYSDOT approved 55-gallon drums and managed as discussed in Section 3.3.1.6 of this SMP.

3.3.1.5 Monitoring Well Development

Development of new monitoring wells will be necessary to remove sediments (silt, clay, and fine sand) from the well screen, well bottom, sand pack, and formation. This will increase the hydraulic conductivity immediately around the well, thus increasing the well yield for sampling. Just as importantly, it will decrease turbidity that could potentially interfere with chemical analysis of the groundwater samples. The wells will be developed by surging, bailing, and pumping. The back and forth flow created within the screened interval dislodges fine sediments in the formation, sand pack and screen, suspending fines so they can be removed.

Reasonable means will be taken to develop the wells to a turbidity of 50 NTUs or less, however, if the site soils are composed of a high percentage of silt and/or clay, a turbidity value of 50 NTU or less will not likely be achieved.

The wells will be surged using a new clean disposable polyethylene bailer attached to new polypropylene rope. The surging will be accomplished by rapidly raising and lowering the bailer within the screened interval, and then utilizing the bailer to remove sediment and silt within the water column. If the over pumping method is utilized, new clean polyethylene tubing attached to a peristaltic pump or a field-cleaned submersible pump (i.e., Grundfos Redi-Flo2) will be oscillated within the screened interval of the monitoring well while water is removed with the pump. The bailer and/or peristaltic pump will be used to obtain an initial water sample to check the turbidity, pH, specific conductivity and temperature of the well water prior to the start of well development, and during well development to monitor whether the well is stabilizing or not. The color, odor, and sand and silt content of the removed water will also be noted. Silt and sediment will be removed from the bottom of the well utilizing the bailer and/or pump.

The rope, gloves, tubing and sheeting will be managed as solid waste as discussed in Section 3.3.1.6. The development water evacuated from the monitoring wells will be temporarily stored on-site in labeled 55 gallon drums. The drums will be managed as discussed in Section 3.3.1.6 of this SMP.

3.3.1.6 Disposal of Wastes

Wastes generated from work on the site will consist of decontamination water, evacuated soils for installation of monitoring wells, monitoring well development water, groundwater sampling purge water, disposable bailers, polypropylene rope, polyethylene tubing, polyethylene sheeting, and spent personal protective equipment. The wastes will be handled and disposed of as follows:

Decontamination water generated from cleaning of equipment that comes into contact with soil and groundwater during installation of new monitoring wells, and monitoring well development water for new monitoring wells that are installed will be collected and stored in NYSDOT approved 55-gallon drums unless approved otherwise by the NYSDEC. Each drum will be affixed with a non-hazardous waste label that will be completed with owner and site information, and the contents of the drum. The well(s) designation for the contained development water will also be clearly illustrated on the label.

Soils evacuated for the installation of new monitoring wells will be stored in NYSDOT approved 55-gallon drums and the drums labeled as described previously, unless approved otherwise by the NYSDEC.

The purge water from the monitoring wells during groundwater sampling will be discharged to the ground surrounding the well and allowed to infiltrate the soil, unless a sheen or non-aqueous phase liquid is observed. If a sheen or non-aqueous phase liquid is observed, then the purge water will be collected and placed in NYSDOT approved 55-gallon drums, and the drums labeled as described previously.

Personal protective equipment (PPE) and expendable materials to be used during the completion of the field work tasks will likely include gloves, paper towels, plastic sheeting, and disposable sampling equipment (bailers, tubing, rope, etc.). These materials will be managed and properly disposed of off-site as solid waste.

Waste characterization profiles will be completed for the drummed wastes and submitted to the treatment, storage or disposal facility (TSDF), as applicable, for

processing. A copy of the TSDFs operating permit and the transporters' 6 NYCRR Part 364 transporter permit will be obtained and reviewed prior to any shipments of waste from the site to document the appropriate permits are in place prior to waste being removed from the site.

The drummed wastes generated will be removed from the site, transported by a 6NYCRR Part 364 permitted waste transporter and disposed of at a treatment, storage or disposal facility permitted to accept the wastes being delivered. A waste manifest or bill of lading will be utilized for each shipment of waste.

3.3.2 Post-Closure Explosive Gas Monitoring

Post-closure explosive gas monitoring will be conducted as described in Part 360-2.15(a)(2) and 2.17(f), to determine if the level of explosive gasses is over 25% of the lower explosive limit (LEL) in any structure or over the LEL at the property boundary. Initially, post-closure explosive gas monitoring will be conducted on a quarterly basis in accordance with Part 360-2.15(k)(4).

Explosive gas monitoring will be performed with a Multi-Gas Monitor manufactured by RAE Systems, Inc. or equivalent. The unit shall be capable of measuring % lower explosive limit (LEL) for methane and parts per million (ppm) of hydrogen sulfide. Percent LEL for methane denotes the level of explosive gas present that is less than or equal to the equivalent amount of methane explosive potential. The multi-gas monitor shall be calibrated according to the manufacturer's recommendations prior to use each day.

Explosive gas levels (% LEL) will be measured and recorded in the ambient air at the breathing zone around the perimeter of the landfill. In accordance with Part 360-2.15(a)(2), gas levels will also be measured below grade at points located approximately every 100 feet around the perimeter of the landfill if temporary points are used, and approximately every 400 feet around the perimeter of the landfill if permanent points are installed, just off the landfill final cover system. Permanent points are not present at the site. At each point, the levels of explosive gasses (% LEL) and hydrogen sulfide will be

measured and recorded on an Explosive Gas Sampling Form (refer to Appendix G for blank form). The depth of the subsurface samples will be approximately 1.5 feet below grade.

If temporary points are used, sampling will be conducted by advancing a slam bar or equivalent to a depth of approximately 2 feet below grade. The slam bar or equivalent will be removed, and a hollow tube will be inserted into the void created, with the bottom of the tube at approximately 1.5 feet below grade. A surface seal will be created using surrounding soils. Readings will be taken by attaching the Multi-Gas Monitor to the tube inserted into the ground, and allowing the meter to pump for a few minutes to ensure the air being drawn through the meter is from the subsurface, and then the readings on the meter will be recorded. The tubing inserted in the ground will then be removed.

If permanent points are installed, they will be completed by using a hand auger or equivalent method to remove soils down to approximately 1.5 feet below grade. An approximately 2.5-foot section of PVC pipe with a slotted/screened bottom end will be inserted into the ground down to approximately 1.5 feet below grade. Once the PVC is in place, any remaining void space around the PVC will be filled with soils removed during the installation of the point. A PVC slip cap will be placed on the top of the PVC pipe, to be removed when taking measurements. Readings will be taken by removing the PVC slip cap from the point, inserting the probe into the PVC pipe and recording the readings. The PVC cap will then be left off for approximately 30 minutes to vent the point, then placed back on the PVC pipe. The PVC cap will be left on for approximately 60 minutes, then removed, the probe inserted into the PVC pipe and the readings recorded. After the monitoring is complete, the PVC cap will be placed back on the permanent point.

Readings will also be taken at all monitoring wells, and any occupied structures on or near the site such as at the transfer station adjacent to the south side of the site. Readings at the monitoring wells will be collected by removing the PVC slip cap from the well riser pipe, inserting the probe into the PVC pipe and recording the readings. Readings inside any occupied buildings at the adjacent transfer station will be taken at floor, breathing zone and ceiling levels.

The results of the explosive gas monitoring will be recorded on an Explosive Gas Monitoring Form and reported to NYSDEC in the Periodic Review Report. In the event that levels over 25% of the LEL are detected in any structure, or over the LEL in the subsurface or ambient air at the property boundary, the results will be reported to the NYSDEC within seven days, along with a description of the steps to protect human health, and the results will be evaluated to determine what additional action is needed in accordance with Part 360-2.17(f)(3). Measures taken to address methane gas releases would depend on the location of releases, the extent of area affected and the local geological relief.

3.4 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, a Site-Wide Inspection Form will be completed (refer to Appendix G for blank form). 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;
- 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 (Section 4); and
- Confirm that site records are up to date.

3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

3.5.1 General

All sampling and analyses will be performed following the quality assurance/quality control procedures described in this Section 3.5 which include:

- Quality Control Checks:
    - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
    - Laboratory QC and checks.
- 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.
- Quality Control Sample Collection Procedures.
- 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 USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures:
    - Sample holding times will be in accordance with the NYSDEC ASP requirements.

  - Laboratory reporting will be in accordance with Part 360 and NYSDEC ASP requirements.

- Preparation of a Data Usability Summary Report (DUSR), 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.

The overall quality assurance/quality control of the sampling activities will include project management, coordination, and scheduling of in-house activities and subcontractors. The laboratory will be certified by the NYSDOH Environmental Laboratory Approval Program (ELAP).

3.5.2 Quality Control Checks

To monitor and document the integrity of such factors as sample variability, sampling equipment cleanliness, sampling technique, analytical reproducibility and sample handling which can affect data quality, several field quality control checks will be implemented. These will include taking equipment blanks after the sampling equipment has been decontaminated to check for cross contamination and equipment cleanliness; taking field duplicate samples to monitor analytical precision/reproducibility and sampling technique; and using site specific samples for matrix spike/matrix spike (MS/MSD) duplicate analysis by the laboratory. The MS/MSD samples are used to measure percent recoveries and the relative percent difference, and used to determine if matrix interference affected the method. Transport blanks will also be prepared when VOCs analysis is to be performed. The transport blanks are taken to monitor whether the samples have been contaminated during transport, as a result of handling in the field, during shipment or during storage in the laboratory.

For this project the field Quality Control (QC) checks during groundwater sampling will consist of one equipment blank (only if new disposable sampling equipment in not utilized), one field duplicate sample, and one matrix spike/matrix spike

duplicate (except MS/MSD is not required for the Part 360 routine parameters sampling events) during sampling activities for every twenty groundwater samples. A transport blank will also be prepared for each sample set to be submitted for volatile analyses. The QC sample collection procedures are described in Section 3.5.4.

Laboratory quality control checks will be those specified in EPA Methods or in the NYSDEC ASP (revised June 2000 or subsequent revision) for the analytical method performed and could consist of some of the following:

- Blanks (method, preparation),
- initial and continuing calibrations,
- surrogate spikes,
- matrix spikes/matrix spike duplicates,
- duplicate samples, and
- control samples/matrix spike blanks.

The laboratory will be responsible for complying with appropriate standards and certifications of the selected EPA method and ASP requirements. The laboratory quality control acceptance criteria are method specific and it will be the laboratory's responsibility to meet ASP criteria.

3.5.3 Sample Containers

Only new pre-cleaned laboratory provided sample containers and caps will be used for sample collection/analyses. The container type, cap type and preservative requirements for the analytical parameters (groundwater and equipment blank water sample, when applicable) to be analyzed are summarized in Table 3.5.3-1.

Table 3.5.3-1
Analytical Requirements for Containers and Preservatives
for Groundwater Samples

PARAMETER	CONTAINER	TOP	PRESERVATIVE	COMMENTS
Part 360 Baseline VOCs EPA 8260B	2-40 ml Glass Vials	Teflon Lined Septum	Cool, 4°C HCL to pH <2 (Preserved)	None
TCL PCBs EPA 8082	2-1L Amber Glass	Teflon Lined	Cool, 4°C	None
Part 360 Metals, Except Mercury EPA 6010B	250 ml or 500 ml Plastic or Glass	Poly	HNO_3 to pH <2	None
Mercury EPA 7470	250 ml or 500 ml Plastic or Glass	Poly	HNO_3 to pH <2	None
Total Cyanide	250 or 500 ml Plastic or Glass	Poly	NaOH to pH >12	Ascorbic, 0.6g
Alkalinity	250 ml or 500 ml Plastic or Glass	Poly	Cool, 4°C	Fill Completely
Ammonia	500 ml Plastic or Glass	Poly	H_2SO_4 to pH <2	None
Biochemical Oxygen Demand	500 ml Plastic or Glass	Poly	Cool, 4°C	None
Boron	250 ml or 500 ml Plastic or Glass	Poly	HNO_3 to pH <2	None
Bromide	500 ml Plastic or Glass	Poly	Cool, 4°C	None
Chloride	500 ml Plastic or Glass	Poly	Cool, 4°C	None
Color	500 ml Plastic or Glass	Poly	Cool, 4°C	None
Chemical Oxygen Demand	2-40 ml Glass Vials	Teflon Lined	H_2SO_4 to pH <2, Cool	None
Total Dissolved Solids	500 ml Plastic	Poly	Cool, 4°C	None
Hardness	250 ml or 500 ml Plastic or Glass	Poly	HNO_3 to pH <2	None
Hexavalent Chromium	250 ml Plastic or Glass	Poly	Cool, 4°C	None
Nitrate	250 ml Plastic or Glass	Poly	Cool, 4°C H_2SO_4 to pH <2	Chlorinated Non-Chlorinated

PARAMETER	CONTAINER	TOP	PRESERVATIVE	COMMENTS
Phenols	1L Glass	Poly	Cool, 4°C H_2SO_4 to pH <2	None
Sulfate	250 ml Plastic or Glass	Poly	Cool, 4°C	None
Total Kjeldahl Nitrogen	500 ml Plastic or Glass	Poly	H_2SO_4 to pH <2	None
Total Organic Carbon	2-40 ml Glass Vials	Teflon Lined	H_3PO_4 to pH <2	None
Turbidity	250 ml Plastic or Glass	Poly	Cool, 4°C	None

Sample labels will be prepared prior to sampling and affixed to the sample containers. The client, project name, site location, matrix, sample type (grab/composite), preservative and laboratory analyses to be performed will be recorded on the sample labels prior to sampling. The sample location, date, sampler's initials and time will be filled out on the sample label at the time of sampling.

3.5.4 Quality Control Sample Collection Procedures

Quality control samples include equipment blanks (only if new disposable sampling equipment is not utilized), field duplicate samples, matrix spike/matrix spike duplicate samples and transport blank for the groundwater samples. The following paragraphs describe how these samples are prepared and collected.

Equipment Blank: After the bailer has been decontaminated and is ready for sampling, pour laboratory provided deionized or distilled water into the bailer and then into the sample container(s). If a peristaltic pump is utilized to collect the samples for metals analysis, place the tubing in the container of laboratory provided deionized or distilled water and transfer the water into the sample container with the peristaltic pump. The equipment blank will be analyzed for the same parameters as the project samples.

Field Duplicate: A field duplicate sample is an additional sample collected from the same location as the original sample. Duplicate samples are collected simultaneously using identical procedures, but placing the samples in separate containers. The

groundwater field duplicate samples for analytes other than volatile organic compounds will be taken by splitting each bailer of water between both sets of containers (sample and duplicate containers) until the containers are filled. The duplicate groundwater sample for VOCs analysis is typically collected in duplicate or triplicate, so this procedure will be repeated two or three times using a new full bailer of water each time. If water is left in the bailer after both the sample and duplicate sample containers have been filled, it will be poured out prior to refilling the bailer.

The field duplicates will be analyzed for the same parameters as the original sample, yet the sample designation is "blind" so that the laboratory can't determine which sample it is a duplicate of.

Matrix Spike/Matrix Spike Duplicate: These samples are designated from site specific groundwater samples collected whereby the laboratory spikes the sample with a known concentration. The MS/MSD samples will be collected following the same procedures as the field duplicate samples.

Transport Blank: The transport blanks for the groundwater samples are prepared in the laboratory when the sample containers are prepared. Transport blanks will be prepared by filling 40 ml glass containers (with Teflon™ lined septum) with organic-free water. These containers will travel unopened with the sample containers and be analyzed for the same volatile constituents as the samples being submitted.

The groundwater field duplicate sample will be identified as GWFD01. The groundwater equipment blank will be identified as GWEB01. The sampling interval and location where the field duplicates are collected and where the equipment blank is collected before will be identified in the sampling log. The MS/MSD samples will be labeled as required for the sample location except that in the comment section of the chain of custody record shall read "use this sample for the MS/MSD" or equal. The transport blank will be identified as Transport Blank followed by the month/day/year.

3.5.5 Sample Preparation and Analytical Procedures

The analytical parameters, analysis methods, acceptable holding times and required method detection limits are presented in Table 3.5.5-1. The analytical methods specified reflect the requirements of the NYSDEC ASP (revised June 2000) and Part 360.

Table 3.5.5-1
Analytical Methods and Requirements

ANALYTICAL PARAMETERS	SAMPLE ANALYSIS METHOD	HOLDING TIMES [1]	PRACTICAL QUANTITATION LIMIT [2]
Part 360 Baseline Parameters (Water):			
VOCs	EPA 8260B	10 Days Preserved (HCL to pH <2)	1 - 10 ug/l
Baseline Metals [3]	EPA 200.7/EPA 6010B	180 Days	3 - 5,000 ug/l
Mercury	EPA 245.1/EPA 7470	26 Days	0.2 ug/l
Hexavalent Chromium	EPA 7196	24 Hours	0.010 mg/l
Cyanide	EPA 335.4/EPA9012B	12 Days	10 ug/l
Total Kjeldahl Nitrogen	EPA 351.3/351.2	26 Days	0.5 mg/l
Ammonia	EPA 350.1/SM 4500	26 Days	0.1 mg/l
Bromide	EPA 300.0	26 Days	0.1 mg/l
Nitrate	EPA 353.2/300.0	24 Hours	0.1 mg/l
Chemical Oxygen Demand	EPA 410.1/410.4/ SM5220	26 Days	10 mg/l
Biochemical Oxygen Demand	EPA 405.1/SM5210B	24 Hours	2 mg/l
Total Organic Carbon	EPA 415.1/9060/SM5310	26 Days	1 mg/l
Total Dissolved Solids	EPA 160.1/SM2540C	7 Days	10 mg/l
Sulfate	EPA 375.4/300.0	26 Days	1 mg/l
Alkalinity	EPA 310.1/SM2820B	12 Days	2 mg/l
Phenols	EPA 420.1/420.4	26 Days	0.005 mg/l
Chloride	EPA 325.3/300.0	26 Days	5 mg/l
Total Hardness as $CaCO_3$	EPA 130.2/SM2340B	6 Months	0.5 mg/l
Color	EPA 110.2/SM2120B	24 Hours	5 CPU
Boron	EPA 6010B	6 Months	0.05 mg/l
Turbidity	EPA 180.1	24 Hours	0.05 NTU

ANALYTICAL PARAMETERS	SAMPLE ANALYSIS METHOD	HOLDING TIMES [1]	PRACTICAL QUANTITATION LIMIT [2]
TCL PCBs (Water):			
TCL PCBs (Water)	EPA 8082	5 Days to Extraction, 40 Days to Analyze	0.5 - 1 ug/l
Part 360 Routine Parameters (Water):			
Routine Metals [3]	EPA 200.7/EPA 6010B	180 Days	3 - 5,000 ug/l
Total Kjeldahl Nitrogen	EPA 351.3/351.2	26 Days	0.5 mg/l
Ammonia	EPA 350.1/SM 4500	26 Days	0.1 mg/l
Bromide	EPA 300.0	26 Days	0.1 mg/l
Nitrate	EPA 353.2/300.0	24 Hours	0.1 mg/l
Chemical Oxygen Demand	EPA 410.1/410.4/ SM5220	26 Days	10 mg/l
Biochemical Oxygen Demand	EPA 405.1/SM5210B	24 Hours	2 mg/l
Total Organic Carbon	EPA 415.1/9060/SM5310	26 Days	1 mg/l
Total Dissolved Solids	EPA 160.1/SM2540C	7 Days	10 mg/l
Sulfate	EPA 375.4/300.0	26 Days	1 mg/l
Alkalinity	EPA 310.1/SM2820B	12 Days	2 mg/l
Phenols	EPA 420.1/420.4	26 Days	0.005 mg/l
Chloride	EPA 325.3/300.0	26 Days	5 mg/l
Total Hardness as $CaCO_3$	EPA 130.2/SM2340B	6 Months	0.5 mg/l
Turbidity	EPA 180.1	24 Hours	0.05 NTU

(1) Holding times are in accordance with NYSDEC ASP (revised June 2000) requirements. Holding times are relative to the verifiable time of receipt at the laboratory.

(2) The listed detection limits are Practical Quantitation Limits (PQLs). The Method Detection Limit (MDL) is the best possible detection. Laboratories report the Practical Quantitation Limit, which is generally 4 times the MDL. The PQL is the lowest concentration analytes can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. Efforts should be made to obtain the best detection possible when selecting a laboratory. When the guidance value or standard is below the detection limit, achieving the detection limit will be considered acceptable for meeting the guidance value or standard.

(3) The Part 360 routine metals include cadmium, calcium, iron, lead, magnesium, manganese, potassium and sodium. The Part 360 baseline metals include the routine metals plus aluminum, antimony, arsenic, barium, beryllium, chromium, hexavalent chromium, cobalt, copper, cyanide, mercury, nickel, selenium, silver, thallium, vanadium and zinc.

Where matrix interference is noted, analytical clean-ups will be required to be performed by the laboratory following the procedures specified in SW-846 or the NYSDEC ASP, as applicable. In general, samples shall not be diluted more than 1 to 5.

3.5.6 Laboratory Reporting and Data Validation

The laboratory will prepare ASP Category B data deliverable packages for the laboratory analyses of the groundwater samples collected during the sampling events for the Part 360 baseline parameters and during the sampling events for the TCL PCBs. The laboratory will prepare ASP Category A data deliverable packages for the laborarory analyses of the groundwater samples collected during the sampling events for the Part 360 routine parameters. They will include Sample Data Summary Package, sample preparation and analysis forms, analytical results and quality control data deliverables as required by NYSDEC ASP (revised June 2000 or subsequent revision).

The analytical laboratory will also provide the analytical results in an Electronic Data Deliverable (EDD) formatted to meet the most current requirements of the NYSDEC Environmental Information Management System (EIMS) which uses the database software application EQuIS™ from EarthSoft® Inc.

Data validation of the ASP Category B data deliverable package(s) will be performed by an independent data validator. In accordance with 6NYCRR Part 360-2.11(d)(5)(i)(c), the data validation will be performed on at least 5% of the samples. The data validation will be performed in accordance with the USEPA National and Regional Validation Guidelines/Procedures and the NYSDEC Guidance for the Development of Data Usability Summary Reports to determine the applicable qualifications of the data. The data validator will then prepare a NYSDEC Data Usability Summary Report (DUSR) in accordance with NYSDEC guidelines. The data validator will not be involved in any other portions of the project.

Internal data validation will be performed by the laboratory QA officer for ASP Category B data deliverable packages to document that the data package is complete and meets the criteria of this Section 3.5. Any problems encountered in performing the

analyses by the laboratory such as out of limits surrogate recoveries, comments on the quality and limitations of specific data, and the validity of the data will be described in the case narrative of the data deliverable package.

3.6 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file at the City of Glens Falls City Engineer's Office. 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 Inspections, Reporting and Certifications Plan (Section 5) of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report (i.e., Post-Closure Monitoring Report). A letter report will also be prepared, if required by NYSDEC, subsequent to each sampling event. The Periodic Review Report will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., outdoor air, groundwater, explosive gas, etc.);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, explosive gas sampling form, 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 (to 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.

The letter reports will include, at a minimum:

- Date of event;
- Description of the activities performed;
- Type of samples collected (e.g., groundwater, explosive gas, etc.); and
- Copy of laboratory analysis report and chain of custody record.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 3.6-1 below:

Table3.6-1: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Groundwater Sampling	Three quarterly monitoring letter reports and one annual Periodic Review Report (i.e., Post-Closure Monitoring Report)
Landfill Inspection	
Explosive Gas Monitoring	
Site-Wide Inspection	Annual in Periodic Review Report

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

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

This Operation and Maintenance Plan describes the measures necessary to operate, monitor and maintain the components of the remedy selected for the site. This Operation and Maintenance Plan:

- Includes the steps necessary to allow individuals unfamiliar with the site to operate and maintain the low permeability soil cover/cap and stormwater management system; and
- Will be updated periodically to reflect changes in site conditions or the manner in which the low permeability cover/cap and stormwater management system are operated and maintained.

A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept at the offices of City of Glens Falls Department of Public Works and City Engineer. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP.

4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE

4.2.1 Low Permeability Cover System/Cap Description

The Glens Falls Landfill cover system consists of a gas venting layer (12-inch thick sand layer), low permeability barrier layer (40-mil textured linear low density polyethylene geomembrane liner), geocomposite drainage layer (tri-axial geonet with thermally bonded 6-ounce non-woven geotextile filter fabric on each side), barrier protection layer (18-inch thick silty sand layer) and topsoil and vegetative cover layer (6-inch thick topsoil layer with grass vegetative cover). The low permeability cover system/cap is more thoroughly described in Section 2.2.1.1.

4.2.2 Stormwater Management System Description

The stormwater management system for the Glens Falls Landfill consists of a drainage swale and underdrain below the drainage swale around the perimeter of the landfill, three stormwater management basins (two retention basins and one detention basin with spillway and outlet structure) located adjacent to the toe of the landfill slope, and four catch basins, five culvert pipes and one discharge pipe to convey the stormwater from the perimeter drainage swale and underdrain below the swale to the stormwater basins. The stormwater basins are identified as the Southwest Basin, off of the southwest area of the landfill; the East Basin, east of the central portion of the landfill; and the Northeast Basin, off of northeast corner of the landfill. The catch basins are identified as CB1 through CB4. The outlet structure associated with the detention basin is identified as CB5. The stormwater management system is more thoroughly described in Section 2.2.1.2.

An excavation delineation barrier (EDB) consisting of a non-woven geotextile (Geotex 311 by Propex, Inc.) is present beneath the side walls and bottom of the East Basin approximately two feet below the contour elevations shown on the Environmental Easement Survey, Glens Falls Municipal Landfill at Luzerne Road (C.T. Male Drawing No. 21-543) presented as Figure 2 in this SMP. The purpose of the EDB geotextile is to provide a demarcation barrier between the existing soils and imported materials.

4.2.3 System Operation and Routine Maintenance

4.2.3.1 Low Permeability Cover System/Cap

The integrity of the Glens Falls Landfill's final cover (low permeability cover system/cap), including cover materials, vegetative cover, slopes, drainage swales, groundwater monitoring wells, and gas venting structures shall be maintained for a minimum period of thirty (30) years after the landfill closes unless approval is given by NYSDEC to eliminate some or all of the post closure maintenance requirements.

The vegetative cover shall be mowed on a regular basis to facilitate inspection, to prevent the growth of rooty plants, and to minimize habitation by animals. Areas that do

not have a good vegetative cover shall be seeded and mulched. When necessary, due to high or dense vegetative growth, the cover shall be mowed before the landfill inspections. At a minimum, the vegetative cover shall be mowed twice a year.

Any repairs needed should be completed within three months following the inspection of the landfill. Areas where erosion has occurred shall be re-graded to restore the full final cover depth and shall be seeded and mulched. Animal burrows shall be backfilled with sand and topsoil at the surface, as applicable depending on the depth of the burrow, and the area seeded and mulched. If persistent animal damage is noted, a licensed pest control company should be contacted to remove the nuisance animal. Any obstruction or damage to surface water drainage swales shall be repaired. Any damage to a monitoring well, gas venting structure, the perimeter fence or other structure shall be repaired, or the structure replaced.

4.2.3.2 Stormwater Management System

The stormwater management system needs to undergo regular inspection and maintenance in order to function properly and at design capacity. Maintenance needs may include: removal of silt, litter and other debris from drainage swales and stormwater management basins; mowing of the grass/vegetative cover; and re-seeding of areas that do not have a good vegetative cover.

A Maintenance Inspection Form Stormwater Management System, (refer to Appendix E for blank form) shall be completed to document inspection and maintenance of the stormwater management system performed at the Glens Falls Landfill. This form provides a summary of the inspection requirements for each stormwater facility component, a frequency of inspection and a description of the anticipated routine maintenance that is required. A new form shall be filled out during each inspection. Observations made during the inspection should be written in the "Inspection Comments" field. If it is determined that maintenance is required, a description of the maintenance conducted and the date of the maintenance should be written in the "Maintenance Comments" field. Copies of completed Maintenance Inspection Forms shall be maintained.

The following sections outline the procedures and schedule to be followed to perform routine inspection and maintenance activities associated with the stormwater management system.

A. Catch Basins

Catch basins are structures at the entrance of storm sewer pipes that are designed to "catch" sediments and other floatables from inflowing stormwater. There are catch basins located on the site, generally within the perimeter drainage swales.

At least twice a year and after a major storm event, catch basins should be visually inspected to determine the presence/depth of accumulated sediment and the presence of trash. If trash is observed, it should be removed and properly disposed of off-site. Any accumulated sediment should be removed so that flow from the perimeter underdrain pipe is not impeded. A measuring stick should be used to determine the depth of sediment.

Catch basins should be cleaned using a vacuum truck or an equivalent means. The contents removed by the vacuum truck should be transported off-site to an approved or otherwise authorized solid waste disposal facility. If contents are removed by a contractor, they should provide documentation of the location used for disposal. Sediments or sediment-laden water should not be disposed of on-site. The catch basins should be cleaned in the spring, to remove debris from the winter, and in the fall prior to the start of the winter season to remove leaves and other debris.

B. End Sections

End sections are found at the end of pipes, and they typically include rock protection such as stone filling aprons. The purpose of stone filling aprons placed at the end of pipes is to reduce the velocity, depth and energy of water, such that the flow will not erode downstream areas. End sections are found at the inlets to the stormwater management basins.

The end section of pipes, including stone filling aprons, should be visually inspected for trash and sediment at least twice a year and after major storm events. If trash is observed, it should be removed and disposed of properly. If excessive sediment deposition is observed on the stone fill apron, measures should be taken to remove the sediment. Excessive sedimentation occurs when the stones on the bottom of the apron are no longer visible due to sediment deposition. It is recommended that accumulated sediments be removed with a hand shovel and disposed of off-site at an approved or otherwise authorized solid waste disposal facility.

C. Drainage Culverts

Drainage culverts are pipes that convey stormwater flows from one location to another. At the site, drainage culverts convey flows from the swale(s) at the toe/perimeter of the landfill to on-site stormwater management basins.

Drainage culvert pipes should be inspected at least twice a year and after major storm events to determine if any debris, obstructions or floatables are present. If the flow in the culverts appears confined (i.e., catch basins are full of water or slow draining, or the flow from the end section is low), then a constriction may be present. If a constriction is probable or if debris or obstructions are present, they should be removed by flushing the pipes with water using a high-powered hose.

D. Debris Removal

All debris should be removed from the drainage swales and stormwater management basins. Debris should be removed monthly and after major storm events. Debris in the drainage swales can obstruct the flow of surface water runoff. Debris in the basins can clog the outlet control structure and hinder emergency spillway performance (detention basin). All debris shall be disposed of off-site at an approved or otherwise authorized solid waste disposal facility.

E. Sediment Monitoring and Removal From Basins

There are three stormwater management basins located at the site, two retention basins and one detention basin. These basins should be visually inspected at least twice a year and after major storm events.

Accumulated sediments must be removed from the basins following stabilization of areas disturbed during construction activities that may have contributed sediment to the basins. Following stabilization, accumulated sediments must be removed from the retention basins on a regular basis so that infiltration is not impeded, and from the detention basin when sediment impedes the functioning of the low level outlet. Failure to remove the accumulated sediments will result in excess sediment loading which will reduce the effectiveness of the basins. Accumulated sediments should be removed from the basins by the use of excavators, backhoes or loaders and placed in a dump truck and transported off-site for disposal to an approved or otherwise authorized solid waste management or disposal facility. If removal of sediment causes damage to vegetated areas within the basins, disturbed areas should be seeded/hydroseeded and mulched.

At completion of the remedial action construction in November 2010 approximately twenty-four inches of cover (imported sand) was present over the EDB geotextile beneath the side walls and bottom of the East Basin. At least twelve inches of cover must be maintained over the EDB geotextile as required by the NYSDEC. During the removal of accumulated sediments in the East Basin care shall be taken not to excavate further than necessary in order to maintain the required minimum twelve inches of cover over the EDB geotextile. If necessary, additional clean sand shall be imported and placed with no compaction effort on the bottom of the East Basin to re-establish the required minimum twelve inches of cover over the EDB geotextile.

If the EDB geotextile is encountered during operation and maintenance activities in the East Basin then protective measures, such as hand excavation, shall be undertaken to prevent damage or displacement of the geotextile. If a portion of the geotextile is damaged, a new section of fabric (Geotex 311 by Propex, Inc. or equal) that extends at least 2 feet beyond the damaged area shall be placed over the center of the damaged area

and adhered to the underlying fabric by use of a spray adhesive or heat bonding, and the cover material restored.

Documentation on the source of the imported sand shall be maintained and the imported sand shall be tested for environmental parameters in accordance with Section B-11, Backfill From Off-Site Sources, in the Excavation Work Plan in Appendix B.

F. Basin Slopes

The slopes of the stormwater management basins should be visually inspected to determine the percent of vegetative cover. At least 80% vegetative cover is needed to ensure the slopes are stabilized to prevent erosion and excess sedimentation build-up in the basins. If less than 80% vegetative cover is observed on basin slopes in certain areas, these areas should be re-graded, seeded/hydroseeded and mulched, as needed.

If any woody vegetation (i.e., small trees or shrubs) are observed during the inspections, they should be removed by mowing or cutting. The basin slopes shall be mowed at least twice a year to prevent woody vegetation from becoming established.

The basin slopes should also be inspected for erosion, animal damage and undercutting of the banks of the slope. If rills or gullies greater than 4-inches in depth and 6-inches in width are observed, they should be repaired by re-grading the area and applying seed and mulch. If the basin slopes appear to be undercutting or slumping, the slopes should be re-graded to design specifications and seeded and mulched.

Animal damage, including burrowing, should be repaired and filled as necessary. If persistent animal damage is noted, a licensed pest control company should be contacted to remove the nuisance animal.

G. Basin Outlet Structures

The basin off of the northeast corner of the landfill (Northeast Basin) is a detention basin which utilizes an outlet structure. The detention basin outlet components consist of a principal spillway (culvert), a riser, a low flow orifice and an emergency spillway. In order to ensure the ongoing discharge of water from the basin, the

components of the basin outlet structure must be maintained in proper working order. The following provides a summary of each component, including the inspection and maintenance requirements.

1. Principal Spillway and Outlet Control Structure

A principal spillway is the primary pipe that carries flow through the embankment and out of the stormwater management basin. An outlet control structure is a manhole or catch basin that houses the control devices (i.e., orifices) to achieve the desired discharge rates. A precast concrete structure (CB5) serves as the outlet structure.

The principal spillway and outlet control structure should be visually inspected for debris and floatables at least twice a year and after major storm events. Debris and floatables should be removed as needed and properly disposed of off-site at an approved or otherwise authorized solid waste disposal facility.

Visual inspection of the condition of concrete, masonry and crack sealing of the principal spillway and outlet control structure should be conducted on an annual basis. If concrete, masonry or crack sealing are observed to be in poor condition, repairs should be made as needed. Poor condition may include cracks, chips, holes, water damage or other noticeable structural deficiencies.

2. Low Flow Orifice

A low flow orifice is located in a cap with a drilled hole smaller than the diameter of the outlet pipe that the cap is placed on. The purpose of a low flow orifice is to release stormwater flows at a controlled rate. The orifice opening for this project is 4 inches in diameter.

The low flow orifice should be visually inspected for obstructions at least twice a year and after a major storm event. If obstructions or debris is observed, it should be removed and properly disposed of off-site at an approved or otherwise authorized solid waste management or disposal facility.

3. Emergency Spillway

An emergency spillway is used to convey excess water from the detention basin in the event that discharge flows exceed the principal spillway design discharge or in the event of blockage of the principal spillway. The emergency spillway is the lowest point on the embankment of the basin. Frozen ground conditions and excessively high rainfall (above the design criterion) may cause some overtopping of the basin.

The emergency spillway should be inspected at least twice a year and after major storm events for obstructions, debris and floatables. If obstructions are observed, they should be removed as needed and properly disposed of off-site at an approved or otherwise authorized solid waste management or disposal facility.

The Post Landfill Closure Operation and Maintenance Manual for Stormwater Management System and a blank Maintenance Inspection Form for Stormwater Management System are included in Appendix E.

4.3 MONITORING SCHEDULE

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of a component of the low permeability cover system/cap or stormwater management system has been reported or an emergency occurs that is deemed likely to affect-the operation of the system.

Monitoring deliverables for the low permeability cover system/cap and stormwater management system are specified later in this SMP.

4.3.1 Monitoring Schedule For Low Permeability Cover System/Cap

Inspections of the landfill cover system will initially be conducted quarterly during water quality monitoring events. Inspection observations shall be recorded on the Site-Wide Inspection Form (refer to Appendix G for blank form), and shall include the date, identity of inspector, status of landfill cover, description of vegetative cover

condition, repairs needed and repairs completed since the last inspection. During the inspections, the vegetative cover shall be inspected for burrows created by animals, sparsely vegetated areas, ponding, depressions, leachate seeps, signs of erosion or any other notable damage. The gas venting structures shall be inspected for stability and insect screens shall be checked for blockages. The monitoring wells shall also be inspected for any damage and their condition recorded.

4.3.2 Monitoring Schedule For Stormwater Management System

In general, the frequency of inspection of each stormwater management system component should be at least twice a year (spring and fall) and after a major storm event, unless otherwise noted. Major storm events are considered to be those that result in more than 2.3 inches of rain falling within a single 24-hour period (a 1-year storm event).

4.4 MAINTENANCE AND PERFORMANCE MONITORING REPORTING REQUIREMENTS

Maintenance reports and any other information generated during regular operations at the site will be kept on-file at the City of Glens Falls City Engineer's Office. All reports, forms, and other relevant-information generated will be available upon request to the NYSDEC and submitted as part of the Periodic Review Report, as specified in the Section 5 of this SMP.

4.4.1 Routine Maintenance Reports

Checklists or forms 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;

TABLES

TABLE 1.3-1
HISTORICAL, AND PRE AND POST REMEDIAL ACTION GROUNDWATER SAMPLING RESULTS - VALIDATED
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sampling Date	Parameter	NYSDEC Standard [1]	MW-101-1	MW-101-2[2]	MW-101-3	MW-101-4	MW-101-5	MW-101-6S	MW-101-6I	MW-101-7S	MW-101-7I	MW-101-8S(R)[3]	MW-101-8I(R)[3]	MW-101-10S(R)[3]	MW-2S	FDGW01	EBGW01
	Leachate Indicators																
3/21/1990	PH (Standard Units)	6.5 - 8.5	6.5	6.5	**6.2**	6.9	6.8	-	-	-	-	-	-	-	-	-	-
11/2001			**6.48**	**5.21**	**5.55**	6.65	6.64	-	-	-	-	-	-	-	-	-	-
3/2002			**4.73**	**4.76**	**9.15**	6.82	6.87	-	-	-	-	-	-	-	-	-	-
6/2009			6.86	7.12	6.83	6.90	7.05	6.92	8.06	6.81	6.89	6.65	6.95	7.04	-	-	-
10/2011			6.71	-	7.10	6.71	6.74	7.20	8.07	6.77	6.91	6.63	**6.49**	6.86	6.73	-	-
3/21/1990	EH (mv)	No Standard	240	240	220	239	243	-	-	-	-	-	-	-	-	-	-
11/2001			34	122	222	57	88	-	-	-	-	-	-	-	-	-	-
3/2002			-6	239	220	62	1.0	-	-	-	-	-	-	-	-	-	-
6/2009			128.3	141.0	130.3	131.2	138.3	139.5	131.9	141.9	144.1	128.1	142.0	139.5	-	-	-
10/2011			136.1	-	130.7	134.9	130.9	138.1	130.3	130.5	135.7	132.0	130.1	133.5	132.1	-	-
3/21/1990	Turbidity (NTU)	5 NTU	**9.7**	**6.3**	4.8	**31**	**20**	-	-	-	-	-	-	-	-	-	-
11/2001			**220**	**200**	**2,160**	**55**	**69**	**6**	**360**	**660**	**6.6**	**550**	**9.7**	2.2	-	-	-
3/2002			**91**	**16**	**150**	**17**	**67**	**9.9**	3.1	**120**	1.4	**19**	**19**	**5.7**	-	-	-
6/2009	(lab measured)		**362**	**59.4**	**58.4**	1.72	**16.3 (J)**	**436**	**6.22**	**620**	**14.7**	**105**	2.8	**118**	-	11.2 (J)	-
6/2009	(field measured)		-	**14.3**	**20.4**	**21.3**	**43.1**	**>200**	**17.3**	**41.6**	**17.5**	-	-	**28.3**	-	-	-
10/2011	(lab measured)		**372**	-	**30.1**	**46.1**	2.95	**42.7**	1.65	**38.3**	4.08	**17.6**	**33.2**	**655**	**505**	**760**	0.15
10/2011	(field measured)		**10.5**	-	**12.3**	**10.5**	**8.1**	**145**	**14.1**	**50.5**	**15.3**	**35.7**	**24.7**	**35.9**	**545**	-	-
3/21/1990	Color (CPU)	15 Apha	**60**	5.0	<5.0	**20**	10	-	-	-	-	-	-	-	-	-	-
11/2001			**350**	**53**	**24**	**180**	**230**	**20**	**510**	**420**	**20**	**150**	**38**	<10	-	-	-
3/2002			**160**	**64**	**300**	<5.0	**190**	<5	**90**	**79**	<5	**85**	**70**	<5	-	-	-
6/2009			**500**	**75**	**45**	**20**	**25**	**100**	5	**750**	**50**	**150**	0	**100**	-	**25**	-
10/2011			**500**	-	**100**	**75**	10	**50**	0	**60**	15	**25**	**125**	**1250**	**1500**	**1500**	0
3/21/1990	Specific	No Standard	2,539	847	471	989	1,506	-	-	-	-	-	-	-	-	-	-
11/2001	Conductivity (uS)		1,905	523	737	462	1,126	-	-	-	-	-	-	-	-	-	-
3/2002			2.26	10.31	2.8	617	430	-	-	-	-	-	-	-	-	-	-
6/2009			561	462	665	529	504	173.1	106.3	580	469	446	175.4	160.3	-	-	-
10/2011			132	-	633	1223	695	201.0	227	619	483	541	519	651	733	-	-
3/21/1990	Total Dissolved	500	**1,660**	**540**	223	**679**	**952**	-	-	-	-	-	-	-	-	-	-
11/2001	Solids (mg/l)		**1,600**	**880**	**610**	260	**830**	**4,100**	93	**3,500**	190	**2,100**	**580**	**1,300**	-	-	-
3/2002			**1,300**	**630**	210	290	**540**	120	50	**540**	320	410	**540**	170	-	-	-
6/2009			**940**	**850**	320	**1000**	**760**	190	120	500	**960**	**550**	**830**	**720**	-	**740**	<10
10/2011			**660**	-	**920**	440	380	120	140	**640**	350	320	280	330	350	320	<10
3/21/1990	Chemical Oxygen	No Standard	207	11	<5.0	29	11	-	-	-	-	-	-	-	-	-	-
11/2001	Demand (mg/l)		77	<5.0	<5.0	18	27	69	<5.0	67	84	47	<5.0	84	-	-	-
3/2002			63	<5.0	<5.0	24	27	24	<5.0	39	7.0	29	<5.0	14	-	-	-
6/2009			13 J (<13 U)	31 (<31 U)	49 (<49 U)	7.7 J (<7.7 U)	26 (<26 U)	<20	<20	6.9 J (<6.9 U)	9.8 J (<9.8 U)	13 J (<13 U)	<21	8.7 J (<8.7 U)	-	35 (<35 U)	53 (J)
10/2011			44.1	-	7.54	15.1	13.8	<1.62	<1.62	25.0	<1.62	<1.62	7.35	19.2 (J)	14.1	38.2 J	<1.62
3/21/1990	Biochemical Oxygen	No Standard	44	<2.0	<2.0	12	<2.0	-	-	-	-	-	-	-	-	-	-
11/2001	Demand (mg/l)		30	4.0	<2.0	10	16	40	4.2	32	38	31	3.3	42	-	-	-
3/2002			27	2.8	<2.0	18	13	21	3.8	25	6.0	13	<2.0	9.5	-	-	-
6/2009			15	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	6	<3.0	10	<3.0	<3.0	-	<3.0	<3.0
10/2011			6.00	-	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	<1.81	6.00	6.00	4.00	<1.81
11/6/1985	Total Organic	No Standard	54	17	15	37	48	-	-	-	-	-	-	-	-	-	-
3/21/1990	Carbon (mg/l)		46.6	8.2	5.2	16	8.0	-	-	-	-	-	-	-	-	-	-
11/2001			29	5.6	1.2	5.8	21	41	0.67	17	15	8.6	1.8	3.7	-	-	-
3/2002			21	1.7	0.72	7.6	9.9	8.6	1.5	13.7	4.1	10.3	5.1	6.4	-	-	-
6/2009			13.6	5.2	1.92	11.4	10.1	1.42 (<1.42 U)	0.46 J (<0.46 U)	16.5	5.33	3.48	2.36 (<2.36 U)	2.56 (<2.6 U)	-	8.89	0.312 J
10/2011			12.7	-	1.49 (<1.49 U)	6.36	4.06	0.820 J (<0.820 U)	0.840 J (<0.840 U)	10.4	2.39 (<2.39 U)	3.09 (<3.09 U)	2.95 (<2.95 U)	3.33	3.67	3.29	<0.572
11/6/1985	Sulfate (mg/l)	250	2.5	16	23	115	103	-	-	-	-	-	-	-	-	-	-
3/21/1990			<2.0	6.0	19	120	40	-	-	-	-	-	-	-	-	-	-
11/2001			24	37	<10	48	66	59	5.0	120	35	19	24	12	-	-	-
3/2002			6.0	18	7.0	49	31	15	4.0	45	47	71	42	9.0	-	-	-
6/2009			18.6	8.27	38.2	173	74.2	19.3	8.98	144	85.1	53	71.3	15.1	-	73.9	<1.0
10/2011			0.670 J	-	21.6	56.8	32.6	1.81	11.8	64.5	63.0	37.8	4.88	5.2	3.73	5.25	<0.383
3/21/1990	Alkalinity (mg/l)	No Standard	1,390	288	53	370	315	-	-	-	-	-	-	-	-	-	-
11/2001			730	240	90	140	470	33	32	440	52	270	140	20	-	-	-
3/2002			570	78	40	200	400	32	32	340	190	290	120	19	-	-	-
6/2009			850	250	92	430	410 (J)	65	76	600	300	280	160	170	-	520 (J)	<20
10/2011			555	-	65.9	359	313	43.9	60.9	413	163	231	205	160	257	161	1.53 J
11/6/1985	Chloride (mg/l)	250	184	29	197	99	145	-	-	-	-	-	-	-	-	-	-
3/21/1990			103	86	92	42	**252**	-	-	-	-	-	-	-	-	-	-
11/2001			**420**	52	140	42	140	13	19	120	24	96	140	**270**	-	-	-
3/2002			**300**	**330**	110	35	110	52	11	150	77	93	**520**	94	-	-	-
6/2009			130	242	**303**	148	84.2	54.4	16.6	126	54.4	64.2	192	68.3	-	84.5	<1.0
10/2011			80.5	-	**518 GS1 (518)**	31.7	10.2	13.5	23.2	85.5	62.4	2.02	26.8 (J)	88.6 GS1 (88.6)	46.7	87.4 GS1 (87.4)	<0.307

TABLE 1.3-1
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GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sampling Date	Parameter	NYSDEC Standard [1]	MW-101-1	MW-101-2[2]	MW-101-3	MW-101-4	MW-101-5	MW-101-6S	MW-101-6I	MW-101-7S	MW-101-7I	MW-101-8S(R)[3]	MW-101-8I(R)[3]	MW-101-10S(R)[3]	MW-2S	FDGW01	EBGW01
3/21/1990	Total Hardness	No Standard	376	379	50	317	302	-	-	-	-	-	-	-	-	-	-
11/2001	(mg/l)		580	250	90	130	400	110	36	580	54	230	280	68	-	-	-
3/2002			600	140	40	200	260	70	32	290	190	240	320	82	-	-	-
6/2009			630	280	94	530	500	48	56	560	250	270	330	130	-	480	<4.0
10/2011			490	-	160	390	330	56	71	430	190	280	170	160	350	170	<4.0
3/21/1990	Total Kjeldahl	No Standard	55.4	0.6	<0.5	9.0	7.5	-	-	-	-	-	-	-	-	-	-
11/2001	Nitrogen (mg/l)		33	1.1	<1.0	6.0	12	1.3	<1.0	18	1.2	7.0	<1.0	<1.0	-	-	-
3/2002			<1.0	<1.0	<1.0	3.9	9.5	12	<1.0	17	2.4	6.4	1.5	2.6	-	-	-
6/2009			22	0.33	<0.2	<0.2	32 (J)	0.37	<0.2	14	10	1.1	<0.2	0.23	-	13 (J)	<0.20
10/2011			12.9	-	<0.179	5.11	0.910	<0.179	<0.179	8.54	3.15	<0.179	0.280	0.560	3.22	1.33	<0.179
3/21/1990	Ammonia (mg/l)	2.0	**17**	1.6	<0.1	**6.6**	**4.9**	-	-	-	-	-	-	-	-	-	-
11/2001			**8.1**	<0.2	<0.2	**2.7**	**3.9**	<0.2	<0.2	**5.7**	<0.2	**2.7**	<0.2	<0.2	-	-	-
3/2002			<0.2	<0.2	<0.2	0.8	**3.3**	<0.2	<0.2	**2.4**	<0.2	1.3	<0.2	<0.2	-	-	-
6/2009			**19**	<0.2	<0.2	<0.2	**9.0**	<0.2	<0.2	**12**	6.3	0.6	<0.2 (UJ)	<0.2	-	**8**	<0.20
10/2011			**8.75**	-	<0.151	**3.99**	0.630	<0.151	<0.151	**5.53**	**2.87**	<0.151	<0.151	<0.151	1.33	<0.151	<0.151
3/21/1990	Nitrate (mg/l)	10	0.08	0.48	1.2	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
11/2001			<0.5	<0.5	1.3	<0.5	<0.5	0.87	0.91	0.0011	<0.5	<0.5	0.0021	<0.5	-	-	-
3/2002			<0.5	2.2	<0.5	1.2	<0.5	1.0	0.9	<0.5	<0.5	<0.5	2.5	<0.5	-	-	-
6/2009			<0.1	0.73	2.97	5.70	2.88	1.08	0.96	1.1	0.49	0.15	4.30	0.44	-	2.75	<0.1
10/2011			0.0400 J	-	5.92	<0.0381	5.45	1.30	1.29	0.100	0.150	4.62	<0.0381	<0.0381 (J)	0.0600 J	0.0400 J	<0.0381
3/21/1990	Total Phenols (mg/l)	0.001	**0.009**	**0.006**	**0.003**	**0.009**	**0.010**	-	-	-	-	-	-	-	-	-	-
11/2001			<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-
3/2002			<0.025	<0.025	<0.025	**0.05**	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-
6/2009			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.20
10/2011			<0.2 (UJ)	-	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	<0.2 (UJ)	**0.38 (J)**
11/6/1985	Total Cyanide (mg/l)	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-
3/21/1990			<0.010	<0.010	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-	-	-
9/1999			ND	0.012N	0.009	0.01	0.009B	-	-	-	-	-	-	-	-	-	-
11/2001			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.032 (<0.032)	<0.01	0.019 (<0.019)	<0.01	0.042 (<0.042)	<0.01	-	-	-
3/2002			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-
6/2009			<0.0025	0.009 B	<0.0025	0.0060 B	<0.0025	0.023	0.027	0.007 B	0.0029 B	<0.0025	0.0028 B	<0.0025	-	<0.0025	<0.0025
10/2011			<0.0075	-	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075
	Metals																
3/21/1990	Aluminum (ug/l)	2,000	1,520	410	1,270	430	580	-	-	-	-	-	-	-	-	-	-
9/1999			861	310	125 B	ND	75.2 B	-	-	-	-	-	-	-	-	-	-
11/2001			**8,050**	**17,700**	**4,590**	28.9 B	226	**96,700**	542	**173,000**	426	**29,600**	1,690	**29,600**	-	-	-
3/2002			**19,700**	**2,660**	**2,640**	142 B	214	**15,200**	103 B	**15,400**	104 B	**5,020**	**29,800**	**18,300**	-	-	-
6/2009			<56	**2,510**	**3,470**	<56	<56	**7,220**	244	**2,030**	<56	<56	111 B	**4,740**	-	<56	<56
10/2011			<66	**-**	**4,490**	<66	68.7 B (J)	**10,600**	387	1,410	<66	1,000	1,660	1940 (J)	**41,100**	**5850 (J)**	<66
3/21/1990	Antimony (ug/l)	30	<60	<60	<60	<60	<60	-	-	-	-	-	-	-	-	-	-
9/1999			ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			<9.2	<9.2	<9.2	<9.2	<9.2	<9.2	<9.2	<9.2	<9.2	<9.2	<9.2	<9.2	-	-	-
3/2002			<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	-	-	-
6/2009			<4.6	5.2 B	<4.6	<4.6	5.6 B	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	-	4.8 B	<4.6
10/2011			<9.3	-	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3	<9.3
3/21/1990	Arsenic (ug/l)	25	<5.0	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
9/1999			8.3 B	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			10.5	5.2 B	<5.0	<5.0	<5.0	**34.6**	<5.0	**73.8**	<5.0	18.7	<5.0	10.7	-	-	-
3/2002			18.4	<3.2	<3.2	<3.2	<3.2	4.9 B	<3.2	10.2	<3.2	6.7 B	12.7	3.4 B	-	-	-
6/2009			<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	-	<5.3	<5.3
10/2011			<4.3	-	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3	<4.3	15.5 B (J)	<4.3	<4.3
3/21/1990	Barium (ug/l)	1,000	390	20	20	40	110	-	-	-	-	-	-	-	-	-	-
9/1999			176 B	23.1 B	4.4 B	39.4 B	196 B	-	-	-	-	-	-	-	-	-	-
11/2001			285 E (J)	141 BE (J)	51.3 BE (J)	20.4 BE	141 BE (J)	422 E (J)	8.6 BE	**1,740 E (J)**	12.8 BE	271 E (J)	36.1 BE (J)	184 BE (J)	-	-	-
3/2002			363	39.2 B	23.5 B	17.9 B	104 B	91 B	1.7 B	279	52.4 B	75.2 B	224	118 B	-	-	-
6/2009			185 B	57.9 B	116 B	110 B	111 B	42.6 B	<8.5	281	70.9 B	130 B	36.1 B	55.5 B	-	107 B	<8.5
10/2011			87.4 BE (J)	-	163 BE (J)	35.9 BE (J)	46.4 BE (J)	49.3 BE (J)	7.6 BE (J)	124 BE (J)	46.8 BE (J)	25.6 BE (J)	55.4 BE (J)	84.6 BE (J)	339 E (J)	98.9 BE (J)	<1.1 E
3/21/1990	Beryllium (ug/l)	3.0 (GV)	<5.0	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
11/2001			0.67 B	1.2 B	0.50 B	0.35 B	0.47 B	**3.2 B**	0.38 B	**6.9**	0.34 B	1.4 B	0.44 B	1.3 B	-	-	-
3/2002			1.2 B	0.31 B	0.4 B	0.42 B	0.33 B	0.86 B	0.32 B	1.2 B	0.34 B	0.49 B	1.8 B	0.9 B	-	-	-
6/2009			<0.13	0.13 B	0.19 B	<0.13	0.13 B	0.23 B	<0.13	<0.13	<0.13	<0.13	<0.13	0.19 B	-	<0.13	<0.13
10/2011			<0.26	-	<0.26	<0.26	<0.26	0.45 B (J)	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	2.5 E (J)	<0.26	<0.26
3/21/1990	Boron (ug/l)	1,000	750	<50	<50	430	280	-	-	-	-	-	-	-	-	-	-
11/2001			407	44 B	<20	157	334	<20	<20	445	23.1 B	77.6	31.8 B	<20	-	-	-
3/2002			265 N	75.3 N	<20 N	196 N	291 N	<20 N	<20 N	303 N	85.8 N	75 N	<20 N	<20 N	-	-	-
6/2009			454 B	66.9 B (<66.9 U)	30.4 B (<30.4 U)	460 B	574	35.5 B (<35.5 U)	31.1 B (<31.1 U)	764	303 B	157 B (<157 U)	85.6 B (<85.6 U)	40.8 B (<40.8 U)	-	558	26.4 B
10/2011			321 B (J)	-	19.0 B (<19.0 U)	308 B (J)	187 B (J)	16.7 B (<16.7 U)	15.5 B (<15.5 U)	549	87.6 B (<87.6 U)	43.0 B (<43.0 U)	41.0 B (<41.0 U)	49.0 B (<49.0 U)	87.4 B (<87.4 U)	44.2 B (<44.2 U)	<9.9

TABLE 1.3-1
HISTORICAL, AND PRE AND POST REMEDIAL ACTION GROUNDWATER SAMPLING RESULTS - VALIDATED
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sampling Date	Parameter	NYSDEC Standard [1]	MW-101-1	MW-101-2[2]	MW-101-3	MW-101-4	MW-101-5	MW-101-6S	MW-101-6I	MW-101-7S	MW-101-7I	MW-101-8S(R)[3]	MW-101-8I(R)[3]	MW-101-10S(R)[3]	MW-2S	FDGW01	EBGW01
9/1999	Cobalt (ug/l)	No Standard	ND	ND	ND	2.3 B	3.1 B	-	-	-	-	-	-	-	-	-	-
11/2001			6.8 B	11.3 B	<5.0	<5.0	<5.0	41.8 B	<5.0	59.4	<5.0	17.4 B	<5.0	11 B	-	-	-
3/2002			16.4 B	1.8 B	2.1 B	5.1 B	3.4 B	8.2 B	<1.0	9.2 B	2.8 B	7.7 B	26.6 B	6.2 B	-	-	-
6/2009			2.6 B	2.3 B	1.9 B	2.0 B	1.8 B	1.9 B	<1.2	8.2 B	2.9 B	3.2 B	<1.2	1.4 B	-	1.5 B	<1.2
10/2011			0.84 B (J)	-	1.6 B (J)	2.2 B (J)	<0.67	2.6 B (J)	<3.6	2.7 B (J)	1.9 B (J)	1.7 B (J)	9.8 B (J)	7.7 B (J)	17.3 B (J)	8.7 B (J)	<0.67
11/6/1985	Cadmium (ug/l)	5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-	-	-	-
3/21/1990			<1.0	<1.0	<1.0	<1.0	2.0	-	-	-	-	-	-	-	-	-	-
9/1999			5.0 B	ND	ND	ND	0.96 B	-	-	-	-	-	-	-	-	-	-
11/2001			<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	-	-	-
3/2002			<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	-	-	-
6/2009			<0.14	0.21 B	<0.14	0.21 B	<0.14 (UJ)	<0.14	<0.14	<0.14	0.24 B	<0.14	<0.14	1.4 B	-	0.25 B (J)	<0.14
10/2011			<0.89	-	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89
3/21/1990	Calcium (ug/l)	No Standard	79,100	127,000	15,000	55,600	43,400	-	-	-	-	-	-	-	-	-	-
9/1999			161,000	101,000	56,600	310,000 E	92,600	-	-	-	-	-	-	-	-	-	-
11/2001			148,000	90,500	39,200	18,800	76,800	30,600	12,800	107,000	21,000	69,400	76,000	21,200	-	-	-
3/2002			156,000	45,000	12,500	34,700	53,400	19,900	9,510	44,000	52,400	71,200	84,300	23,800	-	-	-
6/2009			185,000	91,600	30,400	90,600	88,800	14,700	16,300	109,000	51,300	69,500	102,000	41,900	-	85,300	<130
10/2011			144,000	-	51,600	67,100	70,500	16,400	21,100	85,900	48,200	90,500	52,700	55,500	102,000	57,500	<110
3/21/1990	Chromium (ug/l)	50	<5.0	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
9/1999			2.0 B	2.4 B	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			7.1 B	21.9	5.8 B	5.2 B	7.1 B	**112**	<5.0	**141**	7.3 B	49.3	6.7 B	38	-	-	-
3/2002			14.6	2.4 B	2.1 B	0.92 B	1.7 B	16.2	<0.9	11.2	1.2 B	9.9 B	**106**	12.3	-	-	-
6/2009			<1.1	<1.1	2.0 B	<1.1	<1.1	10.4 B	1.2 B	2.6 B	<1.1	<1.1	<1.1	5.8 B	-	<1.1	<1.1
10/2011			<0.64	-	1.7 B (J)	<0.64	<0.64	10.3 B (J)	1.4 B (J)	1.2 B (J)	<0.64	<0.64	4.0 B (J)	6.4 B (J)	25.0	25.4	<0.64
11/6/1985	Chromium Hex. (ug/l)	50	<5	<5	<7	<7	<10	-	-	-	-	-	-	-	-	-	-
3/21/1990			<20	<20	<20	<20	<20	-	-	-	-	-	-	-	-	-	-
11/6/1985	Copper (ug/l)	200	<6.0	<6.0	-	-	-	-	-	-	-	-	-	-	-	-	-
3/21/1990			<50	<50	<50	<50	<50	-	-	-	-	-	-	-	-	-	-
9/1999			ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			9.8 B	22.3 B	8.0 B	<2.4	3.4 B	84.3	<2.4	**209**	5.1 B	52.6	<2.4	27.3	-	-	-
3/2002			32	4.5 B	5.4 B	2.9 B	3.9 B	17.1 B	<1.6	30.9	<1.6	12.2 B	64	14.4 B	-	-	-
6/2009			<5.0	7.2 B	5.9 B	5.5 B	6.7 B	6.8 B	<5.0	12.3 B	<5.0	<5.0	<5.0	5.9 B	-	5.9 B	<5.0
10/2011			<3.6	-	5.1 B (J)	<3.6	<3.6	5.2 B (J)	<3.6	5.6 B (J)	<3.6	<3.6	<3.6	<3.6 (J)	17.3 B (J)	6.2 B (J)	<3.6
11/6/1985	Iron (ug/l)	300	**34,000**	<40	<40	**8,970**	**389**	-	-	-	-	-	-	-	-	-	-
3/21/1990			**36,000**	250	**510**	**18,200**	**16,300**	-	-	-	-	-	-	-	-	-	-
9/1999			**45,300**	**321**	63.3 B	**966**	**5,130**	-	-	-	-	-	-	-	-	-	-
11/2001			**53,300**	**25,700**	**5,020**	**13,900**	**18,800**	**98,700**	**1,090**	**225,000**	**680**	**72,700**	**3,160**	**31,900**	-	-	-
3/2002			**88,100**	**3,590**	**3,030**	**7,320**	**16,700**	**17,300**	195	**37,100**	**3,030**	**38,200**	**63,600**	**17,400**	-	-	-
6/2009			**36,000**	**2,820**	**2,970**	**553**	**3,300**	**6,810**	**434**	**36,600**	**2,270**	**31,200**	206	**4,410**	-	**2,900**	<61
10/2011			**50,700**	-	**3,380**	**4,570**	**1,120**	**8,130**	**602**	**20,300**	**1,900**	**942**	**12,700**	**25,300**	**81,600**	**30,000**	<31.0
11/6/1985	Lead (ug/l)	25	<5.0	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
3/21/1990			<10	<10	<10	<10	<10	-	-	-	-	-	-	-	-	-	-
9/1999			8.6	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			9.9	12.5	4.3	<3.0	3.2	**84.9**	3.5	**102**	4.3	**36.4**	3.2	**27.6**	-	-	-
3/2002			22.8	3.5	<2.5	<2.5	<2.5	21.2	3.0	15.3	<2.5	9.4	21.9	16.3	-	-	-
6/2009			<2.2	2.7 B	2.7 B	<2.2	<2.2	7.8 B	<2.2	3.0 B	<2.2	<2.2	<2.2	5.5 B	-	<2.2	<2.2
10/2011			<4.2	-	<4.2	<4.2	<4.2	5.7 B (J)	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	61.9	<4.2	<4.2
3/21/1990	Magnesium (ug/l)	35,000 (GV)	**43,600**	14,800	1,530	**43,400**	22,900	-	-	-	-	-	-	-	-	-	-
9/1999			**48,500**	15,100	572 B	27,400	**91,000**	-	-	-	-	-	-	-	-	-	-
11/2001			**45,400**	17,200	5,910	21,800	**46,900**	15,900	2,760 B	**87,100**	3,380 B	20,800	16,000	6,360	-	-	-
3/2002			**50,100**	6,280	2,000 B	27,000	31,800	5,030	1,970 B	**43,900**	14,900	14,900	27,200	5,340	-	-	-
6/2009			**41,600**	12,500	4,450	**73,900**	**67,200**	2,720	3,740	**70,500**	29,800	23,700	18,900	6,470	-	**64,800**	<77
10/2011			32,600	-	8,470	**53,400**	**37,300**	3,650	4,550	**53,400**	17,200	13,600	10,500	6,370	24,000	6,830	<76.0
3/21/1990	Manganese (ug/l)	300	**410**	**4,410**	60	**620**	**1,220**	-	-	-	-	-	-	-	-	-	-
9/1999			**593**	**11,200**	10 B	**867**	**1,860**	-	-	-	-	-	-	-	-	-	-
11/2001			**734 N (J)**	**15,600 N (J)**	214 N (J)	**404 N (J)**	**3,580 N (J)**	**2,250 N (J)**	20.7 N (J)	**2,090 N (J)**	264 N (J)	**1,670 N (J)**	**326 N (J)**	**1,370 N (J)**	-	-	-
3/2002			**1,280**	**5,890**	121	**361**	**1,570**	**523**	3.9 B	**1,180**	**2,970**	**1,250**	**1,060**	**1,410**	-	-	-
6/2009			**584**	**17,200**	120	**686**	**598**	101	6.7 B (<6.7 U)	**1,660**	**2,050**	**850**	127	**3,080**	-	**577**	<0.96
10/2011			**599**	-	134	**811**	**417**	159	<10.0	**844**	**2,090**	**567**	**3,590**	**2,370**	**3,260**	**2,430**	<10.0
11/6/1985	Mercury (ug/l)	0.7	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
3/21/1990			<0.4	<0.4	<0.4	<0.4	<0.4	-	-	-	-	-	-	-	-	-	-
11/2001			<0.2 (R)	<0.2 (R)	<0.2 (R)	<0.2 (R)	<0.2 (R)	<0.2 (R)	<0.2 (R)	0.24 (J)	<0.2 (R)	<0.2 (R)	<0.2 (R)	<0.2 (R)	-	-	-
3/2002			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-
6/2009			<0.056	<0.056	<0.056	0.074 B	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	-	<0.056	<0.056
10/2011			<0.028	-	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028

TABLE 1.3-1
HISTORICAL, AND PRE AND POST REMEDIAL ACTION GROUNDWATER SAMPLING RESULTS - VALIDATED
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sampling Date	Parameter	NYSDEC Standard (1)	MW-101-1	MW-101-2(2)	MW-101-3	MW-101-4	MW-101-5	MW-101-6S	MW-101-6I	MW-101-7S	MW-101-7I	MW-101-8S(R)(3)	MW-101-8I(R)(3)	MW-101-10S(R)(3)	MW-2S	FDGW01	EBGW01
11/6/1985	Nickel (ug/l)	100	11	<5.0	<5.0	<5.0	46	-	-	-	-	-	-	-	-	-	-
3/21/1990			<50	<50	<50	<50	<50	-	-	-	-	-	-	-	-	-	-
9/1999			ND	4.8 B	ND	3.4 B	7.8 B	-	-	-	-	-	-	-	-	-	-
11/2001			<4.0	15.8 B	4.0 B	<4.0	4.6 B	45.1	<4.0	92.2	<4.0	17.3 B	<4.0	16.3 B	-	-	-
3/2002			7.6 B	<2.1	<2.1	<2.1	<2.1	8.5 B	<2.1	8.2 B	<2.1	<2.1	35.5 B	6.2 B	-	-	-
6/2009			<1.5	5.1 B	2.0 B	3.0 B	3.7 B	2.9 B	<1.5	4.6 B	1.6 B	2.1 B	<1.5	2.3 B	-	3.8 B	<1.5
10/2011			0.99 B (J)	-	1.7 B (J)	1.3 B (J)	1.3 B (J)	3.9 B (J)	<0.85	4.5 B (J)	1.3 B (J)	1.8 B (J)	5.8 B (J)	3.2 B (J)	26.2 B (J)	5.2 B (J)	<0.85
3/21/1990	Potassium (ug/l)	No Standard	33,600	327	1,070	12,300	18,700	-	-	-	-	-	-	-	-	-	-
9/1999			30,800	4,530 B	446 B	31,800 B	46,300	-	-	-	-	-	-	-	-	-	-
11/2001			32,100	6730	2,110 B	12900	24,700	7,300	609 B	50,800	4,330 B	11,100	2,130 B	4,210 B	-	-	-
3/2002			30,900 E	5,770 E	720 BE	11,300 E	20,100 E	1,680 BE	386 BE	29,700 E	13,300 E	8,000 E	6,200 E	2,710 BE	-	-	-
6/2009			23,600	7,200	1,360	33,700	20,500	1,370	623 B	41,000	24,300	6,970	1,840	1,710	-	19,800	<41
10/2011			13,500	-	3,010	18,500	10,300	1,770 (<1,770 U)	816 B (<816 U)	29,900	16,100	2,330	2100 (J)	3,370	26.2 B (J)	3,610	96.8 B (J)
3/21/1990	Selenium (ug/l)	10	<5.0	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
9/1999			**22.3**	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			<5.0 **	<5.0 **	<5.0 **	<5.0 **	<5.0 **	<5.0 **	<5.0 **	<5.0 **	<5.0 **	<5.0 **	<5.0 **	<5.0 **	-	-	-
3/2002			<3.4	<3.4	<3.4	<3.4	<3.4	3.7 B	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	-	-	-
6/2009			<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	-	<6.6	<6.6
10/2011			<12.0	-	<12.0	<12.0	<12.0	<12.0	<12.0	<12.0	<12.0	<12.0	<12.0	<12.0	<12.0	<12.0	<12.0
11/6/1985	Silver (ug/l)	50	8.0	<6.0	<6.0	<6.0	<6.0	-	-	-	-	-	-	-	-	-	-
3/21/1990			<20	<20	<20	<0.4	<20	-	-	-	-	-	-	-	-	-	-
9/1999			4.2 B	2.5 B	ND	ND	1.1 B	-	-	-	-	-	-	-	-	-	-
11/2001			<5.0	10.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	-	-
3/2002			2.9 B	1.8 B	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	2.1 B	<1.6	-	-	-
6/2009			<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	0.78 B	<0.59	<0.59	0.99 B (<0.99 U)	<0.59	<0.59	-	<0.59	0.63 B
10/2011			<6.9	-	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9	<6.9
3/21/1990	Sodium (ug/l)	20,000	**66,200**	**34,600**	**69,500**	**44,600**	**182,000**	-	-	-	-	-	-	-	-	-	-
11/2001			**240,000**	**34,600**	**129,000**	18,700	**83,300**	**23,800**	6,280	**94,900**	19,900	**56,200**	**43,000**	**97,800**	-	-	-
3/2002			**262,000 E**	**155,000 E**	**37,200 E**	15,200 E	**78,000 E**	14,800 E	5,200 E	**75,400 E**	**29,800 E**	**43,900 E**	**73,800 E**	**54,000 E**	-	-	-
6/2009			**66,500**	**96,800**	**217,000**	**76,000**	**68,200**	**48,500**	8,060	**63,200**	**56,900**	**29,500**	**87,000**	**47,000**	-	**65,700**	44.7 B
10/2011			**68,300**	-	**290,000**	**23,200**	18,400	**20,100**	**28,200**	**86,700**	**40,100**	4,660	**34,900**	**52,800**	**32,400**	**52,400**	207 B (J)
3/21/1990	Thallium (ug/l)	0.5 (GV)	<10	<10	<10	<10	<10	-	-	-	-	-	-	-	-	-	-
9/1999			ND	**21.4**	ND	ND	**7,300 B**	-	-	-	-	-	-	-	-	-	-
11/2001			<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	-	-	-
3/2002			<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	-	-	-
6/2009			<4.2	**9.4 B**	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	-	<4.2	<4.2
10/2011			<6.2	**-**	<6.2	6.2	<6.2	<6.2	<6.2	<6.2	<6.2	<6.2	<6.2	<6.2	<6.2	<6.2	<6.2
9/1999	Vanadium (ug/l)	No Standard	10.7 B	0.82 B	ND	ND	1.7 B	-	-	-	-	-	-	-	-	-	-
11/2001			15.3 B	27.7 B	5.9 B	<2.6	3.0 B	144	<2.6	237	8.0 B	50.5	2.9 B	47.9 B	-	-	-
3/2002			37.2 B	4.0 B	2.7 B	<1.5	2.4 B	22.2 B	<1.5	26.1 B	<1.5	11.9 B	56.3	22.5 B	-	-	-
6/2009			2.8 B (<2.8 U)	3.5 B (<3.5 U)	3.5 B (<3.5 U)	<0.96	<0.96	13.6 B (<13.6 U)	<0.96	6.4 B (<6.4 U)	<0.96	2.0 B (<2.0 U)	<0.96	8.9 B (<8.9 U)	-	<0.96	<0.96
10/2011			2.5 B (J)	-	4.3 B (4.3)	<1.1	<1.1	15.0 B (J)	<1.1	3.6 B (J)	<1.1	1.8 B (J)	2.9 B (J)	3.3 B (J)	59.2	7.4 B (J)	<1.1
11/6/1985	Zinc (ug/l)	2,000 (GV)	43	17	22	23	36	-	-	-	-	-	-	-	-	-	-
3/21/1990			<10	<10	<10	<10	20	-	-	-	-	-	-	-	-	-	-
9/1999			20.6	20.7	12.3 B	12.3 B	14.9 B	-	-	-	-	-	-	-	-	-	-
11/2001			32.7 E (J)	80.6 E (J)	25.5 E (J)	17.7 BE (J)	15.9 BE (J)	267 E (J)	17.7 BE (J)	445 E (J)	24.8 E (J)	113 E (J)	25.3 E (J)	79.5 E (J)	-	-	-
3/2002			88.6	31.9	31	35.5	17.3 B	82.8	28.7	74.8	25.2	31.9	288	61.7	-	-	-
6/2009			8.4 B (<8.4 U)	22.1 B (<22.1 U)	19.4 B (<19.4 U)	9.0 B (<9.0 U)	11.7 B (<11.7 U)	26.4 B (<26.4 U)	16.7 B (<16.7U)	15.3 B (<15.3 U)	14.7 B (<14.7 U)	27.8 B (<27.8 U)	11.0 B (<1.0 U)	16.7 B (<16.7 U)	-	8.4 B (<8.4 U)	15.4 B
10/2011			11.0 B (<11.0 U)	-	26.8 B (<26.8 U)	11.0 B (<11.0 U)	22.7 B (<22.7 U)	31.3 B (<31.3 U)	19.1 B (<19.1 U)	40.7 B (<40.7 U)	17.5 B (<17.5 U)	22.4 B (<22.4 U)	33.3 B (<33.3 U)	21.1 B (<21.1 U)	111	72.3 (<72.3 U)	11.2 B (<11.2 U)
	Volatile Organics																
11/15&18/1996	Acetone (ug/l)	50	14	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
9/1999			5.0 J	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	-
3/2002			<5.8	<5.8	<5.8	<5.8	<5.8	<5.8	<5.8	<5.8	<5.8	<5.8	<5.8	<5.8	-	-	-
8/2002			<3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 (UJ)	<5.0 (UJ)	<5.0 (UJ)	<5.0 (UJ)	<5.0 (UJ)	<5.0 (UJ)	-	<5.0 (UJ)	<5.0 (UJ)
10/2011			<5.0 (J)	-	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)	<5.0 (J)
3/21/1990	Benzene (ug/l)	1.0	**5.0**	<1.0	<1.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
11/15&18/1996			**4.0 J**	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
9/1999			**3.0 J**	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
11/2001			**4.0 J**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	-
3/2002			**1.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
8/2002			**3.5 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			**2.6 J**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**1.9 J**	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0
10/2011			**2.6 J**	-	<5.0	<5.0	<5.0	<5.0	<5.0	**2.3 J**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

TABLE 1.3-1
HISTORICAL, AND PRE AND POST REMEDIAL ACTION GROUNDWATER SAMPLING RESULTS - VALIDATED
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sampling Date	Parameter	NYSDEC Standard [1]	MW-101-1	MW-101-2[2]	MW-101-3	MW-101-4	MW-101-5	MW-101-6S	MW-101-6I	MW-101-7S	MW-101-7I	MW-101-8S(R)[3]	MW-101-8I(R)[3]	MW-101-10S(R)[3]	MW-2S	FDGW01	EBGW01
3/21/1990	Chlorobenzene (ug/l)	5.0	**12**	<1.0	<1.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
11/15&18/1996			**19**	<5.0	<5.0	<5.0	2.0 J	-	-	-	-	-	-	-	-	-	-
9/1999			**19**	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
11/2001			**18**	<10	<10	<10	3.0 J	<10	<10	<10	<10	<10	<10	<10	-	-	-
3/2002			4.6	<1.0	<1.0	<1.0	4.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
8/2002			**11**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			**28**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	3.3 J	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0
10/2011			**19**	-	<5.0	<5.0	<5.0	<5.0	<5.0	2.7 J	<5.0	<5.0	<5.0	<5.0	3.6 J	<5.0	<5.0
11/2001	Chloroform (ug/l)	7.0	<10	<10	<10	<10	<10	<10	<10	<10	**18**	<10	<10	<10	-	-	-
2/2002			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
8/2002			<0.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0
10/2011			<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
3/21/1990	P-Dichlorobenzene (ug/l)	3.0	2.0	<1.0	NA	NA	NA	-	-	-	-	-	-	-	-	-	-
11/15&18/1996	1,4-Dichlorobenzene (ug/l)	3.0	**4.0 J**	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
9/1999			0.5	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	-
3/2002			<1.0	<1.0	<1.0	<1.1	<1.0	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	-	-	-
8/2002			<0.93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			**5.1**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.0 J	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0
10/2011			**3.4 J**	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/15&18/1996	1,2-Diclorobenzene (ug/l)	3.0	2.0 J	<5.0	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-	-	-
11/2001			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	-
3/2002			<1.0	<1.0	<1.0	<1.1	<1.0	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	-	-	-
8/2002			<0.88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			1.1 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.2 J	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0
10/2011			<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
3/21/1990	cis-1,2-Dichloroethene (ug/l)	5.0	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			**8.8 J**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	-
3/2002			**11**	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	-	-	-
8/2002			**8.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0
10/2011			<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
9/1999	Methylene Chloride (ug/l)	5.0	1.0 J	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	-
3/2002			<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	-	-	-
8/2002			<1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0
10/2011			<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/2001	Methyl tert-butyl Ether (ug/l)	10 (GV)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	-
3/2002			**140**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
8/2002			**35**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0
10/2011			<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
3/21/1990	Tetrachloroethene (ug/l)	5.0	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			**8.4 J**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	-
3/2002			1.6 J	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	-	-	-
8/2002			<0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-	-	-
6/2009			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0
10/2011			<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
11/6/1985	Halogenated Organic scan (ug/l)	No Standard	0.81	0.15	0.12	0.8	4.0	-	-	-	-	-	-	-	-	-	-
	PCBs																
11/6/1985	Total PCBs (ug/l)	0.09	**4.8**	<1	<0.2	<1	**62**	-	-	-	-	-	-	-	-	-	-
3/21/1990			<0.5	<0.5	<0.5	<0.5	**18**	-	-	-	-	-	-	-	-	-	-
11/15&18/1996			**0.58**	<0.5	<0.5	**0.21 J**	**5.5**	-	-	-	-	-	-	-	-	-	-
9/1999			**18.8**	**3.31**	ND	**2.73**	**49.1**	-	-	-	-	-	-	-	-	-	-
9/2000			**0.546**	**0.562**	ND	**1.62**	**4.78**	-	-	-	-	-	-	-	-	-	-
11/2001			**1.2**	<2.0	<2.0	**0.87**	**7.4**	<2.0 (J)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	-	-
3/2002			<0.56	<0.5	<0.54	<0.5	**3.5**	<0.56	<0.56	<0.5	<0.5	<0.5	<0.51	<0.53	-	-	-
6/2009			**1.0**	<1.0	<1.0	<1.0	**10**	<1.0	<1.0	**5.6**	<1.0	<1.0	<1.0	<1.0	-	**12**	<1.0
10/2011			<1.0	-	<1.0	<1.0	**8.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**3.6**	<1.0	<1.0

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HISTORICAL, AND PRE AND POST REMEDIAL ACTION GROUNDWATER SAMPLING RESULTS - VALIDATED
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sampling Date	Parameter	NYSDEC Standard [1]	MW-101-1	MW-101-2[2]	MW-101-3	MW-101-4	MW-101-5	MW-101-6S	MW-101-6I	MW-101-7S	MW-101-7I	MW-101-8S(R)[3]	MW-101-8I(R)[3]	MW-101-10S(R)[3]	MW-2S	FDGW01	EBGW01
11/6/1985	PCB Aroclor 1016	0.09	-	-	-	<4.0	**62**	-	-	-	-	-	-	-	-	-	-
3/21/1990	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
11/15&18/1996			<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
9/1999			ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
9/2000			ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-
11/2001			<1.0	<1.0	<1.0	<1.0 (J)	<1.0	<1.0 (J)	<1.0	<1.0	<1.0	<1.0 (J)	<1.0	<1.0	-	-	-
3/2002			<0.56	<0.5	<0.54	<0.5	<0.5	<0.56	<0.56	<0.5	<0.5	<0.5	<0.51	<0.53	-	-	-
6/2009			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0
10/2011			<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11/6/1985	PCB Aroclor 1232	0.09	**4.8**	<1.0	-	<8.0	<40	-	-	-	-	-	-	-	-	-	-
11/15&18/1996	(ug/l)		<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-
11/2001			<1.0	<1.0	<1.0	<1.0 (J)	<1.0	<1.0 (J)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
3/2002			<0.56	<0.5	<0.54	<0.5	<0.5	<0.56	<0.56	<0.5	<0.5	<0.5	<0.51	<0.53	-	-	-
6/2009			**1.0**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**5.6**	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0
10/2011			<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11/6/1985	PCB Aroclor 1242	0.09	-	-	<0.2	<4.0	<40	-	-	-	-	-	-	-	-	-	-
3/21/1990	(ug/l)		<0.5	<0.5	<0.5	<0.5	**18**	-	-	-	-	-	-	-	-	-	-
11/15&18/1996			**0.58**	<0.5	<0.5	**0.21 J**	**5.5**	-	-	-	-	-	-	-	-	-	-
9/1999			**18.8 J**	**3.31**	ND	**2.73**	**49.1**	-	-	-	-	-	-	-	-	-	-
9/2000			**0.546**	**0.562**	ND	**1.62**	**4.78**	-	-	-	-	-	-	-	-	-	-
11/2001			**1.2**	<1.0	<1.0	**0.87 J**	**7.4**	<1.0 (J)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
3/2002			<0.56	<0.5	<0.54	<0.5	**3.5**	<0.56	<0.56	<0.5	<0.5	<0.5	<0.51	<0.53	-	-	-
6/2009			<1.0	<1.0	<1.0	<1.0	**10**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	**12**	<1.0
10/2011			<1.0	-	<1.0	<1.0	**8.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**3.6**	<1.0	<1.0

Notes:

[1] NYSDEC TOGS 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998, and Addenda dated April 2000 and June 2004.

[2] Monitoring well MW-101-2 was abandoned in 2010 as part of the Remedial Construction.

[3] Monitoring wells MW-101-8S, MW-101-8I and MW-101-10S were abandoned in 2010 as part of the Remedial Construction, and were replaced in 2011 with wells MW-101-8S(R), MW-101-8I(R), and MW-101-10S(R), respectively.

This table summarizes detections only and does not present all of the analyses performed. The validated data only applies to the June 2009 and October 2011 sampling event results.

Test results for 11/6/1985 came from Glens Falls Landfill, Phase II Investigation Report, dated February 1987 by Recra Research, Inc.

Test results for 3/21/1990 came from Monitoring Well Testing and Analysis, Glens Falls Landfill Site (CHA Project NO: 2049-07.01).

Test results for 11/15/1996 and 11/18/1996 came from Supplemental Sampling Project, Glens Falls Landfill Site, dated March 12, 1997 by NYSDEC.

Test results for 9/1999 and 9/2000 came from Draft Table 5-6 Luzerne Road Groundwater Sample Analytical Test Results provided by NYSDEC.

Test results for 11/2001, 3/2002 and 8/2002 came from Remedial Investigation Report, Glens Falls Municipal Landfill at Luzerne Road, dated October 7, 2002 by C.T. Male Associates, P.C.

Test results for 6/2009 from samples collected June 23, 24 and 25, 2009 by C.T. Male Associates prior to Remedial Construction.

Test results for 10/2011 from samples collected October 5 ad 6, 2011 by C.T. Male Associates after Remedial Construction.

FDGW01 collected at the following locations: 6/09 at MW-101-5; and 10/11 at MW-101-10S(R).

EBGW01 collected at the following locations prior to purging and sampling: 6/09 at MW-101-6I; and 10/11 at MW-101-7I.

GV denotes guidance value versus standard value.

NA denotes not analyzed.

ND denotes non detect.

** indicates duplicate analysis not within control limit.

B indicates analyte result between instrument detection limit (IDL) and contract required detection limit (CRDL).

E indicates reported value is estimated because of the presence of interference.

GS1 indicates sample dilution required for high concentration of target analytes to be within instrument calibration range.

J indicates an estimated value.

N indicates spiked sample recovery not within control limits.

The qualifier in parentheses is the data validator's qualifier (J = estimated value, UJ = analyte was not detected and the value is considered estimated, < = the result is considered not detected due to blank contamination and the detection level has been elevated to the amount detected in the sample).

TABLE 1.3-2
PRE-REMEDIAL ACTION SOIL GAS AND AMBIENT AIR SAMPLING RESULTS - VALIDATED
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

	Outside Ambient Air Samples			Soil Gas Samples							
Parameter	**OA AIR-1** (Northeast of Landfill, near Jean Travers Property)	**OA AIR-2** (Southeast of Landfill Between TS and A&Q Holdings Property)	**OA AIR-3** (On Eastern Landfill Surface near MW-101-8S)	**SG-1** (On Eastern Landfill Surface near MW-101-8S)	**SG-2** (East of Landfill near MW-101-5)	**SGFD01** (Field Duplicate Taken at SG-2)	**SG-3** (Northeast of Landfill near Jean Travers Property)	**SG-4** (Southeast of Landfill on A&Q Holdings Property)	**SG-5** (South of Landfill on South Side of Transfer Station Area)	**SG-6** (North of Landfill on Northway Self Storage Property)	**Transport Blank**
1,1,1-Trichloroethane	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	1.3	<0.83	<0.83	<0.83	<0.83
1,2,4-Trimethylbenzene	2.8	3.4	2.3	8.0	17	13	14	7.0 J	9.5	16 (J)	<0.75
1,2-Dichloroethane	<0.62	<0.62	<0.62	0.45 J	0.78	0.62	2.5	0.58 J	0.66	2.4	<0.62
1,3,5-Trimethylbenzene	0.60 J	0.9	0.55 J	3.3	7.1	6.4	7.9	3.0	3.6	7.4 (J)	<0.75
1,3-Dichlorobenzene	<0.92	<0.92	<0.92	<0.92	1.9	1.5	1.3	<0.92	0.79 J	2.9	<0.92
1,4-Dichlorobenzene	1.1	1.2	0.67 J	2.4	1.0	1.0	0.67 J	0.92	1.6	0.86 J	<0.92
2,2,4-Trimethylpentane	<0.71	<0.71	<0.71	6.6	10	10	4.2	4.7	6.6	8.9 (J)	<0.71
4-Ethyltoluene	0.90	1.3	0.85	7.9	6.0 J	10	8.7	5.5	6.9	13 (J)	<0.75
Acetone	33	44	35	180	500	440	150	370	410	170 (J)	<0.72
Benzene	0.39 J	0.55	0.52	5.7	5.2 (J)	4.2 (J)	7.5	1.4	2.1	5.8	<0.49
Bromomethane	<0.59	<0.59	<0.59	0.47 J	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
Carbon disulfide	<0.47	<0.47	<0.47	21	1.3	1.3	0.44 J	0.82	1.6	0.82	<0.47
Carbon tetrachloride	0.70	0.77	0.83	0.77 J	0.77 J	0.70 J	0.70 J	<0.96	0.70 J	0.77 J	<0.26
Chlorobenzene	<0.70	<0.70	<0.70	0.66 J	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70 (UJ)	<0.70
Chloroethane	<0.40	<0.40	<0.40	13	<0.40	<0.40	<0.40	<0.40	<0.40	0.27 J	<0.40
Chloroform	<0.74	<0.74	0.69 J	0.69 J	2.4	1.9	0.55 J	1.9	0.89	0.55 J	<0.74
Chloromethane	1.2	1.3	1.2	<0.31	0.82	0.69	11	1.3	1.2	1.9	<0.31
cis-1,2-Dicloroethene	<0.60	<0.60	<0.60	0.97	4.2 (J)	<0.60 (UJ)	<0.60	<0.60	<0.60	<0.60	<0.60
Cyclohexane	13	<0.52	<0.52	110	10 (J)	17 (J)	<0.52	<0.52	22	47 (J)	<0.52
Ethyl acetate	0.51 J	<0.92	<0.92	12	1.9 (J)	<0.92 (UJ)	2.4	<0.92	1.9	2.9	<0.92
Ethylbenzene	0.49 J	0.66	0.53 J	5.6	12	9.7	9.3	3.4	5.5	11 (J)	<0.66
Freon 11	3.5	3.8	3.5	6.1	6.0	6.6	7.2	4.1	6.1	120	<0.86
Freon 113	1.1 J	1.1 J	1.0 J	1.1 J	1.2	1.2	1.1 J	1.0 J	1.3	0.93 J	<1.2
Freon 114	<1.1	<1.1	<1.1	270	<1.1 (UJ)	0.92 J	120	9.2	7.2	14	<1.1
Freon 12	4.2	4.4	4.3	41	4.3	4.8	24	5.9	14	390 (J)	<0.75
Heptane	<0.62	1.2	<0.62	18	10	6.7	7.5	2.8	3.7	6.7 (J)	<0.62
Hexane	<0.54	<0.54	<0.54	30	9.3	7.5	<0.54	<0.54	4.5	7.5 (J)	<0.54
Isopropyl alcohol	2.7	1.9	13	<0.37	32 (J)	25 (J)	16	23	26	21 (J)	<0.37
m&p-Xylenes	1.3 J	1.7	1.4	14	34	29	25	10	18	33 (J)	<1.3
Methyl Ethyl Ketone (MEK)	1.1	1.5	0.99	17	4.1	6.3	7.8 J	6.4	7.2 J	8.4 J	<0.90
Methyl Isobutyl Ketone	<1.2 (UJ)	<1.2 (UJ)	<1.2 (UJ)	7.8 (J)	<1.2 (UJ)	<1.2 (UJ)	1.9 (J)	1.3 (J)	<1.2 (UJ)	<1.2 (UJ)	<1.2 (UJ)
Methylene Chloride	0.49 J	0.46 J	0.42 J	18	4.6 (J)	1.1(J)	2.2	3.0	4.0	2.2	<0.53
o-Xylene	<0.66	0.66	0.53 J	4.9	12	10	9.7	4.4	7.8	11 (J)	<0.66
Styrene	<0.65 (UJ)	<0.65	<0.65	2.3	5.5	5.2	5.1	1.4	2.3	6.5 (J)	<0.65
Tetrachloroethylene	<1.0	1.3	<1.0	1.9	2.1 (J)	<1.0 (UJ)	1.3	<1.0	0.97 J	0.83 J	<1.0
Tetrahydrofuran	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	3.5	<0.45	<0.45	6.7	<0.45
Toluene	1.6	3.1	2.7	25	61 (J)	42 (J)	36	15	20	37 (J)	<0.57
Trichloroethene	<0.22	0.6	0.66	2.4	9.8 (J)	1.1 (J)	0.87	0.60 J	0.93	<0.82	<0.22
Vinyl Chloride	<0.10	<0.10	<0.10	27	0.42 (J)	<0.39 (UJ)	<0.39	<0.39	<0.39	0.31 J	<0.10
4-Gas Meter											
Percent Oxygen	20.9	20.9	20.9	2.1	19.1	-	18.3	19.3	18.5	17.5	-
Hydrogen Sulfide, ppm	0	0	0	0	0	-	0	0	0	0	-
Percent LEL	0	0	0	>100	0	-	0	0	0	0	-
Percent Methane[(1)]	0	0	0	>5	0	-	0	0	0	0	-

Notes:

All values reported in ug/m^3. Samples collected June 30, 2009 by C.T. Male Associates, P.C. prior to Remedial Construction.

< = Less than the associated laboratory reporting limit.

J = Estimated value.

The qualifier in parentheses is the data validator's qualifier (J = estimated value, UJ = analyte was not detected and the value is considered estimated).

ppm = parts per million; LEL = Lower Explosive Limit.

(1) The 4-gas meter used was calibrated with Methane, so Percent LEL = Percent LEL Methane. Percent Methane is calculated by multiplying Percent LEL by 5%.

TABLE 1.4.3-1
SUMMARY OF CONTAMINATED MATERIALS AND WASTES IDENTIFICATION, REMOVAL FROM SITE, TRANSPORTATION AND DISPOSAL OFF-SITE
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Waste Type	Quantity	Disposal Classification	Date Waste Removed From Site	Transporter	Transporter Permit No.	Treatment, Storage or Disposal Facility	Treatment, Storage or Disposal Facility Permit No.
Blue-Green Waste Solid Material and Soil	1 cubic yard box 1 55-gallon drum	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, III, (D008)	4/5/2010	Frank's Vacuum Truck Service, Inc.	6 NYCRR Part 364 Permit No. 9A-332 EPA ID No. NYD982792814	CWM Chemical Services, LLC Model City, NY	NYSDEC Permit No. 9-2934-00022/00097 EPA ID No. NYD049836679
Black Tar-Like Material and Soil	1 55-gallon drum	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, III (D008)	4/5/2010	Frank's Vacuum Truck Service, Inc.	6 NYCRR Part 364 Permit No. 9A-332 EPA ID No. NYD982792814	CWM Chemical Services, LLC Model City, NY	NYSDEC Permit No. 9-2934-00022/00097 EPA ID No. NYD049836679
Multi-Colored Waste Solid Material	1 cubic yard box 2 55-gallon drums	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, III (D040, D008)	4/5/2010	Frank's Vacuum Truck Service, Inc.	6 NYCRR Part 364 Permit No. 9A-332 EPA ID No. NYD982792814	CWM Chemical Services, LLC Model City, NY	NYSDEC Permit No. 9-2934-00022/00097 EPA ID No. NYD049836679
Hard Red Glass-Like Solid Material	4 cubic yard boxes	RQ, Hazardous Waste Solid, N.O.S., 9, NA3077, III (F002, F003)	4/5/2010	Frank's Vacuum Truck Service, Inc.	6 NYCRR Part 364 Permit No. 9A-332 EPA ID No. NYD982792814	CWM Chemical Services, LLC Model City, NY	NYSDEC Permit No. 9-2934-00022/00097 EPA ID No. NYD049836679
Soil With Residual Oil	1 drum	RQ, Hazardous Waste Solid, N.O.S, 9, NA3077, III (D008)	7/28/2010	Frank's Vacuum Truck Service, Inc.	6 NYCRR Part 364 Permit No. 9A-332 EPA ID No. NYD982792814	CWM Chemical Services, LLC Model City, NY	NYSDEC Permit No. 9-2934-00022/00097 EPA ID No. NYD049836679
Non-Hazardous Industrial Solid Waste – Soil With Grease	1 drum	Non DOT Regulated Material	7/28/2010	Frank's Vacuum Truck Service, Inc.	6 NYCRR Part 364 Permit No. 9A-332 EPA ID No. NYD982792814	CWM Chemical Services, LLC Model City, NY	NYSDEC Permit No. 9-2934-00022/00097 EPA ID No. NYD049836679

TABLE 1.4.3-1
SUMMARY OF CONTAMINATED MATERIALS AND WASTES IDENTIFICATION, REMOVAL FROM SITE, TRANSPORTATION AND DISPOSAL OFF-SITE
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Waste Type	Quantity	Disposal Classification	Date Waste Removed From Site	Transporter	Transporter Permit No.	Treatment, Storage or Disposal Facility	Treatment, Storage or Disposal Facility Permit No.
Miscellaneous Non-Hazardous Industrial Solid Waste and Debris (solid white material, drum fragments, soil)	8 drums	Non DOT Regulated Material	7/28/2010	Frank's Vacuum Truck Service, Inc.	6 NYCRR Part 364 Permit No. 9A-332 EPA ID No. NYD982792814	CWM Chemical Services, LLC Model City, NY	NYSDEC Permit No. 9-2934-00022/00097 EPA ID No. NYD049836679
Miscellaneous Non-Hazardous Industrial Solid Waste and Debris (solid white material, drum fragments, soil, PPE, metal shavings/ filings, poly tarps, rags)	2 roll-offs (23.07 tons)	Non Regulated Material	4/19/2010 and 5/3/2010	Silvarole Trucking, Inc.	6 NYCRR Part 364 Permit No. 8A-190 EPA ID No. NYR000163691	WM of New York at High Acres Landfill Fairport, NY	NYSDEC Permit No. 8-2644-00048/00032
PCB Capacitor	1 55-gallon drum	UN3432, Polychlorinated Biphenyls, Solid, (Capacitors), 9, II (B005)	4/19/2010	Clean Harbors Environmental Services, Inc.	6 NYCRR Part 364 Permit No. MA-006 EPA ID No. MAD039322250	Clean Harbors PPM LLC Twinsburgh, OH	OHIO EPA Permit No. P0103532 EPA ID No. OHD986975399
PCB Contaminated Soil (≥ 50 ppm)	1 roll-off (23.13 tons)	RQ, Polychlorinated Biphenyls, Solid Mixture, 9, UN3432, III (B007)	7/28/2010	Buffalo Fuel Corp.	6 NYCRR Part 364 Permit No. 9A-545 EPA ID No. NYR000045724	CWM Chemical Services, LLC Model City, NY	NYSDEC Permit No. 9-2934-00022/00097 EPA ID No. NYD049836679
Decontamination Water	1585 gallons	None, Non DOT Regulated Material (Decon Water), N/A	7/1/2010	Clean Harbors Environmental Services, Inc.	6 NYCRR Part 364 Permit No. MA-006 EPA ID No. MAD039322250	Clean Harbors of Connecticut, Inc.	EPA ID No. CTD000604488
Monitoring Well Development/Purge Water (June 2009 Sampling Event)	4 55-gallon drums	None, Non DOT Regulated Material (Groundwater), N/A	8/3/2010	Clean Harbors Environmental Services, Inc.	6 NYCRR Part 364 Permit No. MA-006 EPA ID No. MAD039322250	Clean Harbors Chattanooga LLC	EPA ID No. TND982141392

TABLE 1.4.3-1
SUMMARY OF CONTAMINATED MATERIALS AND WASTES IDENTIFICATION, REMOVAL FROM SITE, TRANSPORTATION AND DISPOSAL OFF-SITE
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Waste Type	Quantity	Disposal Classification	Date Waste Removed From Site	Transporter	Transporter Permit No.	Treatment, Storage or Disposal Facility	Treatment, Storage or Disposal Facility Permit No.
Equipment Decon Pad Debris (poly sheeting, geotextile fabric, HDPE liner, PPE, cut up poly tank, bailers/sampling equipment, concrete catch basin, soil/ sediment/crushed stone, soil cuttings from MW-2D(R))	4 roll-offs (87.066 tons)	Hazardous Waste Solid, N.O.S., 9, NA3077, III (D008, D040, F002, F003)	11/4/2010 and 11/5/2010	Buffalo Fuel Corp.	6 NYCRR Part 364 Permit No. 9A-545 EPA ID No. NYR000045724	CWM Chemical Services, LLC Model City, NY	NYSDEC Permit No. 9-2934-00022/00097 EPA ID No. NYD049836679
Scrap Metal For Recycling (steel guard pipes from abandoned monitoring wells)	7 guard pipes	Scrap Metal for Recycling	11/5/2010	Kubricky Construction Corp.	NA	Queensbury Transfer Station, Queensbury, NY	NA
Monitoring Well Development/Purge Water (October 2011 Sampling Event)	6 55-gallon drums	None, Non DOT Regulated Material (Groundwater), N/A	11/22/2011	Clean Harbors Environmental Services, Inc.	6 NYCRR Part 364 Permit No. MA-006 EPA ID No. MAD039322250	Clean Harbors Chattanooga LLC	EPA ID No. TND982141392
Soil Drill Cuttings/ PPE/Sampling Debris (poly sheeting, bailers, poly tubing, gloves)	4 55-gallon drums	None, Non DOT Regulated Material (Soil, PPE, Etc.), N/A	11/22/2011	Clean Harbors Environmental Services, Inc.	6 NYCRR Part 364 Permit No. MA-006 EPA ID No. MAD039322250	Spring Grove Resource Recovery, Inc. Cincinnati, OH	EPA ID No. OHD000816629

TABLE 1.4.3-2
SUMMARY OF POST-EXCAVATION SOIL SAMPLING RESULTS - TEMPORARY SEDIMENT TRAP #7B AREA
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

	Sample Collection Date:	**1/5/2010**	**1/5/2010**		**1/5/2010**
	Sample ID:	**PE-7B-1**	**PE-7B-2**	**DUP-1**	**PE-7B-3**
	Northing NAD83[1] U.S. Survey Ft.:	**1630134.369**	**1630161.364**		**1630155.157**
	Easting NAD83[1] U.S. Survey Ft.:	**711918.905**	**711901.535**		**711878.350**
	Elevation[2]:	**365.11**	**365.71**		**363.4**
PARAMETER [3]	**PART 375 Unrestricted Use Soil Cleanup Objective Values [4]**				
TAL Metals, mg/kg:					
Silver	2	0.0761 B	<0.34	<0.36	<0.41
Aluminum	NS	3760	3180	4240	3640
Barium	350	12	10.3	12.5	16.7
Beryllium	7.2	0.227 B	0.226 B	0.256 B	0.185 B
Calcium	NS	1750	1870	1670	1830
Cadmium	2.5	0.0882 B	0.0427 B	0.0759 B	0.178 B
Cobalt	NS	2.86	2.81	3.76	2.89
Chromium	1 / 30 [6]	**3.98 ***	**2.90 ***	**4.48 ***	**3.82 ***
Copper	50	3.38	3.15	3.94	4.00
Iron	NS	9480	10200	11300	8710
Potassium	NS	250	265	318	303
Magnesium	NS	1950 *	1180 *	1870 *	1560 *
Manganese	1600	65.5 N	58.9 N	64.3 N	49.2 N
Sodium	NS	205 N	178 N	253 N	187 N
Nickel	30	3.67	4.48	5.49	15.9
Lead	63	1.65	0.63	<0.36	13.9
Antimony	NS	<3.4	0.596 B	0.616 B	<4.1
Vanadium	NS	10.9	17.4	19.5	115
Zinc	109	46.5	62.3	76.7	**122**
TCL Volatile Organic Compounds (VOCs), ug/kg:					
None Detected	-	-	-	-	-
TCL Semi-Volatile Organic Compounds (SVOCs), ug/kg:					
None Detected	-	-	-	-	-
TCL Polychlorinated Biphenyls (PCBs), mg/kg:					
Aroclor-1248	1 / 10 [5]	1.4	0.18	<0.17	0.39

Notes:

ug/kg denotes micrograms per kilogram or parts per billion (ppb).

mg/kg denotes milligrams per kilogram or parts per million (ppm).

B indicates the reported value was obtained from a reading that was less than the Reporting Level (RL) but greater than or equal to the Instrument Detection Limit (IDL).

N indicates spiked sample recovery not within control limits.

* Indicates duplicate analysis not within control limits.

Results are presented on a dry weight basis.

[1] North orientation and bearings are based on the New York State Plane Coordinate System, East Zone, North American Datum (NAD) 1983. Obtained through GPS observations.

[2] Vertical datum established from National Geodetic Vertical Datum (N.G.V.D.) 1988. Obtained through GPS observations.

[3] Only the compounds that were detected are listed.

[4] NYSDEC 6NYCRR PART 375-6.8, Environmental Remediation Program Soil Cleanup Objective Tables, Dated December 14, 2006.

[5] TAGM 4046: NYSDEC Determination of Soil Cleanup Objectives and Cleanup Levels, January 1994 and Addenda dated December 20, 2000, April 10, 2001 and July 10, 2001. The PCB soil cleanup objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.

[6] The Part 375-6.8 Unrestricted Use Soil Cleanup Objective is 1 mg/kg for hexavalent chromium and 30 mg/kg for trivalent chromium.

Values in **BOLD** exceed their soil cleanup objective value.

TABLE 1.4.3-2
SUMMARY OF POST-EXCAVATION SOIL SAMPLING RESULTS - TEMPORARY SEDIMENT TRAP #7B AREA
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sample Collection Date:		**1/5/2010**	**1/5/2010**		**1/5/2010**	**2/2/2010**	**2/2/2010**	**2/2/2010**
Sample ID:		**PE-7B-1**	**PE-7B-2**	**DUP-1**	**PE-7B-3**	**PE-7B-4**	**PE-7B-5**	**PE-7B-6**
Northing NAD83[1] U.S. Survey Ft.:		**1630134.369**	**1630161.364**		**1630155.157**	**1630119.733**	**1630089.725**	**1630057.854**
Easting NAD83[1] U.S. Survey Ft.:		**711918.905**	**711901.535**		**711878.350**	**711914.850**	**711916.830**	**711909.810**
Elevation[2]:		**365.11**	**365.71**		**363.40**	**364.550**	**364.288**	**364.132**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	1.4	0.18	<0.17	0.39	0.40	0.44	0.36

Sample Collection Date:		**2/2/2010**	**2/2/2010**	**2/2/2010**	**2/2/2010**	**2/2/2010**	**2/2/2010**
Sample ID:		**PE-7B-7**	**PE-7B-8**	**PE-7B-9**	**PE-7B-10**	**PE-7B-11**	**PE-7B-12**
Northing NAD83[1] U.S. Survey Ft.:		**1630046.623**	**1630077.002**	**1630107.078**	**1630107.210**	**1630077.686**	**1630042.160**
Easting NAD83[1] U.S. Survey Ft.:		**711882.794**	**711881.631**	**711881.531**	**711858.534**	**711854.100**	**711858.507**
Elevation[2]:		**365.290**	**364.336**	**364.606**	**364.707**	**365.016**	**365.552**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**						
TCL Polychlorinated Biphenyls (PCBs), mg/kg:							
Aroclor-1248	1 / 10 [5]	<0.34	<0.34	0.40	<0.34	<0.34	<0.34

Notes:

mg/kg denotes milligrams per kilogram or parts per million (ppm).
Results are presented on a dry weight basis.

[1] North orientation and bearings are based on the New York State Plane Coordinate System, East Zone, North American Datum (NAD) 1983. Obtained through GPS observations.

[2] Vertical datum established from National Geodetic Vertical Datum (N.G.V.D.) 1988. Obtained through GPS observations.

[3] Only the compounds that were detected are listed in the table. Samples were analyzed for Aroclor-1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262 and 1268.

[4] TAGM 4046: NYSDEC Determination of Soil Cleanup Objectives and Cleanup Levels, January 1994 and Addenda dated December 20, 2000, April 10, 2001 and July 10, 2001.

[5] The TAGM 4046 PCB soil cleanup objective is 1 mg/kg for surface soil and 10 mg/kg for subsurface soil.

TABLE 1.4.3-3
SUMMARY OF POST-EXCAVATION SOIL SAMPLING RESULTS - TEMPORARY SEDIMENT TRAP #7A AREA (EAST BASIN)
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

	Sample Collection Date:	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**
	Sample ID:	**PE-7A-1**	**PE-7A-2**	**PE-7A-3**	**PE-7A-4**	**PE-7A-5**	**PE-7A-6**	**PE-7A-7**
	Northing NAD83[1] U.S. Survey Ft.:	**1630301.540**	**1630270.931**	**1630250.368**	**1630264.669**	**1630281.811**	**1630302.784**	**1630296.307**
	Easting NAD83[1] U.S. Survey Ft.:	**712173.341**	**712188.425**	**712180.918**	**712174.915**	**712168.082**	**712160.828**	**712134.997**
	Elevation[2]:	**374.149**	**373.539**	**375.330**	**370.351**	**369.196**	**374.021**	**375.209**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	<0.33	1	<0.34	<0.34	<0.34	<0.34	<0.35

	Sample Collection Date:	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**
	Sample ID:	**PE-7A-8**	**PE-7A-9**	**PE-7A-10**	**PE-7A-11**	**PE-7A-12**	**PE-7A-13**	**PE-7A-14**
	Northing NAD83[1] U.S. Survey Ft.:	**1630279.058**	**1630258.931**	**1630243.033**	**1630225.648**	**1630247.577**	**1630268.722**	**1630288.020**
	Easting NAD83[1] U.S. Survey Ft.:	**712142.539**	**712150.903**	**712157.842**	**712137.656**	**712127.729**	**712122.441**	**712118.523**
	Elevation[2]:	**370.858**	**368.975**	**373.910**	**376.327**	**368.990**	**370.414**	**375.285**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	<0.34	<0.34	<0.34	<0.34	<0.35	**28** [6]	**42** [6]

	Sample Collection Date:	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**
	Sample ID:	**PE-7A-15**	**PE-7A-16**	**PE-7A-17**	**PE-7A-18**	**PE-7A-19**	**PE-7A-20**	**PE-7A-21**
	Northing NAD83[1] U.S. Survey Ft.:	**1630279.191**	**1630256.834**	**1630233.212**	**1630217.201**	**1630205.505**	**1630232.813**	**1630255.566**
	Easting NAD83[1] U.S. Survey Ft.:	**712094.890**	**712099.283**	**712106.728**	**712112.243**	**712088.691**	**712080.376**	**712073.841**
	Elevation[2]:	**375.062**	**369.083**	**369.714**	**375.152**	**375.474**	**369.014**	**369.550**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	7.2 [6]	4.4 [6]	<0.35	<0.34	<0.35	0.77 [6]	0.95

TABLE 1.4.3-3
SUMMARY OF POST-EXCAVATION SOIL SAMPLING RESULTS - TEMPORARY SEDIMENT TRAP #7A AREA (EAST BASIN)
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sample Collection Date:		**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**
Sample ID:		**PE-7A-22**	**PE-7A-23**	**PE-7A-24**	**PE-7A-25**	**PE-7A-26**	**PE-7A-27**	**PE-7A-28**
Northing NAD83[1] U.S. Survey Ft.:		**1630270.545**	**1630276.044**	**1630241.823**	**1630211.677**	**1630201.525**	**1630237.807**	**1630273.339**
Easting NAD83[1] U.S. Survey Ft.:		**712071.090**	**712045.011**	**712052.984**	**712060.076**	**712035.772**	**712027.186**	**712021.156**
Elevation[2]:		**373.975**	**374.740**	**368.866**	**370.734**	**373.041**	**369.008**	**373.817**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	<0.34	<0.35	3.9 [6]	<0.35	<0.35	1.1 [6]	0.61

Sample Collection Date:		**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**	**4/26/2010**
Sample ID:		**PE-7A-29**	**PE-7A-30**	**PE-7A-31**	**PE-7A-32**	**PE-7A-33**	**PE-7A-34**	**PE-7A-35**
Northing NAD83[1] U.S. Survey Ft.:		**1630265.238**	**1630239.391**	**1630209.821**	**1630217.845**	**1630248.840**	**1630274.875**	**1630233.005**
Easting NAD83[1] U.S. Survey Ft.:		**711995.632**	**712002.507**	**712010.481**	**711981.827**	**711977.822**	**711979.321**	**711950.737**
Elevation[2]:		**371.475**	**368.861**	**369.203**	**368.657**	**368.892**	**374.366**	**373.657**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	<0.34	1.2 [6]	<0.34	2.2 [6]	<0.35	<0.34	0.93

Sample Collection Date:		**4/26/2010**	**5/10/2010**	**5/14/2010**	**5/14/2010**	**5/14/2010**	**5/14/2010**	**5/14/2010**
Sample ID:		**PE-7A-36**	**PE-7A-37**	**PE-7A-37 12-18"**	**PE-7A-37N 0-6"**	**PE-7A-37N 12-18"**	**PE-7A-37E 0-6"**	**PE-7A-37E 12-18"**
Northing NAD83[1] U.S. Survey Ft.:		**1630192.497**	**1630282.9030**		**1630287.560**		**1630284.113**	
Easting NAD83[1] U.S. Survey Ft.:		**711976.323**	**712123.8240**		**712122.973**		**712128.210**	
Elevation[2]:		**373.623**	**371.983**	**-**	**372.848**	**-**	**371.904**	**-**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	<0.36	**58 [8]**	0.43 [7]	<0.36 [7]	0.57 [7]	<0.34 [7]	1.3 [7]

TABLE 1.4.3-3
SUMMARY OF POST-EXCAVATION SOIL SAMPLING RESULTS - TEMPORARY SEDIMENT TRAP #7A AREA (EAST BASIN)
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sample Collection Date:		**5/14/2010**	**5/14/2010**	**5/14/2010**	**5/14/2010**	**7/28/2010**	**7/28/2010**	**7/28/2010**
Sample ID:		**PE-7A-37S 0-6"**	**PE-7A-37S 12-18"**	**PE-7A-37W 0-6"**	**PE-7A-37W 12-18"**	**PE-7A-37 North SW**	**PE-7A-37 East SW**	**PE-7A-37 South SW**
Northing NAD83[1] U.S. Survey Ft.:		**1630277.721**		**1630281.761**		**1630286.818**	**1630282.892**	**1630277.361**
Easting NAD83[1] U.S. Survey Ft.:		**712.124.341**		**712118.739**		**712121.287**	**712127.804**	**712124.824**
Elevation[2]:		**370.565**	**-**	**372.078**	**-**	**371.880**	**370.885**	**369.353**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	<0.34 [7]	<0.34 [7]	<0.34 [7]	0.54 [7]	1.5 * [9]	<0.34 [9]	<0.35 [9]

Sample Collection Date:		**7/28/2010**	**7/28/2010**	**5/10/2010**	**5/10/2010**	**5/10/2010**	**5/10/2010**	**5/10/2010**
Sample ID:		**PE-7A-37 West SW**	**PE-7A-37 Bottom**	**PE-7A-38**	**PE-7A-39**	**PE-7A-40**	**PE-7A-41**	**PE-7A-42**
Northing NAD83[1] U.S. Survey Ft.:		**1630278.659**	**1630281.152**	**1630272.7440**	**1630274.7370**	**1630263.6574**	**1630241.8150**	**1630242.1550**
Easting NAD83[1] U.S. Survey Ft.:		**712116.481**	**712121.967**	**712128.1020**	**712101.1465**	**712106.2575**	**712086.4010**	**712059.0540**
Elevation[2]:		**370.143**	**369.739**	**368.989**	**371.855**	**368.427**	**367.879**	**367.890**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	<0.34 [9]	<0.36 [9]	<0.34	0.76	5.3	<0.35	<0.35

Sample Collection Date:		**5/10/2010**	**5/10/2010**	**5/10/2010**	**5/10/2010**	**5/10/2010**	**5/10/2010**	**5/10/2010**
Sample ID:		**PE-7A-43**	**PE-7A-44**	**PE-7A-45**	**PE-7A-46**	**PE-7A-47**	**PE-7A-48**	**PE-7A-49**
Northing NAD83[1] U.S. Survey Ft.:		**1630228.1775**	**1630223.3263**	**1630244.8690**	**1630242.7910**	**1630220.9242**	**1630218.7310**	**1630237.3569**
Easting NAD83[1] U.S. Survey Ft.:		**712064.0710**	**712038.7191**	**712037.0580**	**712013.8540**	**712012.3875**	**711982.2319**	**711982.7713**
Elevation[2]:		**367.932**	**367.974**	**367.950**	**367.978**	**367.927**	**367.924**	**367.995**
PARAMETER [3]	**TAGM 4046 Guidance Values [4]**							
TCL Polychlorinated Biphenyls (PCBs), mg/kg:								
Aroclor-1248	1 / 10 [5]	<0.36	<0.34	1.1	<0.34	1.1	1.8	<0.35

TABLE 1.4.3-3
SUMMARY OF POST-EXCAVATION SOIL SAMPLING RESULTS - TEMPORARY SEDIMENT TRAP #7A AREA (EAST BASIN)
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

Sample Collection Date:		**5/10/2010**	**5/10/2010**	**5/10/2010**	**5/10/2010**
Sample ID:		**PE-7A-50**	**PE-7A-51**	**PE-7A-52**	**PE-7A-53**
Northing NAD83[(1)] U.S. Survey Ft.:		**1630197.5780**	**1630197.2880**	**1630210.6530**	**1630250.4770**
Easting NAD83[(1)] U.S. Survey Ft.:		**71201.5830**	**711993.2170**	**711957.9770**	**711955.9130**
Elevation[(2)]:		**373.093**	**372.377**	**372.459**	**372.939**
PARAMETER [(3)]	**TAGM 4046 Guidance Values [(4)]**				
TCL Polychlorinated Biphenyls (PCBs), mg/kg:					
Aroclor-1248	1 / 10 [(5)]	<0.34	0.57	1.7	0.75

Notes:

mg/kg denotes milligrams per kilogram or parts per million (ppm).

Results are presented on a dry weight basis.

* Indicates when weathering of PCBs is present and the Aroclor is no longer recognizeable, quantitation may be performed by using the total area of the PCB pattern to that of the Aroclor it mostly resembles. The PCB pattern did not resemble any of the standards, but most closely resembles Aroclor 1248.

(1) North orientation and bearings are based on the New York State Plane Coordinate System, East Zone, North American Datum (NAD) 1983. Obtained through GPS observations.

(2) Vertical datum established from National Geodetic Vertical Datum (N.G.V.D.) 1988. Obtained through GPS observations.

(3) Only the compounds that were detected are listed in the table. Samples were analyzed for Aroclor-1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262 and 1268.

(4) TAGM 4046: NYSDEC Determination of Soil Cleanup Objectives and Cleanup Levels, January 1994 and Addenda dated December 20, 2000, April 10, 2001 and July 10, 2001.

(5) The TAGM 4046 PCB soil cleanup objective is 1 mg/kg for surface soil, and 10 mg/kg for subsurface soil.

(6) Additional soil was excavated and these areas resampled on May 10, 2010.

(7) These soil samples were collected to define the vertical and horizontal extent of PCB contaminated soil at 50 mg/kg or greater around sample PE-7A-37.

(8) Additional soil was excavated and this area resampled on July 28, 2010.

(9) Sampling results after additional soil was excavated around sample location PE-7A-37.

Values in **BOLD** exceed the PCB soil cleanup objective value for subsurface soil.

Table 1.4.5-1:Nature and Extent of Contamination (Table 1 from Record of Decision)

TABLE 1
Nature and Extent of Contamination
{sampling dates; November 2001-August 2002}

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	0.039 to 0.45	0.224	1 of 11
	Benzo(a)pyrene	0.045 to 0.49	0.061	5 of 11
	Chrysene	0.059 to 0.48	0.4	1 of 11
PCB/Pesticides	Aroclor 1254	0.022 to 1.7	1.0	1 of 11
Inorganic Compounds	Mercury	ND to 2.3	0.1	1 of 11
	Zinc	14.7 to 425	20	3 of 11

ASH MATERIAL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	0.099 to 1.1	0.224	2 of 4
	Benzo(a)pyrene	0.088 to 1.6	0.061	4 of 4
	Benzo(b)fluoranthene	0.13 to 2.7	1.1	1 of 4
	Benzo(k)fluoranthene	0.055 to 1.9	1.1	1 of 4
	Chrysene	0.12 to 2.0	0.4	2 of 4
	Dibenzo(a,h)anthracene	0.047 to 0.42	0.42*	1 of 4
Inorganic Compounds	Copper	63.4 to 350	25	3 of 4
	Mercury	0.31 to 1.3	0.1	4 of 4
	Zinc	766 to 2150	20	4 of 4

SEDIMENTS	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
PCB/Pesticides	Aroclor 1254	0.041 to 0.15	0.14	1 of 3

TABLE 1
Nature and Extent of Contamination
{sampling dates; November 2001-August 2002}

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND to 4.0	1.0	3 of 27
	Chlorobenzene	ND to 18	5.0	2 of 27
	Chloroform	ND to 18	7.0	1 of 27
	cis-1,2-Dichloroethene	ND to 11	5.0	3 of 27
	Methyl tert-butyl ether	ND to 140	10.0	2 of 27
	Tetrachloroethene	ND to 8.4	5.0	1 0f 27
PCB/Pesticides				
	Aroclor 1242	ND to 7.4	0.09	4 of 26
Inorganic Compounds	Arsenic	ND to 73.8	25	2 of 26
	Barium	1.7 to 1,740	1,000	1 of 26
	Beryllium	0.3 to 6.9	3	2 of 26
	Chromium	ND to 141	50	2 of 26
	Copper	ND to 209	200	1 of 26
	Iron	195 to 225,000	300	25 of 26
	Lead	ND to 102	25	4 of 26
	Magnesium	1,970 to 87,100	35,000	5 of 26
	Manganese	3.9 to 15,600	300	21 of 26
	Sodium	5,200 to 262,000	20,000	20 of 26

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

[b] SCG = standards, criteria, and guidance values;

ND = Non detect
* SCG based on MDL (method detection limit)

TABLE 3.3.1-1
SUMMARY OF MONITORING WELLS
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

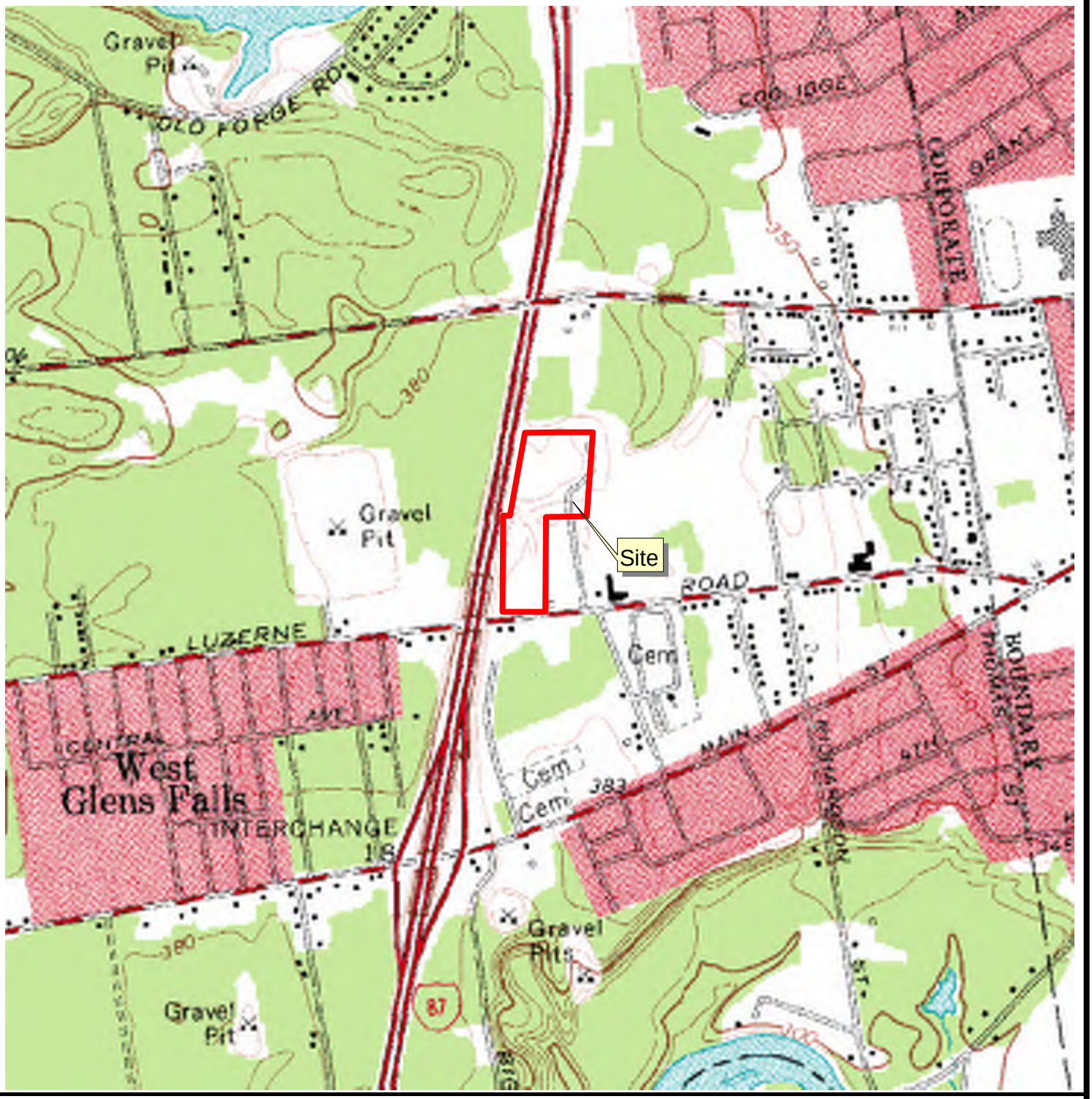
Monitoring Well ID	Type of Well	Ground Elevation (Ft. AMSL)	Top of Steel Guard Pipe Elevation (Ft. AMSL)	TOC Elevation (Ft. AMSL)	10/5/11	
					DTW (Ft. below TOC)	Groundwater Elevation (Ft. AMSL)
MW-101-1	Shallow	380.38	382.41	382.23	19.67	362.56
MW-101-3	Shallow	381.60	383.65	383.60	15.45	368.15
MW-101-4	Shallow	364.64	367.05	366.86	4.70	362.16
MW-101-5	Shallow	377.85	380.66	379.74	16.82	362.92
MW-101-6S	Shallow	377.56	380.40	380.19	16.16	364.03
MW-101-6I	Intermediate	377.43	380.25	379.89	16.03	363.86
MW-101-7S	Shallow	372.18	373.16	372.93	10.24	362.69
MW-101-7I	Intermediate	369.92	372.12	371.78	8.10	363.68
MW-101-8S(R)	Shallow	377.72	380.77	380.62	15.98	364.64
MW-101-8I(R)	Intermediate	377.91	380.29	380.16	16.16	364.00
MW-101-10S(R)	Shallow	369.39	372.17	372.02	4.52	367.50
MW-2S [(1)]	Shallow	377.56	379.24	379.13	14.91	364.22

AMSL is above mean sea level
TOC is top of PVC riser pipe
DTW is depth to water
[(1)] Monitoring well MW-2S is a Luzerne Road Site monitoring well that is being sampled as part of the Glens Falls Landfill groundwater monitoring well network.
NOTE: The elevations are based on a field survey conducted on October 20, 2011 and benchmark consisting of top of NYS right-of-way monument on the north side of Luzerne Road and east of Interstate 87 at elevation 382.16 feet.

LIST OF FIGURES AND DRAWINGS

FIGURE 1

Site Location Map



MAP REFERENCE
USGS Topographic Map
Glens Falls, NY Quadrangle, Dated 2000
7.5 Minute Series, NAD 83
Downloaded from CUGIR on 11/13/07

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ARCHITECTURE &
BUILDING SYSTEMS ENGINEERING
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ENVIRONMENTAL SERVICES
SURVEY & LAND INFORMATION
SERVICES

C.T.MALE ASSOCIATES, P.C.

50 CENTURY HILL DRIVE, PO BOX 727, LATHAM, NY 12110
PHONE (518) 786-7400 FAX (518) 786-7299

FIGURE 1 - SITE LOCATION MAP

Glens Falls Municipal Landfill at Luzerne Road
Remedial Design and Construction

TOWN OF QUEENSBURY	WARREN COUNTY, NY
SCALE: 1"=1,000'	
DRAFTER: JNC	
PROJECT NO: 05.5824	

FIGURE 2

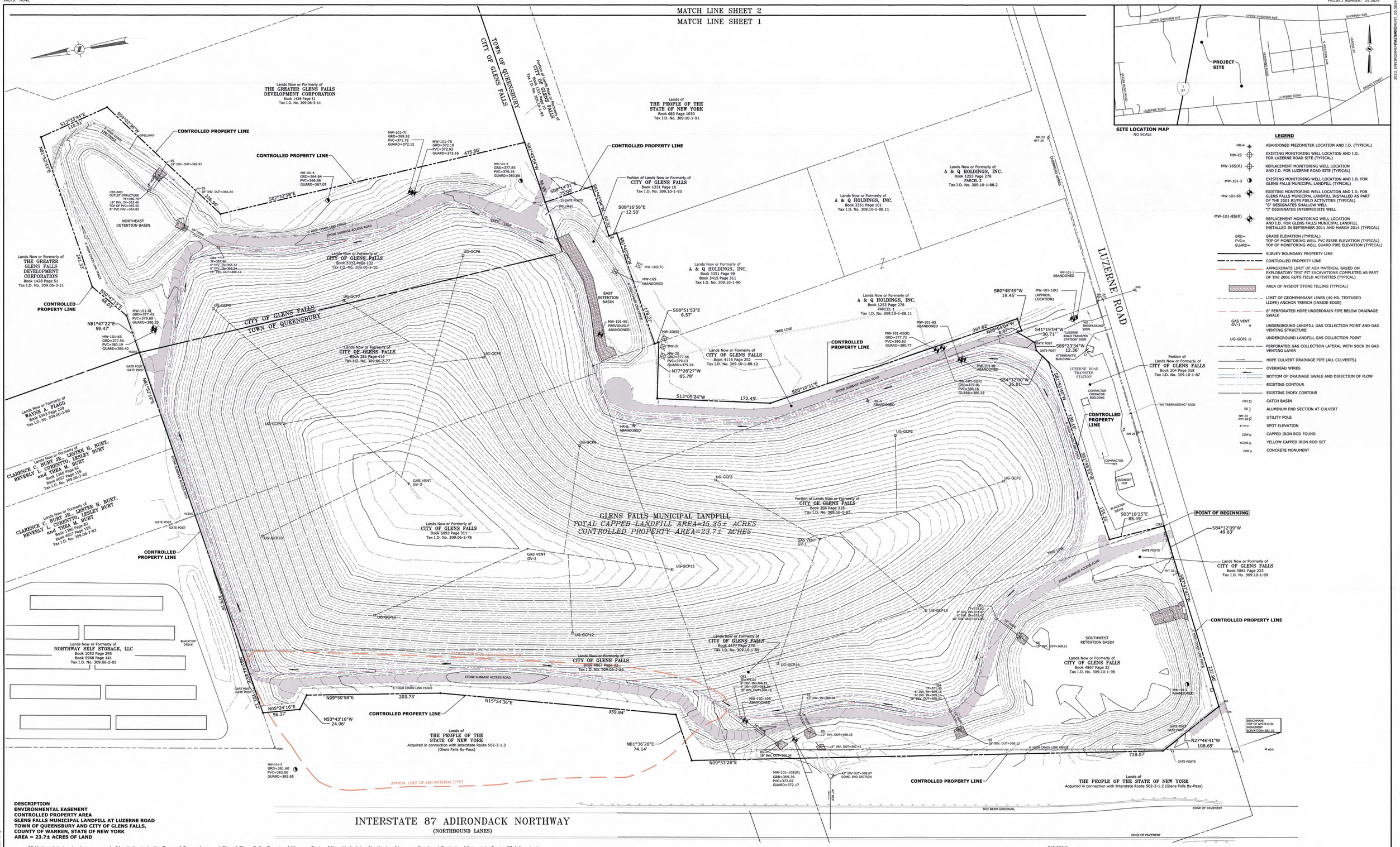
Environmental Easement Survey, Glens Falls Municipal Landfill at Luzerne Road (C.T. Male Drawing No. 21-543)

XREFS: NONE

PROJECT NUMBER: 05.5824

MATCH LINE SHEET 2

MATCH LINE SHEET 1



LEGEND

- HR-4 — ABANDONED PIEZOMETER LOCATION AND I.D. (TYPICAL)
- MW-2S — EXISTING MONITORING WELL LOCATION AND I.D. FOR LUZERNE ROAD SITE (TYPICAL)
- MW-16S(R) — REPLACEMENT MONITORING WELL LOCATION AND I.D. FOR LUZERNE ROAD SITE (TYPICAL)
- MW-101-3 — EXISTING MONITORING WELL LOCATION AND I.D. FOR GLENS FALLS MUNICIPAL LANDFILL (TYPICAL)
- MW-101-6S — EXISTING MONITORING WELL LOCATION AND I.D. FOR GLENS FALLS MUNICIPAL LANDFILL INSTALLED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL) "S" DESIGNATES SHALLOW WELL "I" DESIGNATES INTERMEDIATE WELL
- MW-101-8S(R) — REPLACEMENT MONITORING WELL LOCATION AND I.D. FOR GLENS FALLS MUNICIPAL LANDFILL INSTALLED IN SEPTEMBER 2011 AND MARCH 2014 (TYPICAL)
- GRD= PVC= GUARD= — GRADE ELEVATION (TYPICAL) TOP OF MONITORING WELL PVC RISER ELEVATION (TYPICAL) TOP OF MONITORING WELL GUARD PIPE ELEVATION (TYPICAL)
- SURVEY BOUNDARY PROPERTY LINE
- CONTROLLED PROPERTY LINE
- APPROXIMATE LIMIT OF ASH MATERIAL BASED ON EXPLORATORY TEST PIT EXCAVATIONS COMPLETED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- AREA OF NYSDOT STONE FILLING (TYPICAL)
- LIMIT OF GEOMEMBRANE LINER (40 MIL TEXTURED LLDPE) ANCHOR TRENCH (INSIDE EDGE)
- 6" PERFORATED HDPE UNDERDRAIN PIPE BELOW DRAINAGE SWALE
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- UG-GCP2 — UNDERGROUND LANDFILL GAS COLLECTION POINT
- PERFORATED GAS COLLECTION LATERAL WITH SOCK IN GAS VENTING LAYER
- HDPE CULVERT DRAINAGE PIPE (ALL CULVERTS)
- OVERHEAD WIRES
- BOTTOM OF DRAINAGE SWALE AND DIRECTION OF FLOW
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- CB1 — CATCH BASIN
- ES — ALUMINUM END SECTION AT CULVERT
- NM 23 NYT 20 — UTILITY POLE
- +376.92 — SPOT ELEVATION
- CIRF — CAPPED IRON ROD FOUND
- YCIRS — YELLOW CAPPED IRON ROD SET
- MON — CONCRETE MONUMENT

BAR SCALE

50 0 25 50 100

1 inch = 50 ft.

DESCRIPTION
ENVIRONMENTAL EASEMENT
CONTROLLED PROPERTY AREA
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD
TOWN OF QUEENSBURY AND CITY OF GLENS FALLS,
COUNTY OF WARREN, STATE OF NEW YORK
AREA = 23.7± ACRES OF LAND

All that certain tract, piece or parcel of land situate in the Town of Queensbury and City of Glens Falls, County of Warren, State of New York, lying Northerly of Luzerne Road and Easterly of Interstate Route 87 Adirondack Northway, and being more particularly bounded and described as follows:

BEGINNING at a point on the Northerly road boundary of Luzerne Road at its point of intersection with the division line between the lands now or formerly of the City of Glens Falls as described in Book 204 of Deeds at Page 318 on the East and other lands now or formerly of the City of Glens Falls as described in Book 5861 of Deeds at Page 223 on the West and runs thence from said point of beginning along said Northerly road boundary of Luzerne Road South 83 deg. 47 min. 47 sec. West 237.96 feet to its point of intersection with the Northeasterly highway boundary of Interstate Route 87 Adirondack Northway; thence along the Northeasterly, Easterly, Southerly and Southwesterly highway boundary the following seven (7) courses: 1) North 27 deg. 46 min. 41 sec. West 108.69 feet to a point; 2) North 09 deg. 33 min. 28 sec. East 718.07 feet to a point; 3) North 81 deg. 36 min. 28 sec. East 74.14 feet to a point; 4) North 15 deg. 54 min. 36 sec. East 359.84 feet to a point; 5) North 09 deg. 50 min. 58 sec. East 203.73 feet to a point; 6) North 53 deg. 43 min. 16 sec. West 24.06 feet to a point; and 7) North 05 deg. 24 min. 16 sec. East 56.37 feet to its point of intersection with the common division line between the lands now or formerly of the City of Glens Falls as described in Book 4867 of Deeds at Page 32, Book 6093 of Deeds at Page 311, and Book 281 of Deeds at Page 419 on the South and the lands now or formerly of Northway Self Storage, LLC as described in Book 1053 of Deeds at Page 295 and Book 5968 of Deeds at Page 141, lands now or formerly of Clarence C. Burt Jr., Lester H. Burt, Beverly L. Corentto, Leslie Burt and Thea M. Burt as described in Book 1366 of Deeds at Page 155; and lands now or formerly of Wayne A. Flagg as described in Book 5343 of Deeds at Page 229 on the North; thence along the last mentioned common division line the following two (2) courses: 1) North 81 deg. 41 min. 45 sec. East 101.12 feet to a point; and 2) North 81 deg. 52 min. 19 sec. East 479.16 feet to its point of intersection with the division line between the lands now or formerly of City of Glens Falls as described in Book 5332 of Deeds at Page 102 on the South and Southeast and the lands now or formerly of The Greater Glens Falls Development Corporation as described in Book 1428 of Deeds at Page 51 on the North and Northwest; thence along said division line the following three (3) courses: 1) North 81 deg. 47 min. 22 sec. East 59.47 feet to a point; 2) North 50 deg. 47 min. 15 sec. East 68.03 feet to a point; and 3) North 81 deg. 52 min. 43 sec. East 241.33 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 5332 of Deeds at Page 102 on the West and Northwest and the said lands now or formerly of The Greater Glens Falls Development Corporation on the East and Southeast; thence along said division line the following three (3) courses: 1) South 13 deg. 33 min. 44 sec. East 110.51 feet to a point; 2) South 54 deg. 02 min. 36 sec. West 236.96 feet to a point; and 3) South 02 deg. 32 min. 58 sec. East 475.80 feet to its point of intersection with the division line between the said lands now or formerly of City of Glens Falls as described in Book 5332 of Deeds at Page 102 on the North and other lands now or formerly of the City of Glens Falls as described in Book 1331 of Deeds at Page 10 on the South; thence South 81 deg. 45 min. 04 sec. West along the last mentioned division line 96.55 feet to a point; thence through the said lands now or formerly of the City of Glens Falls as described in Book 1331 of Deeds at Page 10 South 08 deg. 14 min. 31 sec. East 75.00 feet to a point on the division line between the said lands now or formerly of the City of Glens Falls as described in Book 5332 of Deeds at Page 102 on the North and the lands of the People of the State of New York as described in Book 683 of Deeds at Page 1030 on the South; thence South 81 deg. 45 min. 04 sec. West along the last mentioned division line 80.01 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls on the West and the said lands of the People of the State of New York as described in Book 683 of Deeds at Page 1030 on the East; thence South 08 deg. 16 min. 56 sec. East along the last mentioned division line 12.50 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 1331 of Deeds at Page 10 on the North and the lands now or formerly of A & Q Holdings, Inc. as described in Book 3351 of Deeds at Page 98 and Book 3415 of Deeds at Page 311 on the South; thence South 81 deg. 45 min. 04 sec. West along the last mentioned division line 178.27 feet to its point of intersection with the division line between the lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the West and the said lands now or formerly of A & Q Holdings, Inc. on the East; thence South 08 deg. 51 min. 53 sec. East along the last mentioned division line 6.57 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the North and other lands now or formerly of A & Q Holdings, Inc. as described in Book 1253 of Deeds at Page 278 on the South; thence North 77 deg. 28 min. 27 sec. West along the last mentioned division line 85.78 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 204 of Deeds at Page 318 on the West and the said lands now or formerly of A & Q Holdings, Inc. as described in Book 1253 of Deeds at Page 278 on the East; thence along the last mentioned division line the following two (2) courses: 1) South 13 deg. 05 min. 24 sec. West 172.45 feet to a point; and 2) South 08 deg. 10 min. 31 sec. East 397.82 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the North and the said lands now or formerly of A & Q Holdings, Inc. as described in Book 1253 of Deeds at Page 278 on the South; thence South 80 deg. 48 min. 49 sec. West along the last mentioned division line 19.45 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the East and the said lands now or formerly of the City of Glens Falls as described in Book 204 of Deeds at Page 318 on the West; thence North 08 deg. 54 min. 04 sec. West along the last mentioned division line 6.97 feet to a point; thence through the said lands now or formerly of the City of Glens Falls as described in Book 204 of Deeds at Page 318 the following six (6) courses: 1) South 41 deg. 19 min. 04 sec. West 30.71 feet to a point; 2) South 89 deg. 23 min. 34 sec. West 12.36 feet to a point; 3) South 54 deg. 32 min. 00 sec. West 26.01 feet to a point; 4) South 81 deg. 51 min. 40 sec. West 130.19 feet to a point; 5) South 81 deg. 48 min. 55 sec. West 155.26 feet to a point; and 6) South 03 deg. 18 min. 25 sec. East 85.49 feet to the point or place of beginning and containing 23.7 acres of land, more or less.

-MAP NOTES AND REFERENCES LOCATED ON SHEET 2 OF 3

-PROPERTY DESCRIPTIONS LOCATED ON SHEET 3 OF 3

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 New York Environmental Conservation Law. THE ENGINEERING AND INSTITUTIONAL CONTROLS for this 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 New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@dec.ny.gov.

I certify to the following that this survey has been prepared in accordance with the Code of Practice for Land Surveys adopted by the N.Y.S. Association of Professional Land Surveyors as last revised.

City of Glens Falls
The People of The State of New York, acting through their Commissioner of the Department of Environmental Conservation

Donald E. Albrecht P.L.S. No. 50302 — 02/10/23 Date

DONALD E. ALBRECHT
P.L.S. NO. 50302

STATE OF NEW YORK · DONALD E. ALBRECHT · 50302 · LICENSED LAND SURVEYOR

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
2/10/23	1	ADDITIONAL PARCEL AND DESCRIPTIONS ADDED	MDD	DGD	DEA
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				

DESIGNED:
DRAFTED : MDD
CHECKED : WJN
PROJ. NO : 05.5824
SCALE : 1"=50'
DATE : SEPT. 14, 2021

ENVIRONMENTAL EASEMENT SURVEY

GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

TOWN OF QUEENSBURY AND CITY OF GLENS FALLS — WARREN COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110 PH 518.786.7400
COBLESKILL, NY · GLENS FALLS, NY · POUGHKEEPSIE, NY
JOHNSTOWN, NY · RED HOOK, NY · SYRACUSE, NY
www.ctmale.com

ESMT
SHEET 1 OF 3
DWG. NO: 21-543

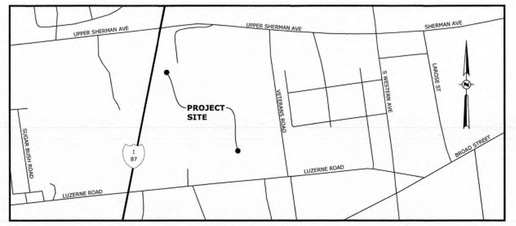
*"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY".

CAD DWG. FILE NAME: K:\Projects\05582#\Survey\2021 ENVIRONMENTAL EASEMENT MAP\2023_ENVIRONMENTAL EASEMENT_05.5824.dwg

2023_ENVIRONMENTAL EASEMENT_05.5824.dwg

XREFS: NONE

PROJECT NUMBER: 05.5824



SITE LOCATION MAP
NO SCALE

BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

MAP REFERENCES:

1. "FINAL COVER TOPOGRAPHIC SURVEY AND RECORD DRAWING, GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD", TOWN OF QUEENSBURY AND CITY OF GLENS FALLS, WARREN COUNTY, NEW YORK, PREPARED BY C.T. MALE ASSOCIATES ENGINEERING, SURVEYING, ARCHITECTURE & LANDSCAPE ARCHITECTURE, P.C., DATED OCTOBER 20, 2011, C.T. MALE PROJECT NO. 05.5824, DWG. NO. 11-402.
2. "GROUNDWATER MONITORING WELL NETWORK MAP, GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD", TOWN OF QUEENSBURY AND CITY OF GLENS FALLS, WARREN COUNTY, NEW YORK, PREPARED BY C.T. MALE ASSOCIATES ENGINEERING, SURVEYING, ARCHITECTURE & LANDSCAPE ARCHITECTURE, P.C., DATED NOVEMBER 1, 2011 AND REVISED TO MAY 30, 2014, C.T. MALE PROJECT NO. 05.5824, DWG. NO. 11-499.

MAP NOTES:

1. Topographic Information shown hereon was compiled from an actual field survey conducted during the month of November 2010. Additional field work to survey the existing and replacement monitoring wells was performed on October 14 and 20, 2011.
2. North orientation and bearings are based on the New York State Plane Coordinate System, East Zone, NAD 1983/1996.
3. Vertical Datum established from benchmark consisting of top of NYS Right-of-Way monument on north side of Luzerne Road and east of Interstate 87 at elevation 382.16.
4. This survey was prepared without the benefit of an up to date abstract of title or title report and is therefore subject to any easements, covenants, restrictions or any statement of fact that such documents may disclose.
5. No attempt was made to locate any underground utilities.

LEGEND

HR-4	ABANDONED PIEZOMETER LOCATION AND I.D. (TYPICAL)
MW-2S	EXISTING MONITORING WELL LOCATION AND I.D. FOR LUZERNE ROAD SITE (TYPICAL)
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	SURVEY BOUNDARY PROPERTY LINE
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UG-GCP2	UNDERGROUND LANDFILL GAS COLLECTION POINT
	PERFORATED GAS COLLECTION LATERAL WITH SOCK IN GAS VENTING LAYER
	HDPE CULVERT DRAINAGE PIPE (ALL CULVERTS)
	OVERHEAD WIRES
	BOTTOM OF DRAINAGE SWALE AND DIRECTION OF FLOW
	EXISTING CONTOUR
	EXISTING INDEX CONTOUR
CB1	CATCH BASIN
ES	ALUMINUM END SECTION AT CULVERT
NM 23 NYT 25	UTILITY POLE
+379.70	SPOT ELEVATION
CIRF	CAPPED IRON ROD FOUND
YCIRS	YELLOW CAPPED IRON ROD SET
MON	CONCRETE MONUMENT

-ENVIRONMENTAL EASEMENT LOCATED ON SHEET 1 OF 3

-PROPERTY DESCRIPTIONS LOCATED ON SHEET 3 OF 3

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I certify to the following that this survey has been prepared in accordance with the Code of Practice for Land Surveys adopted by the N.Y.S. Association of Professional Land Surveyors as last revised.

City of Glens Falls
The People of The State of New York, acting through their Commissioner of the Department of Environmental Conservation

Donald E. Albrecht P.L.S. No. 50302 — 02/10/23 Date

DONALD E. ALBRECHT
P.L.S. NO. 50302

STATE OF NEW YORK · DONALD E. ALBRECHT · 50302 · LICENSED LAND SURVEYOR

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
2/10/23	1	ADDITIONAL PARCEL AND DESCRIPTIONS ADDED	MDD	DGD	DEA
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW.

DESIGNED:
DRAFTED : MDD
CHECKED : WJN
PROJ. NO : 05.5824
SCALE : 1"=50'
DATE : SEPT. 14, 2021

ENVIRONMENTAL EASEMENT SURVEY

GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

TOWN OF QUEENSBURY and CITY OF GLENS FALLS — WARREN COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110 PH 518.786.7400
COHOES, NY • GLENS FALLS, NY • POUGHKEEPSIE, NY
JOHNSTOWN, NY • RED HOOK, NY • SYRACUSE, NY
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ESMT
SHEET 2 OF 3
DWG. NO: 21-543

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CAD DWG. FILE NAME: K:\Projects\05582A\Survey\2021 ENVIRONMENTAL EASEMENT MAP\2023_ENVIRONMENTAL EASEMENT_05.5824.dwg

2023_ENVIRONMENTAL EASEMENT_05.5824.dwg

XREFS: NONE

PROJECT NUMBER: 05.5824

DESCRIPTION PER BOOK 204 PAGE 318
TAX MAP PARCEL 309.10-1-87

This Indenture, made the 17th day of March, nineteen hundred and thirty-seven, Between Garner C. Tripp and Lila E. Tripp, his wife, of the City of Glens Falls, Warren County New York, parties of the first part, and City of Glens Falls, a municipal corporation created by and existing under the laws of the State of New York, party of the second part, WITNESSETH that the parties of the first part, in consideration of One Dollar ($1.00) lawful money of the United States, and other good and valuable considerations paid by the party of the second part do hereby grant and release unto the party of the second part, its successors and assigns forever, ALL THOSE CERTAIN PREMISES conveyed by Emma C. Norton to Garner C. Tripp; one of the parties of the first part, by deed dated June 18, 1930, and recorded in Warren County Clerk's Office June 28, 1930, in Book 183 of Deeds, at page 497, and therein described as follows: ALL that tract or parcel of land situate in the Town of Queensbury, County of Warren and State of New York, and is part of Lot No. 48, of the first division of said Town and bounded as follows: On the north by farm formerly owned by Benjamin Wells; on the east by land owned now or formerly by Orlin Price; and on the south by the highway leading from Glens Falls to H. Van Dusen's farm; and on the west by lands now or formerly owned by Thomas O'Bryon, and containing six and one-sixth (6 1/6) acres of land, be the same more or less. Excepting and reserving therefrom one acre of land in the southeast corner thereof to be laid out so that the width of the front of said acre on the road shall be one-half as much as the depth thereof.

Also ALL THAT TRACT OR PARCEL OF LAND situate in the Town of Queensbury, County of Warren and State of New York, and is part of Lot No. 48, of the first division of said Town, and bounded as follows: On the north by lands formerly owned by George M. Dickinson; on the east by land formerly owned by Alonzo Dean; and on the south by the highway leading from Glens Falls,; to H. Van Dusen's farm, and on the west by lands formerly owned by George M. Dickinson, containing about one acre more or less.

EXCEPTING AND RESERVING, however, from the above described premises, the land and the right-of-way conveyed by Richard O'Brien and wife to Harry Labowitz and others by deed dated November 12, 1909, and recorded in Warren County Clerk's Office August 18, 1913, in Book 127 of Deeds, at page 31.

Being the same premises described in a deed from Leon F. O'Brien and Lena R. O'Brien, his wife, to Emma C. Norton, dated March 30, 1921, recorded March 31, 1921, in Warren County Clerk's Office in Liber 147 of Deeds, at page 506.

ALSO conveying; ALL THAT PIECE OR PARCEL OF LAND, situate in the Town of Queensbury, County of Warren and State of New York, bounded and described as follows: Commencing at the northeast corner of 6-1/6 acres of land, being a part of Lot No. 48, of First Division of Town of Queensbury; running south along lands owned by Bibby & Ferguson, 200 feet; thence westerly on a straight line 200 feet to a corner; thence north on a line parallel with first mentioned line 200 feet to a corner; thence easterly 200 feet to the place of beginning.

Being the same premises described in a deed from Beecher W. Sprague, as Treasurer of the County of Warren, to Patrick Moynehan, recorded in Warren County Clerk's Office on the 11th day of April, 1918, in Book No. 138 of Deeds at page 238.

ALSO being the same premises conveyed by Dennis B. Moynehan to Emma C. Norton.

TOGETHER with the appurtenances and all the estate and rights of the parties of the first part, in and to said premises.

To have and to hold the premises herein granted unto the party of the second part its successors and assigns forever.

And said Garner C. Tripp, covenants as follows:

First: That the party of the second part shall quietly enjoy the said premises.

Second: That the said Garner C. Tripp will forever Warrant the title to said premises.

DESCRIPTION PER LIBER 281 PAGE 419
TAX MAP PARCEL NO. 309.06-2-77

THIS INDENTURE, made as of the 26th day of September, Nineteen Hundred and Forty-nine.

BETWEEN ELIZABETH A. PALMER, of the Town of Caldwell, (no street address), Warren County, New York, party of the first part, and

The CITY OF GLENS FALLS, a municipal corporation, having its principal place of business at City Hall, 34-38 Ridge Street, Glens Falls, Warren County, New York, party of the second part,

WITNESSETH, that the party of the first part, in consideration of One Dollar ($1.00) lawful money of the United States, and other good and valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, its successors, and assigns forever,

ALL THAT CERTAIN PIECE OR PARCEL OF LAND, situate, lying and being in the Town of Queensbury, Warren County, N.Y. bounded and described as follows: Beginning at the northeast corner of the lot now or formerly belonging to George A. Swain, being the first lot in deed hereinafter mentioned, running north two (2) degrees and thirty (30) minutes east nine (9) chains and eighty-six (86) links to land now or formerly of one McGinnis; thence north eighty-eight (88) degrees west along said McGinnis' line three (3) chains to land now or formerly of Sanford Coffin; thence south two (2) degrees and thirty (30) minutes west along said Coffin's line nine (9) chains and eighty-six (86) links; thence south eighty-eight (88) degrees east three (3) chains to the place of beginning, containing two and ninety-five hundredths (2.95) acres of land, more or less.

Being a part of the premises described in a deed from George F. Ferguson and others to Abraham McClouth, dated May 31st, 1921 and recorded on June 8, 1921 in the Warren County Clerk's Office in Book 148 of Deeds at Page 457.

Being the second of two parcels described in a deed dated June 13, 1939 from Orie B. Witherill and Ada L. Witherill, his wife, to Elizabeth A. Palmer, and recorded in the Warren County Clerk's Office on July 3, 1939 in Book 212 of Deeds at Page 169.

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises.

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, its successors, and assigns forever.

AND SAID Elizabeth A. Palmer covenants as follows:

FIRST, that the party of the second part shall quietly enjoy the said premises,

SECOND, that said Elizabeth A. Palmer will forever warrant the title to said premises.

DESCRIPTION PER LIBER 1331 PAGE 10
TAX MAP PARCEL 309.10-1-93 AND TAX MAP 309.06-3-06 (CITY OF GLENS FALLS)

Quitclaim Deed

THIS INDENTURE, made as of the 23rd day of July, Two Thousand Three

BETWEEN

NIAGARA MOHAWK POWER CORPORATION, a New York corporation, having an address at 300 Erie Boulevard West, Syracuse, New York 13202, party of the first part, and

CITY OF GLENS FALLS, a municipal corporation, having its principal offices at 42 Ridge Street, Glens Falls, New York, party of the second part,

WITNESSETH, that the party of the first part, in consideration of Ten Dollars, and other valuable consideration paid by the party of the second part, does hereby grant, release and quitclaim unto the party of the second part, the heirs or successors and assigns of the part of the second part forever,

ALL that certain piece parcel or tract of land situate, lying and being in the Town of Queensbury, County of Warren and State of New York being more particularly bounded and described as follows:

BEGINNING at a point in the division line between the lands of the party of the first part and lands formerly owned by William A. Golden on the east; thence running South 82 degrees 14 minutes West a distance of 1,183.4 feet to a corner; thence running South 07 degrees 48 minutes East a distance of 12.5 feet to a corner; thence running South 82 degrees 14 minutes West a distance of 177.0 feet to a corner; thence running North 07 degrees 45 minutes West a distance of 100.0 feet to a corner; thence running North 82 degrees 14 minutes East a distance of 177.0 feet to a corner; thence running South 07 degrees 48 minutes East a distance of 12.5 feet to a corner; thence running North 82 degrees 14 minutes East a distance of 1,183.0 feet to a corner; thence running South 08 degrees 09 minutes East a distance of 75.0 feet to the point and place of beginning. Containing 2.45± acres of land be the same more or less.

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof;

BEING THE SAME PREMISES conveyed from Guiditta (aka Judith) Ricciardelli to Niagara Mohawk Power Corporation by deed dated December 19, 1950 and recorded in the Warren County Clerk's Office on January 3, 1951 in Book 295 of Deeds at page 481 and those lands as conveyed from Albert W. Keech and Celia Keech, his wife, to Niagara Mohawk Power Corporation by deed dated December 27, 1950 and recorded in the Warren County Clerk's Office on January 5, 1951 in Book 295 of Deeds at page 552.

SUBJECT to any and all easements, reservations, covenants and restrictions of record.

THIS TRANSACTION is made in the usual and ordinary course of business of Grantor and does not constitute a disposition of all or substantially all of the assets of the grantor.

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises;

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first payment of the cost of the improvement before using any part of the total of the same for any purpose.

DESCRIPTION PER DOCUMENT NO. 00007518, VOLUME 4116 PAGE 252, INSTRUMENT NUMBER 2010-00007518
TAX MAP PARCEL 309.10-1-88.12

BARGAIN AND SALE DEED

THIS INDENTURE
made the 7th day of October, Two Thousand and Ten,

BETWEEN

A&Q HOLDINGS, INC., 10 Sagamore Street, Glens Falls, New York 12801, party of the first part, and

CITY OF GLENS FALLS, 42 Ridge Street, Glens Falls, New York 12801, party of the second part,

WITNESSETH that the party of the first part, in consideration of One and 00/100 Dollar ($1.00) lawful money of the United States and other good and valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, its heirs and assigns forever,

SEE SCHEDULE "A" ATTACHED HERETO AND MADE PART HEREOF

BEING a portion of the premises conveyed from Leo R. Monahan, Robert E. Geh and Fred H. Alexy and Jane A. Alexy, Trustees of the Fred H. Alexy Revocable Trust u/a/d June 23, 1997, by Deed dated February 28, 2002 and recorded in the Warren County Clerk's Office on March 4, 2002 at Book 1253 of Deeds at Page 278.

SUBJECT to easements and restrictions of record.

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, its heirs and assigns forever.

AND THE GRANTOR COVENANTS as follows:

FIRST, That Grantee Shall QUIETLY ENJOY said premises;

SECOND, that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatsoever, except as aforesaid;

THIRD, THAT IN COMPLIANCE WITH SECTION 13 OF THE LIEN LAW, Grantor will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

SCHEDULE "A"

ALL THAT CERTAIN TRACT, PIECE OR PARCEL OF LAND situate, lying and being in the Town of Queensbury, County of Warren, State of New York, lying Northerly of Luzerne Road and Easterly of the Adirondack Northway, and being more particularly bounded and described as follows:

COMMENCING at a point on the Northerly road boundary of Luzerne Road at its point of intersection with the division line between the lands now or formerly of A&Q Holdings, Inc., as described in Book 1253 of Deeds at Page 278 on the East and the lands now or formerly of the City of Glens Falls as described in Book 318 of Deeds at Page 204 on the West; thence from said point of commencement along said division line North 08 deg. 54 min. 04 sec. West 123.07 feet to the point or place of beginning and runs thence from said point of beginning continuing along the above first mentioned division line North 08 deg. 54 min. 04 sec. West 635.08 feet to its point of intersection with the common division line between the lands now or formerly of A&Q Holdings, Inc., on the South and the lands now or formerly of the Town of Queensbury as described in Book 47 of Deeds at Page 230 and lands now or formerly of the City of Glens Falls as described in Book 281 of Deeds at Page 419 on the North; thence North 81 deg. 45 min. 29 sec. East along the last mentioned common division line 169.00 feet to its point of intersection with the common division line between the said lands now or formerly of A&Q Holdings, Inc. on the West and the lands now or formerly of the City Glens Falls as described in Book 1331 of Deeds at Page 10 and other lands now or formerly of A&Q Holdings, Inc., as described in Instrument No. 2007-00008289 on the East; thence South 08 deg. 51 min. 53 sec. East along the last mentioned common division line 106.68 feet to a point; thence through the said lands now or formerly of A&Q Holdings, Inc., as described in Book 1253 of Deeds at Page 278 the following four (4) courses:

1) North 77 deg. 28 min. 27 sec. West 85.78 feet to a point;
2) South 13 deg. 05 min. 24 sec. West 172.45 feet to a point;
3) South 08 deg. 10 min. 31 sec. East 397.82 feet to a point; and
4) South 80 deg. 48 min. 49 sec. West 19.45 feet to the point or place of beginning.

Said parcel containing 0.73 acres of land, more or less.

DESCRIPTION PER DOCUMENT NO. 00003253, VOLUME 4477 PAGE 278, INSTRUMENT NUMBER 2012-00003253
TAX MAP PARCEL 309.10-1-85

BARGAIN AND SALE DEED

THIS INDENTURE, made the 15th day of March, 2012 between

NIAGARA MOHAWK POWER CORPORATION, a corporation of the State of New York having its principal office and place of business at 300 Erie Boulevard West, Syracuse, New York 13202,

party of the first part, (hereinafter the "**Niagara Mohawk**"), and

CITY OF GLENS FALLS, a municipal corporation organized and existing under the laws of the State of New York, with its principal place of business at 42 Ridge Street, Glens Falls, New York 12801,

party of the second part, (hereinafter the "**City**"),

WITNESSETH, that Niagara Mohawk, in consideration of Three Thousand Five Hundred Dollars ($3,500.00) lawful money of the United States and good and valuable consideration paid by the City, the receipt of which is hereby acknowledged, does hereby grant and release to the City, its successors and assigns forever;

ALL THAT CERTAIN TRACT, PIECE OR PARCEL OF LAND SITUATE IN THE TOWN OF QUEENSBURY, COUNTY OF WARREN, STATE OF NEW YORK, LYING EASTERLY OF THE ADIRONDACK NORTHWAY AND NORTH OF LUZERNE ROAD, AND BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING at a point on the division line between the lands now or formerly of Niagara Mohawk Power Corporation as described in Book 296 of Deeds at Page 116 on the West and the lands now or formerly of the City of Glens Falls as described in Book 1318 of Deeds at Page 204 on the East with the division line between the said lands now or formerly of Niagara Mohawk Power Corporation on the North and the lands of the People of the State of New York acquired in connection with Interstate Route 502-3-1.2 (Glens Falls Bypass) Map 76 Parcel 117 on the South, said point being situate North 07 deg. 54 min. 57 sec. West as measured along the above first-mentioned division line 637.75 feet from its point of intersection with the Northerly road boundary of Luzerne Road and runs thence from said point of beginning along the division line between the said lands now or formerly of Niagara Mohawk Power Corporation on the North and the said lands of the People of the State of New York on the South, South 82 deg. 24 min. 04 sec. West 144.35 feet to its point of intersection with the division line between the said lands now or formerly of the Niagara Mohawk Power Corporation on the East and the said lands of the People of the State of New York on the West; thence North 10 deg. 56 min. 12 sec. East along the last-mentioned division line 105.12 feet to its point of intersection with the division line between the said lands now or formerly of Niagara Mohawk Power Corporation on the South and the said lands of the People of the State of New York on the North; thence North 82 deg. 15 min. 05 sec. East along the last-mentioned division line 110.38 feet to its point of intersection with the above first-mentioned division line; thence along the said above first-mentioned division line South 07 deg. 54 min. 57 sec. East 100± feet to the point or place of beginning and containing 12,710± square feet or 0.29 acre of land, more or less.

MEANING AND INTENDING to convey all the remaining lands lying Easterly of Interstate Route 502-3-1.2 (Glens Falls Bypass) from a parcel conveyed by Franklin J. Chadwick to Niagara Mohawk Power Corporation as described in Book 296 of Deeds at Page 116 and recorded in the Warren County Clerk's Office on January 17, 1951.

TOGETHER WITH all right, title and interest, if any, of Niagara Mohawk in and to any streets and roads abutting the above described premises to the centerlines thereof.

EXCEPTING AND RESERVING to Niagara Mohawk, its successors and assigns, from the parcel described in this deed, the permanent right of way and easement to operate, maintain, repair, replace, modify and/or remove any and all gas and electric facilities as are now erected upon the premises above described, including the full right, privileges and authority to cut and remove all trees, structures, and other obstructions within the permanent right of way, together with the right to cut and remove any trees outside the permanent right-of-way which in the sole opinion of Niagara Mohawk, its successors and assigns, are deemed likely to interfere with or pose a hazard to the facilities.

ALSO, EXCEPTING AND RESERVING to Niagara Mohawk, its successors and assigns, the permanent right of way and easement to operate, maintain, build, construct, replace and/or remove electric and gas facilities within twenty (20) feet of the edge of any highway(s) abutting the premises hereby described as deemed necessary by said Niagara Mohawk, its successors and assigns. Said easement to include the full right, privileges and authority to cut and remove all trees, structures, and other obstructions within the permanent right of way, together with the right to cut and remove any trees outside the permanent right-of-way which in the sole opinion of Niagara Mohawk, its successors and assigns, are deemed likely to interfere with or pose a hazard to the facilities.

ALL of the permanent easements reserved to Niagara Mohawk in this deed will not be relocated except upon the written consent of Niagara Mohawk which consent Niagara Mohawk may deny in its sole discretion.

THIS conveyance does not constitute all or substantially all of the assets of the Niagara Mohawk.

SUBJECT to any state of facts an accurate and updated survey would reveal.

SUBJECT to any and all easements, covenants and restrictions of record.

TOGETHER with the appurtenances and all of the estate and rights of the Niagara Mohawk in and to said premises.

TO HAVE AND TO HOLD unto the said City, its successors and assigns forever, and the said Niagara Mohawk hereby covenants that the Niagara Mohawk has not done or suffered anything whereby the said premises have been encumbered in any whatsoever.

AND the Niagara Mohawk, in compliance with section 13 of the Lien Law, covenants that the Niagara Mohawk will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

DESCRIPTION PER DEED 4867 PAGE 32, INSTRUMENT NUMBER 2013-8352
TAX MAP PARCEL 309.06-2-86 AND TAX MAP PARCEL 309.10-1-98

Proceeding 1742
Town of Queensbury, County of Warren
Map 920-C, Parcel 1423
Surplus Property Case No. 01-III-585

QUITCLAIM DEED

This deed, made the 18th day of December, 2012, between

THE PEOPLE OF THE STATE OF NEW YORK, acting by and through Joan McDonald, the Commissioner of Transportation of the State of New York, with offices at 50 Wolf Road, POD 41, Albany, New York 12232, Grantors, and

CITY OF GLENS FALLS, having its principal office at City Hall, 42 Ridge Street, Glens Falls, New York 12801, Grantee,

WITNESSETH

WHEREAS the Grantors acquired title in fee in and to certain parcels of property in the Town of Queensbury, County of Warren, more particularly described as:

Parcel Numbers 117 and 118 on Map No 76, which map is entitled "INTERSTATE ROUTE 502-3-1.2 (GLENS FALLS BY-PASS)", and which map was filed in the Warren County Clerk's Office on June 12, 1959, and

Parcel No. 119 on Map No. 77 and Parcel No. 122 on Map No.79, which maps are entitled "INTERSTATE ROUTE 502-3-1.2 (GLENS FALLS BY-PASS)", and which maps were filed in the Warren County Clerk's Office on September 9, 1959, and

WHEREAS the Commissioner of Transportation has determined, pursuant to the authority granted by Section 30, Subdivision 18, of the Highway Law, that the hereinafter described parcels of property may be sold on terms beneficial to the State,

NOW, THEREFORE, in consideration of the sum of ONE DOLLAR ($1.00), lawful money of the United States, paid by the Grantee, and pursuant to the authority granted to the Commissioner of Transportation by Section 30, Subdivision 18, of the Highway Law, the Grantor does hereby remise, release, and quitclaim **"AS IS"** unto the Grantee, its successors and assigns forever,

ALL THAT PIECE OR PARCEL OF PROPERTY hereinafter designated as **Parcel No. 1423 on Conveyance Map 920-C**, consisting of a 4.937± acre vacant parcel of land along the east side of Interstate 87 (Adirondack Northway), and abutting the west side of the Glens Falls Municipal Landfill, situate in the Town of Queensbury, County of Warren, State of New York, as shown on the accompanying map and described as follows:

Parcel No. 1423

Beginning at a point at the intersection of the Northerly boundary of Luzerne Road with the division line between the lands of the People of the State of New York as acquired in connection with interstate 502-3-1.2 (Glens Falls By-Pass) on the West and the lands now or formerly of Franklin J. Chadwick as described in Book 302 of Deeds at Page 61 on the East, said point being 490± feet distant Easterly measured at right angles from Station 299+38± of the hereinafter described survey baseline for the construction of Interstate Route No. 502-3-1.2 (Glens Falls By-Pass); thence South 83 deg. 47 min. 47 sec. West along said Northerly road boundary of Luzerne Road 238± feet to a point, said point being 263± feet distant Easterly measured at right angles from Station 298+68± of said survey baseline; thence through the lands previously acquired by the People of the State of New York the following seven (7) courses and distances: 1) North 27 deg. 46 min. 41 sec. West 109± feet to a point 194.89 feet distant Easterly measured at right angles from Station 299+52.85 of said baseline; 2) North 09 deg. 33 min. 28 sec. East 718.07 feet to a point 176.93 feet distant Easterly measured at right angles from Station 306+70.69 of said baseline; 3) North 81 deg. 36 min. 28 sec. East 74.14 feet to a point 246.87 feet distant Easterly measured at right angles from Station 306+95.30 of said baseline; 4) North 15 deg. 54 min. 36 sec. East 359.84 feet to a point 277.72 feet distant Easterly measured at right angles from Station 310+53.81 of said baseline; 5) North 09 deg. 50 min. 58 sec. East 203.73 feet to a point 273.66 feet distant Easterly measured at right angles from Station 312+57.50 of said baseline; 6) North 53 deg. 43 min. 16 sec. West 24.06 feet to a point 251.91 feet distant Easterly measured at right angles from Station 312+67.78 of said baseline; and 7) North 05 deg. 24 min. 16 sec. East 56± feet to a point on the division line between the said lands previously acquired by the People of the State of New York on the South and the lands now or formerly of Northway Self Storage, LLC as described in Book 1053 of Deeds at Page 295 on the North, said point being 246± feet distant Easterly measured at right angles from Station 313+24± of said baseline; thence North 81 deg. 41 min. 45 sec. East along the last mentioned division line as previously acquired by the People of the State of New York in connection with Interstate Route 502-3-1.2 (Glens Falls By-Pass) Map No. 79 Parcel 122, a distance of 101± feet to its point of intersection with the division line between the said lands previously acquired by the People of the State of New York in connection with Interstate Route 502-3-1.2 (Glens Falls By-Pass) Map No. 79 Parcel 122 on the West and the lands now or formerly of the Town of Queensbury as described in Book 47 of Deeds at Page 230 on the East, said point being 342± feet distant Easterly measured at right angles from Station 313+57± of said baseline; thence along the last mentioned division line South 10 deg. 37 min. 59 sec. West 690± feet to its point of intersection with the division line between the said lands of the People of the State of New York on the North and the lands now or formerly of the City of Glens Falls on the South, said point being 346± feet distant Easterly measured at right angles from Station 306+67± of said baseline; thence along the last mentioned division line South 82 deg. 15 min. 06 sec. West 50± feet to its point of intersection with the division line between the said lands of the People of the State of New York on the North and the lands now or formerly of Niagara Mohawk Power Corporation as described in Book 296 of Deeds at Page 116 on the South, said point being 299± feet distant Easterly measured at right angles from Station 306+51± of said baseline; thence South 82 deg. 15 min. 05 sec. West along the last mentioned division line 110± feet to its point of intersection with the division line between the said lands of the People of the State of New York on the West and the said lands now or formerly of Niagara Mohawk Power Corporation on the East, said point being 195± feet distant Easterly measured at right angles from Station 306+15± of said baseline; thence South 10 deg. 56 min. 12 sec. West along the last mentioned division line 105± feet to its point of intersection with the division line between the said lands of the People of the State of New York on the South and the said lands now or formerly of Niagara Mohawk Power Corporation on the North, said point being 195± feet distant Easterly measured at right angles from Station 305+10± of said baseline; thence North 82 deg. 24 min. 04 sec. East along the last mentioned division line 144± feet to its point of intersection with the division line between the said lands of the People of the State of New York on the West and the lands now or formerly of the City of Glens Falls as described in Book 318 of Deeds at Page 204 on the East, said point being 332± feet distant Easterly measured at right angles from Station 305+56± of said baseline; thence South 07 deg. 54 min. 57 sec. East along the last mentioned division line 512± feet to its point of intersection with the division line between the said lands of the People of the State of New York on the North and the lands now or formerly of Franklin J. Chadwick (Reputed Owner) as described in Book 302 of Deeds at Page 61 on the South, said point being 498± feet distant Easterly measured at right angles from Station 300+71± of said baseline; thence South 84 deg. 12 min. 09 sec. West along the last mentioned division line 50± feet to its point of intersection with the above first mentioned division line 450± feet distant Easterly measured at right angles from Station 300+57± of said baseline; thence South 07 deg. 54 min. 57 sec. East along said above first mentioned division line 125± feet to the point or place of beginning and containing 4.937 acres of land, more or less.

Being a portion or all of the property listed below which was acquired by the people of the State of New York by virtue of the following parcels and maps.

INTERSTATE ROUTE 502-3-1.2 (GLENS FALLS BY-PASS)

Parcel No. Warren	Map No.	Type of Taking	Filed in DOT (DPW)	Filed in the CO. Clerk's Office
Portion of 117	**76**	**Fee W/A**	**5/20/59**	**6/12/59**
Portion of 118	**76**	**Fee W/OA**	**5/20/59**	**6/12/59**
Portion of 119	**77**	**Fee W/OA**	**5/20/59**	**9/09/59**
Portion of 122	**79**	**Fee W/OA**	**5/20/59**	**9/09/59**

RESERVING, however, to the people of the State of New York, the provision that the right of access to and from abutting property is fully prohibited along the new highway boundary established herein, namely the following seven (7) courses and distances:

1) North 27°-46'-41" West, 109± feet
2) Thence North 09°-33'-28" East, 718.07 feet
3) Thence North 8l°-36'-28" East, 74.14 feet
4) Thence North 15°-54'-36" East, 359.84 feet
5) Thence North 09°-50'-58" East, 203.73 feet
6) Thence North 53°-43'-16" East, 24.06 feet
7) Thence North 05°-24'-16" East, 56± feet

The above mentioned survey base line is a portion of the survey baseline for the construction of the Interstate Route 502, County of Warren as shown on a map and plan on file in the office of the New York State Department of Transportation and described as follows:

Beginning at Station 297+57.90; thence North 11 deg. 08 min. 46 sec. East 2,221.49 feet to Station 319+79.39.

All bearings refer to True North at the 74 deg. 20 min. Meridian of West Longitude.

PROVIDED, however, if said premises cease to be used for public, non-proprietary purposes, title thereto shall automatically revert to and vest to the Grantors, without re-entry or other affirmative acts by the Grantors, and at no cost to the Grantors. However, Grantors agree that in the event title so reverts, Grantors will convey said premises to the Grantee or its successors, or assigns, at the then fair market value of such premises. The estate granted by this Deed is intended to be a fee on limitation, with the Grantors retaining a possibility of reverter.

SUBJECT TO covenants, easements, restrictions, reservations, agreements, encroachments or conditions, if any, affecting all property conveyed herein.

TO HAVE AND TO HOLD the premises herein granted unto the Grantee, its successors and assigns forever.

DESCRIPTION PER DEED 5332 PAGE 102, INSTRUMENT NUMBER 2016-2082
TAX MAP PARCEL 309.06-3-10

QUIT CLAIM DEED

DATE OF DEED: March 30, 2016

GRANTOR: **GREATER GLENS FALLS LOCAL DEVELOPMENT CORPORATION**
42 Ridge Street
Glens Falls, NY 12801

GRANTEE: **CITY OF GLENS FALLS**
42 Ridge Street
Glens Falls, NY 12801

This Quit Claim Deed made between Grantor and Grantee on the deed date stated above **Witnesses That Grantor** in consideration of One Dollar ($1.00) lawful money of the United States and other good and valuable consideration, paid by Grantee,

Does Hereby Remise, Release, And Quit Claim Unto Grantee and its assigns all of Grantor's interest in the property located at:

Veterans Road
City of Glens Falls
County of Warren
State of New York
Tax Map No.: 309.6-3-10

(The property is described more fully in Schedule "A" attached)

This Grant Is Made:

TOGETHER with the appurtenances and all the estate and rights of the Grantor in and to said premises.

TO HAVE AND TO HOLD the premises granted by this Quit Claim Deed unto the Grantee and his assigns forever.

SUBJECT to the trust fund provisions of section thirteen of the lien law.

If there are more than one Grantor or Grantee, the words "Grantor" and "Grantee" used in this deed includes them.

Schedule "A"

ALL THAT CERTAIN PIECE AND PARCEL OF LAND LYING IN THE CITY OF GLENS FALLS, COUNTY OF WARREN, STATE OF NEW YORK, and bounded and described as follows:

Beginning at a point in the bounds of lands of the Greater Glens Falls Local Development Corporation in the boundary between the City of Glens Falls and the Town of Queensbury, and which point marks the northwesterly corner of Lot 7 as shown on a map by Chazen Engineering, Land Surveying & Landscape Architecture Co., P.C., titled "Amended Subdivision and Lot Line Adjustment Plat" dated September 28, 2010 and last revised February 22, 2012, and filed in the Warren County Clerk's Office on February 29, 2012 as document #03000025, thence S 81° 11' 07" E, a distance of 59.47 feet to a point, thence N 67° 48' 46" E, a distance of 68.03 feet to a point, thence S 81° 05' 46" E, a distance of 241.33 feet to a point, thence S 03° 27' 47" W, a distance of 110.51 feet to a point, thence S 71° 04' 06" W, a distance of 236.96 feet to a point, thence S 14° 28' 33" W, a distance of 475.74 feet to a point, thence N 81° 13' 00" W, a distance of 176.63 feet to a point in the boundary between lands of the Greater Glens Falls Local Development Corporation and the City of Glens Falls, thence N 08° 47' 00" E, a distance of 12.50 feet to a point, thence N 14° 27' 17" E, a distance of 649.85 feet to the point and place of beginning. Containing approximately 3.49 acres of land be the same more or less.

Being a portion of the lands conveyed from the City of Glens Falls to the Greater Glens Falls Development Corporation by deed dated January 11, 2005 and recorded in the Warren County Clerk's Office on January 19, 2005 in Book 1428 of Deeds at Page 51. The Greater Glens Falls Development Corporation and Greater Glens Falls Local Development Corporation are one and the same entity.

Being the same premises shown on a survey map entitled "Veterans Field Light Industrial Park Subdivision-Amended Subdivision and Lot Line Adjustment Plat," made by Chazen Engineering, Land Surveying & Landscape Architecture Co., PC, dated September 28, 2010 and filed in the Warren County Clerk's Office on February 29, 2012 as Map # 03000025.

DESCRIPTION PER DEED 5861 PAGE 223, INSTRUMENT NUMBER 2018-8143
TAX MAP PARCEL 309.10-1-99

QUITCLAIM DEED

THIS INDENTURE, made the 12th day of December, 2018 between

COUNTY OF WARREN, a municipal corporation and political subdivision established under the Laws of the State of New York, and having its principal office and place of business located at the Warren County Municipal Center, 1340 State Route 9, Lake George, New York 12845, party of the first part,

and

CITY OF GLENS FALLS, a municipal corporation and political subdivision established under the Laws of the State of New York, and having its principal office and place of business located at 42 Ridge Street, Glens Falls, New York 12801, party of the second part,

WITNESSETH, that the party of the first part, in consideration of One Thousand, Nine Hundred Ninety-Seven Dollars and Twenty-Four Cents ($1,997.24), lawful monies of the United States, and other good and valuable consideration paid by the party of the second part, does hereby remise, release and quitclaim unto the party of the second part, their heirs and assigns,

ALL that certain piece or parcel of land, formerly assessed to Waggaman & Collyer Equipment and Supply, Inc. on the 2016 assessment roll of the Town of Queensbury located in the Town of Queensbury, County of Warren and State of New York, being more particularly described as follows:

Tax Map Parcel No. 309.10-1-99
Luzerne Road
Property Classification Code 330
0.14 Acres

BEING the same premises described on a List of Delinquent Taxes prepared by the Warren County Treasurer and recorded in the Office of the Warren County Clerk on November 1, 2016.

The County of Warren acquired this parcel by reason of a foreclosure of tax liens and reference is hereby made to a Judgment and Order to Establish Title from Delinquent Taxes, dated October 10, 2018, and filed in the Office of the Warren County Clerk on October 10, 2018, in the Matter of the Foreclosure of Tax Liens by Proceeding in Rem Pursuant to Article Eleven of the Real Property Tax Law by the County of Warren - Index No. 65080.

SUBJECT to: (a) city and village tax liens accruing during the year of the auction and not relevied in the last town and county tax immediately preceding the auction; (b) school taxes accruing on or after July 15 in the year of the auction and any late payments and penalties related thereto; (c) street or other special assessments unpaid or payable to the municipality in which the premises are situated; and (d) any water or sewer charges unpaid or payable to the municipality in which the premises are situated which have not been relevied in the last town and county tax levy, and

SUBJECT to all existing tenancies, easements, rights, licenses, privileges and agreements, as well as any covenants, conditions, restrictions, reservations, rights of re-entry, possibilities of reverter, rights-of-way, utility or other easement agreements, or sell-offs in former deeds or other instruments of record, and

SUBJECT to existing laws and ordinances and any state of facts an accurate survey and prudent inspection of the premises would disclose, and

SUBJECT to any federal and/or state taxes, liens, judgements and encumbrances of record not otherwise extinguished when the County of Warren took title to the subject parcel.

SUBJECT to a payment to the County of Warren of fifty percent (50%) of the profits made on any subsequent sale of the property if the City of Glens Falls re-sells the property within five (5) years of this conveyance. "Profit" as used herein shall be defined as that amount received by the City of Glens Falls in excess of the cost of acquisition and the cost of any improvements made to the property paid by the City of Glens Falls.

THIS CONVEYANCE is made pursuant to Resolution No. 316 of 2018, adopted by the Warren County Board of Supervisors on August 17, 2018.

TOGETHER with the appurtenances and all estate and rights of the party of the first part in and to said premises.

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, their heirs and assigns forever.

DESCRIPTION PER DEED 6093 PAGE 311, INSTRUMENT NUMBER 2020-2094
TAX MAP PARCEL 309.06-2-78

QUITCLAIM DEED

THIS INDENTURE made the 10th day of February, 2020

BETWEEN

THE TOWN OF QUEENSBURY, a municipal corporation, established pursuant to the laws of the State of New York, with a principal place of business located at 742 Bay Road, Queensbury, New York 12804, party of the first part, and,

THE CITY OF GLENS FALLS, a municipal corporation, established pursuant to the laws of the State of New York, with a principal place of business located at 42 Ridge Street, Glens Falls, NY 12801, party of the second part, and,

WITNESSETH, that the parties of the first part, in consideration of one dollar, lawful money of the United States, paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL THAT CERTAIN PIECE OR PARCEL OF LAND situate lying and being in the Town of Queensbury, identified as follows:

Warren County Tax Map No., 309.6-2-78, consisting of 5.15 acres, more or less, located off Luzerne Road, Town of Queensbury, County of Warren and State of New York, bordered on the North by lands now or formerly of Northway Self Storage, LLC; and on the South, West and East by lands now or formerly of the City of Glens Falls.

BEING the a portion of the premises conveyed by Sanford Baffin and Catherine Baffin to the Town of Queensbury by Deed dated April 3, 1883 and recorded in the Warren County Clerk's Office on July 8, 1884 in Book 47 of Deeds at Page 230.

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, its heirs and assigns forever.

That in Compliance with Sec. 13 of the Lien Law, the Grantor will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

-PROPERTY AND ENVIRONMENTAL EASEMENT LOCATED ON SHEETS 1 AND 2 OF 3

-MAP NOTES AND REFERENCES LOCATED ON SHEET 2 OF 3

"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY."

CAD DWG. FILE NAME: K:\Projects\055824\Survey\2021 ENVIRONMENTAL EASEMENT MAP\2023_ENVIRONMENTAL EASEMENT_05.5824.dwg

DONALD E. ALBRECHT
P.L.S. NO. 50302

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2/10/23	1	ADDITIONAL PARCEL AND DESCRIPTIONS ADDED	MDD	DGD	DEA
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DESIGNED:
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CHECKED : WJN
PROJ. NO : 05.5824
SCALE : 1"=50'
DATE : SEPT. 14, 2021

ENVIRONMENTAL EASEMENT SURVEY

GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

TOWN OF QUEENSBURY AND CITY OF GLENS FALLS
WARREN COUNTY, NEW YORK

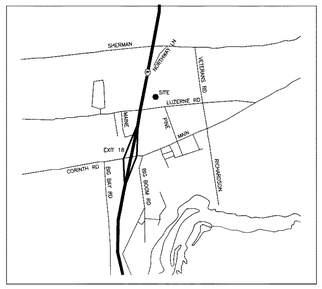
C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110 PH 518.786.7400
COBLESKILL, NY • GLENS FALLS, NY • POUGHKEEPSIE, NY
JOHNSTOWN, NY • RED HOOK, NY • SYRACUSE, NY
www.ctmale.com

DESC
SHEET 3 OF 3
DWG. NO: 21-543

FIGURE 3

Site Plan and Sampling Locations Map, Remedial Investigation/Feasibility Study (C.T. Male Drawing No. 02-178, Sheet 1 of 4)

MATCHLINE SEE BELOW



SITE LOCATION MAP
NOT TO SCALE

SECURE PCB CELL

BENCHMARK
BRASS ROD IN CONCRETE
AT BASE OF WELL W-1
ELEVATION=379.99

53 LUZERNE ROAD

55 LUZERNE ROAD

FORMER AMG INDUSTRIES CURRENTLY BARE BONES FURNITURE

LUZERNE ROAD TRANSFER STATION

GLENS FALLS MUNICIPAL LANDFILL

INTERSTATE 87
ADIRONDACK NORTHWAY

LUZERNE ROAD

APPROXIMATE LIMIT OF ASH MATERIAL

EDGE OF C&D DEBRIS WASTE

CONC DEBRIS

IPF N07°18'22"W 23.70' FROM PROPERTY CORNER

MON FOUND N46°49'03"E 0.89' FROM PROPERTY CORNER

MAP NOTES

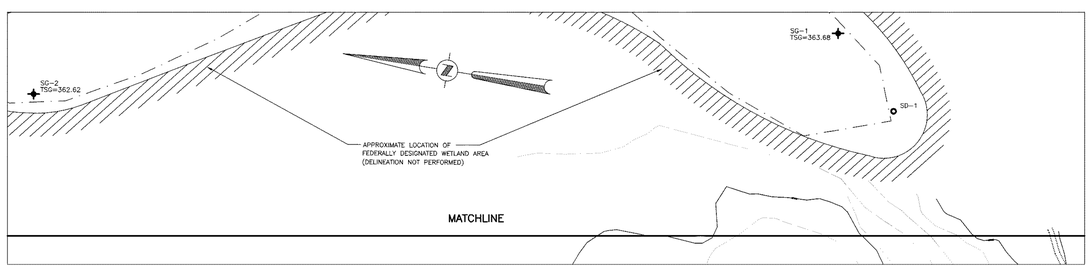
1. VERTICAL DATUM ESTABLISHED FROM BENCHMARK CONSISTING OF TOP OF NYS RIGHT-OF-WAY MONUMENT ON NORTH SIDE OF LUZERNE ROAD AND EAST OF INTERSTATE 87 AT ELEVATION 382.16, NGVD 1929.
2. PLANIMETRIC INFORMATION, SOME TRAIL INFORMATION, SAMPLING LOCATIONS AND MONITORING WELL LOCATIONS OBTAINED BY FIELD SURVEY CONDUCTED BY C.T. MALE ASSOCIATES, P.C. DURING OCTOBER 2001 THROUGH NOVEMBER 2001.
3. TOPOGRAPHIC AND TRAIL INFORMATION OBTAINED FROM BASE MAP PROVIDED BY CITY OF GLENS FALLS. SEE MAP REFERENCE NO. 1.
4. BOUNDARY INFORMATION OBTAINED FROM BOUNDARY SURVEY CONDUCTED BY C.T. MALE ASSOCIATES, P.C. DURING NOVEMBER 2001.

MAP REFERENCE

1. BASE MAP OBTAINED FROM CITY OF GLENS FALLS IN AUTOCAD RELEASE 14; TOPOGRAPHIC SURVEY MUNICIPAL LANDFILL AT LUZERNE ROAD, CLOUGH, HARBOUR & ASSOCIATES, LLP.

LEGEND

- UTILITY POLE
- CIRS ○ CAPPED IRON ROD SET
- IPF ○ IRON PIPE FOUND
- MON △ MONUMENT FOUND
- 400 EXISTING CONTOUR
- APPROXIMATE LIMIT OF REFUSE/ WASTE BASED ON EXPLORATORY TEST PIT EXCAVATIONS COMPLETED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- APPROXIMATE LIMIT OF ASH MATERIAL BASED ON EXPLORATORY TEST PIT EXCAVATIONS COMPLETED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- HR-4 EXISTING PIEZOMETER LOCATION AND I.D. (TYPICAL)
- MW-3S EXISTING MONITORING WELL LOCATION AND I.D. FOR LUZERNE ROAD SITE (TYPICAL)
- MW-101-3 EXISTING MONITORING WELL AND I.D. FOR GLENS FALLS MUNICIPAL LANDFILL (TYPICAL)
- SS-11 SURFACE SOIL SAMPLING LOCATION AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- SD-2 SEDIMENT SAMPLING LOCATION AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- TP-7B EXPLORATORY TEST PIT EXCAVATION AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- TP-13 SUBSURFACE SOIL SAMPLING LOCATION AND I.D. AT TEST PIT EXCAVATION AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- EG-19 EXPLOSIVE GAS SAMPLE LOCATION AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL) (LOCATIONS EG-74 TO EG-106 ARE APPROXIMATE)
- ANIMAL BURROW #2 ANIMAL BURROW LOCATION AND I.D. IDENTIFIED DURING THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- DRUMS #1 ABANDONED DRUMS LOCATION AND I.D. IDENTIFIED DURING THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- SG-1 STREAM GAUGE LOCATION AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- MW-101-10S MONITORING WELL AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL) "S" DESIGNATES SHALLOW WELL "I" DESIGNATES INTERMEDIATE WELL
- GRD= GRADE ELEVATION (TYPICAL)
- PVC= TOP OF MONITORING WELL PVC RISER ELEVATION (TYPICAL)
- GUARD= TOP OF MONITORING WELL GUARD PIPE ELEVATION (TYPICAL)
- TSG= TOP OF STREAM GAUGE ELEVATION (TYPICAL)



BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

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DATE : AUG 2002

FIGURE 2
SITE PLAN AND SAMPLING LOCATIONS MAP

REMEDIAL INVESTIGATION/FEASABILITY STUDY
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

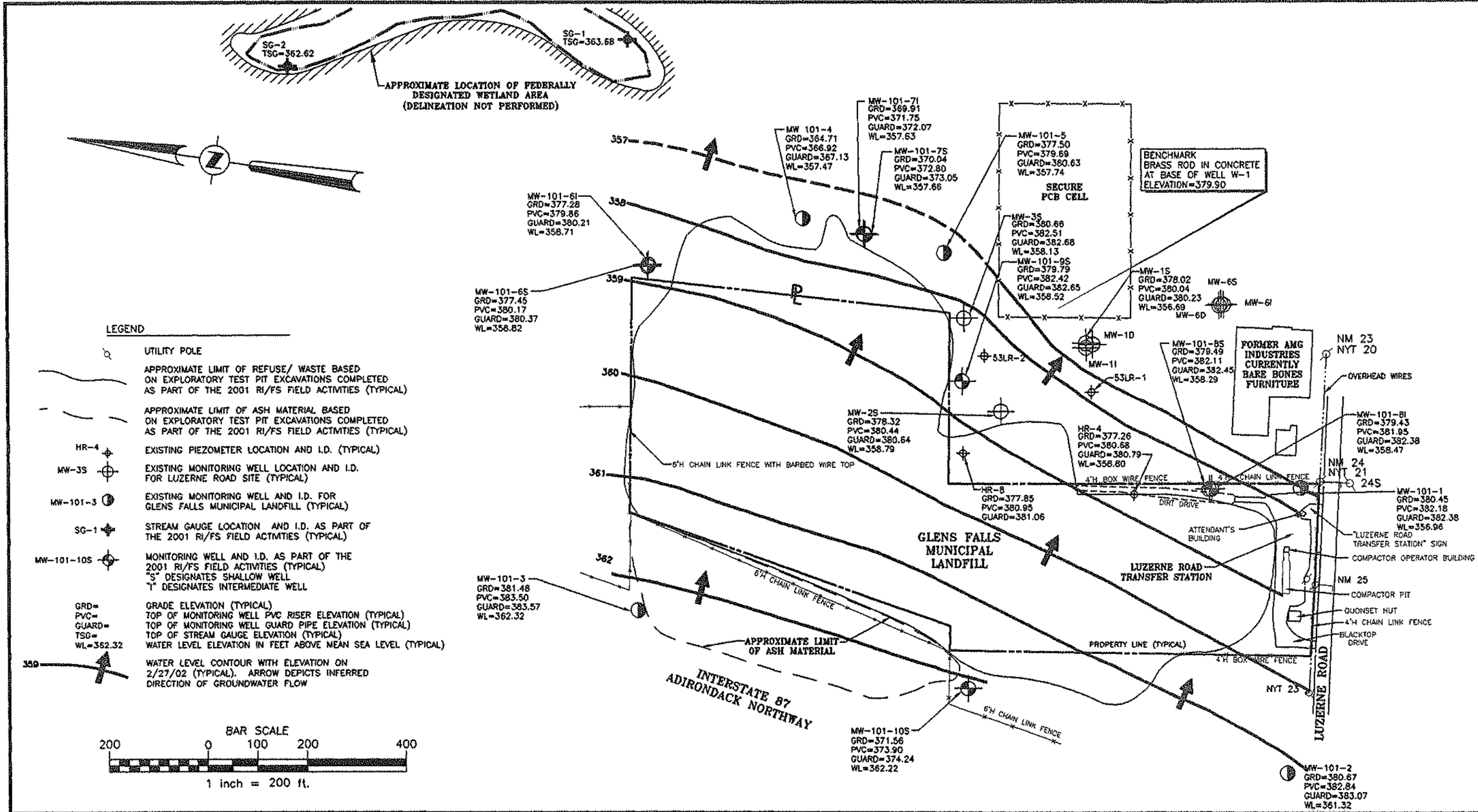
TOWN OF QUEENSBURY — WARREN COUNTY, NEW YORK

C.T. MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110
518.786.7400 • FAX 518.786.7299
ARCHITECTURE & BUILDING SYSTEMS ENGINEERING • CIVIL ENGINEERING
ENVIRONMENTAL SERVICES • SURVEY & LAND INFORMATION SERVICES

FIGURE 4

Water Level Contour Map (2/27/02), Remedial Investigation/Feasibility Study (C.T. Male Drawing No. 02-178, Sheet 4 of 4)

NO XREFS



LEGEND

- UTILITY POLE
- APPROXIMATE LIMIT OF REFUSE/ WASTE BASED ON EXPLORATORY TEST PIT EXCAVATIONS COMPLETED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- APPROXIMATE LIMIT OF ASH MATERIAL BASED ON EXPLORATORY TEST PIT EXCAVATIONS COMPLETED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- HR-4 — EXISTING PIEZOMETER LOCATION AND I.D. (TYPICAL)
- MW-3S — EXISTING MONITORING WELL LOCATION AND I.D. FOR LUZERNE ROAD SITE (TYPICAL)
- MW-101-3 — EXISTING MONITORING WELL AND I.D. FOR GLENS FALLS MUNICIPAL LANDFILL (TYPICAL)
- SG-1 — STREAM GAUGE LOCATION AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- MW-101-10S — MONITORING WELL AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
  "S" DESIGNATES SHALLOW WELL
  "I" DESIGNATES INTERMEDIATE WELL
- GRD= GRADE ELEVATION (TYPICAL)
- PVC= TOP OF MONITORING WELL PVC RISER ELEVATION (TYPICAL)
- GUARD= TOP OF MONITORING WELL GUARD PIPE ELEVATION (TYPICAL)
- TSG= TOP OF STREAM GAUGE ELEVATION (TYPICAL)
- WL=362.32 — WATER LEVEL ELEVATION IN FEET ABOVE MEAN SEA LEVEL (TYPICAL)
- 359 — WATER LEVEL CONTOUR WITH ELEVATION ON 2/27/02 (TYPICAL). ARROW DEPICTS INFERRED DIRECTION OF GROUNDWATER FLOW

BAR SCALE

200 0 100 200 400

1 inch = 200 ft.

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PROJ. NO : 00.6801
SCALE : 1"=200'
DATE : AUG 2002

FIGURE 5
WATER LEVEL CONTOUR MAP (2/27/02)

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

TOWN OF QUEENSBURY — WARREN COUNTY, NEW YORK

C.T. MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110
518.786.7400 • FAX 518.786.7299
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SHEET 4 OF 4
DWG. NO: 02-178

CAD DWG. FILE NAME: GWCONT2-27-02.DWG
CAD DWG. FILE NAME: GWCONT2-27-02.0

FIGURE 5

Soil Vapor Intrusion Study Sampling Locations Map, Pre-Remedial Action Sampling (C.T. Male Drawing No. 09-0746)

LEGEND

400	EXISTING CONTOUR
	APPROXIMATE LIMIT OF REFUSE/ WASTE BASED ON EXPLORATORY TEST PIT EXCAVATIONS COMPLETED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
	APPROXIMATE LIMIT OF ASH MATERIAL BASED ON EXPLORATORY TEST PIT EXCAVATIONS COMPLETED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
HR-4	EXISTING PIEZOMETER LOCATION AND I.D. (TYPICAL)
MW-8S	EXISTING MONITORING WELL LOCATION AND I.D. FOR LUZERNE ROAD SITE (TYPICAL)
MW-101-3	EXISTING MONITORING WELL AND I.D. FOR GLENS FALLS MUNICIPAL LANDFILL (TYPICAL)
MW-101-10S	MONITORING WELL AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL) "S" DESIGNATES SHALLOW WELL "I" DESIGNATES INTERMEDIATE WELL
GRD=	GRADE ELEVATION (TYPICAL)
PVC=	TOP OF MONITORING WELL PVC RISER ELEVATION (TYPICAL)
GUARD=	TOP OF MONITORING WELL GUARD PIPE ELEVATION (TYPICAL)
TSG=	TOP OF STREAM GAUGE ELEVATION (TYPICAL)
TP-10	EXPLORATORY TEST PIT EXCAVATION AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
DRUMS #1 ○	ABANDONED DRUMS LOCATION AND I.D. IDENTIFIED DURING THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
SG-1	STREAM GAUGE LOCATION AND I.D. AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
	LIMITS OF DELINEATED WETLANDS
W1-8	WETLAND FLAG ID
SG-3	SOIL GAS SAMPLE LOCATION AND I.D. COLLECTED JUNE 28, 2009 (TYPICAL)
OA-AIR-2	AMBIENT AIR SAMPLE LOCATION AND I.D. COLLECTED JUNE 28, 2009 (TYPICAL)

MAP REFERENCE

"EXISTING CONDITIONS PLAN REMEDIAL DESIGN GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD", SHEET P1, TOWN OF QUEENSBURY, WARREN COUNTY, NEW YORK, PREPARED BY C.T. MALE ASSOCIATES, P.C. DATED JUNE 10, 2009, C.T. MALE PROJECT NO. 05.5824, DWG. NO. 07-0653, SHEET 3 OF 14.

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DESIGNED: EWR
DRAFTED : MDD
CHECKED : EWR
PROJ. NO: 05.5824
SCALE : 1"=50'
DATE : JULY 2009

SOIL VAPOR INTRUSION STUDY SAMPLING LOCATIONS MAP

PRE-REMEDIAL ACTION SAMPLING GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

TOWN OF QUEENSBURY WARREN COUNTY, NEW YORK

C.T. MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299
ARCHITECTURE & BUILDING SYSTEMS ENGINEERING * CIVIL ENGINEERING
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SHEET 1 OF 1
DWG. NO: 09-0746

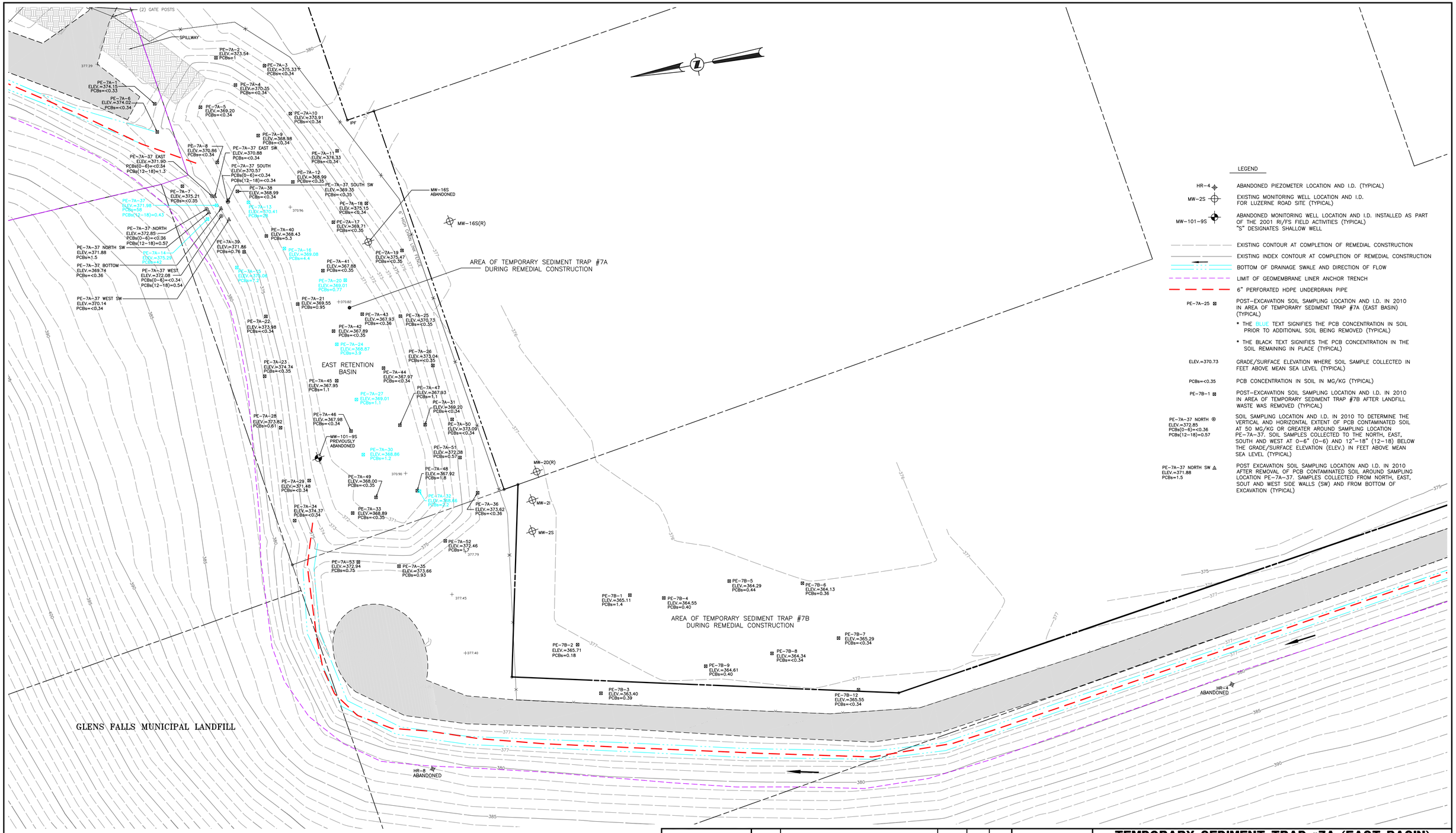
FIGURE 6

Temporary Sediment Trap #7A (East Basin) and Trap #7B Post-Excavation Soil Sampling Locations and PCB Results Map

XREFS: NONE

PROJECT NUMBER: 05.5824

CAD DWG. FILE NAME: SOIL SAMPLING MAP.DWG



LEGEND

- HR-4 — ABANDONED PIEZOMETER LOCATION AND I.D. (TYPICAL)
- MW-2S — EXISTING MONITORING WELL LOCATION AND I.D. FOR LUZERNE ROAD SITE (TYPICAL)
- MW-101-9S — ABANDONED MONITORING WELL LOCATION AND I.D. INSTALLED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL) "S" DESIGNATES SHALLOW WELL
- EXISTING CONTOUR AT COMPLETION OF REMEDIAL CONSTRUCTION
- EXISTING INDEX CONTOUR AT COMPLETION OF REMEDIAL CONSTRUCTION
- BOTTOM OF DRAINAGE SWALE AND DIRECTION OF FLOW
- LIMIT OF GEOMEMBRANE LINER ANCHOR TRENCH
- 6" PERFORATED HDPE UNDERDRAIN PIPE
- PE-7A-25 ⊠ — POST-EXCAVATION SOIL SAMPLING LOCATION AND I.D. IN 2010 IN AREA OF TEMPORARY SEDIMENT TRAP #7A (EAST BASIN) (TYPICAL)
  - * THE BLUE TEXT SIGNIFIES THE PCB CONCENTRATION IN SOIL PRIOR TO ADDITIONAL SOIL BEING REMOVED (TYPICAL)
  - * THE BLACK TEXT SIGNIFIES THE PCB CONCENTRATION IN THE SOIL REMAINING IN PLACE (TYPICAL)
- ELEV.=370.73 — GRADE/SURFACE ELEVATION WHERE SOIL SAMPLE COLLECTED IN FEET ABOVE MEAN SEA LEVEL (TYPICAL)
- PCBs=<0.35 — PCB CONCENTRATION IN SOIL IN MG/KG (TYPICAL)
- PE-7B-1 ⊠ — POST-EXCAVATION SOIL SAMPLING LOCATION AND I.D. IN 2010 IN AREA OF TEMPORARY SEDIMENT TRAP #7B AFTER LANDFILL WASTE WAS REMOVED (TYPICAL)
- PE-7A-37 NORTH ⊛ ELEV.=372.85 PCBs(0-6)=<0.36 PCBs(12-18)=0.57 — SOIL SAMPLING LOCATION AND I.D. IN 2010 TO DETERMINE THE VERTICAL AND HORIZONTAL EXTENT OF PCB CONTAMINATED SOIL AT 50 MG/KG OR GREATER AROUND SAMPLING LOCATION PE-7A-37. SOIL SAMPLES COLLECTED TO THE NORTH, EAST, SOUTH AND WEST AT 0-6" (0-6) AND 12"-18" (12-18) BELOW THE GRADE/SURFACE ELEVATION (ELEV.) IN FEET ABOVE MEAN SEA LEVEL (TYPICAL)
- PE-7A-37 NORTH SW ◬ ELEV.=371.88 PCBs=1.5 — POST EXCAVATION SOIL SAMPLING LOCATION AND I.D. IN 2010 AFTER REMOVAL OF PCB CONTAMINATED SOIL AROUND SAMPLING LOCATION PE-7A-37. SAMPLES COLLECTED FROM NORTH, EAST, SOUT AND WEST SIDE WALLS (SW) AND FROM BOTTOM OF EXCAVATION (TYPICAL)

MAP REFERENCE

1. "FINAL COVER TOPOGRAPHIC SURVEY AND RECORD DRAWING GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD", TOWN OF QUEENSBURY AND CITY OF GLENS FALLS, WARREN COUNTY, NEW YORK, PREPARED BY C.T. MALE ASSOCIATES DATED DECEMBER 1, 2010, C.T. MALE PROJECT NO. 05.5824, DWG. NO. 11-402.

BAR SCALE
20 0 10 20 40
1 inch = 20 ft.

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DESIGNED : EWR
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CHECKED : EWR
PROJ. NO: 05.5824
SCALE : 1"=20'
DATE : NOV. 1, 2011

TEMPORARY SEDIMENT TRAP #7A (EAST BASIN) AND TRAP #7B POST-EXCAVATION SOIL SAMPLING LOCATIONS AND PCB RESULTS MAP

GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

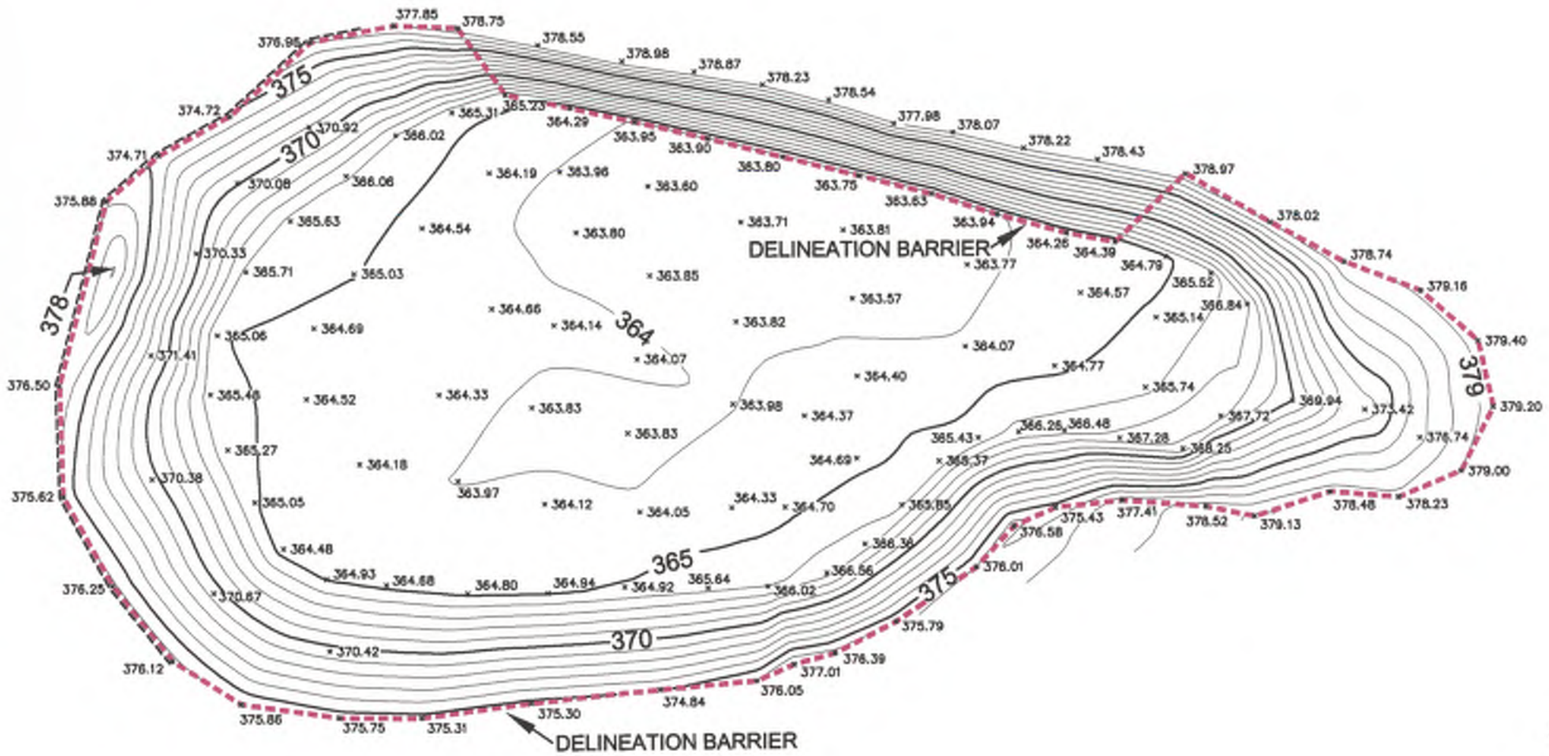
TOWN OF QUEENSBURY AND CITY OF GLENS FALLS — WARREN COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

SHEET 1 OF 1
DWG. NO: 11-0501

FIGURE 7

New Excavation Delineation Barrier East Side (Trap #7B Area) of the Glens Falls Landfill



BAR SCALE

30 0 15 30 60

1 inch = 30 ft.

PLAN

SCALE: 1"=30'

LEGEND:

365 — EXCAVATION DELINEATION BARRIER CONTOUR

LIMIT EXCAVATION DELINEATION BARRIER

NOTES:

VERTICAL DATUM: BASED ON CONTRACT DRAWINGS

HORIZONTAL DATUM: BASED ON CONTRACT DRAWINGS

CONTOUR INTERVAL:1 FOOT

FIELD WORK COMPLETED APRIL 22, 2010

N.Y.S. LIC. NO. #49,576

STATE OF NEW YORK JOHN J. DUNN LICENSED LAND SURVEYOR 49576

JOHN J. DUNN, P.L.S.

TOWN OF QUEENSBURY	
WARREN COUNTY	
STATE OF NEW YORK	
SCALE: 1" = 30'	
DRAWN BY: DJE	
CHECKED BY: JJD	
APPROVED BY: JJD	
DATE: APRIL 23, 2010	
2010/GF ASBUILT/WASTE ZONE 7B.DWG	
REVISED:3-8-11	

PLAT OF TOPOGRAPHIC ASBUILT SURVEY

NEW EXCAVATION DELINEATION BARRIER
EAST SIDE (TRAP #7B AREA) OF THE
GLENS FALLS LANDFILL

JOHN J. DUNN
PROFESSIONAL LAND SURVEYOR

259 PARTITION STREET EXTENSION
RENSSELAER, NEW YORK 12144

PHONE: (518) 465-4682 FAX: (518) 465-4682

FIGURE 8

East Basin (Temporary Sediment Trap #7A Area)
Limits of Soil Excavation Map

CAD DWG. FILE NAME:EAST BASIN LIMITS OF EXCAVATION MAP.DWG

NONE :XREFS

PROJECT NUMBER: 05.5824

APPROXIMATE LIMIT OF PCB CONTAMINATED SOIL (LESS THAN 50 MG/KG) EXCAVATED AN ADDITIONAL 2 FEET IN DEPTH IN MAY 2010 AND PLACED BELOW LANDFILL COVER SYSTEM/CAP (1,713± SQ. FT.)

APPROXIMATE LIMIT OF POTENTIALLY ERODED PCB CONTAMINATED SOIL EXCAVATED 1–FOOT IN DEPTH IN JULY 2010 AND DISPOSED OF OFF–SITE (252± SQ. FT.)

APPROXIMATE LIMIT OF PCB CONTAMINATED SOIL (GREATER THAN 50 MG/KG) EXCAVATED AN ADDITIONAL 1.5 FEET IN DEPTH IN JULY 2010 AND DISPOSED OF OFF–SITE (169± SQ. FT.)

APPROXIMATE LIMIT OF PCB CONTAMINATED SOIL (LESS THAN 50 MG/KG) EXCAVATED AN ADDITIONAL 1–FOOT IN DEPTH IN MAY 2010 AND PLACED BELOW LANDFILL COVER SYSTEM/CAP (4,561± SQ. FT.)

AREA OF TEMPORARY SEDIMENT TRAP #7A DURING REMEDIAL CONSTRUCTION

EAST RETENTION BASIN

GLENS FALLS MUNICIPAL LANDFILL

SPILLWAY

IPF

6' HIGH CHAIN LINK FENCE

LEGEND

- EXISTING CONTOUR AT COMPLETION OF REMEDIAL CONSTRUCTION
- EXISTING INDEX CONTOUR AT COMPLETION OF REMEDIAL CONSTRUCTION
- BOTTOM OF DRAINAGE SWALE AND DIRECTION OF FLOW
- LIMIT OF GEOMEMBRANE LINER ANCHOR TRENCH
- 6" PERFORATED HDPE UNDERDRAIN PIPE

NOTE:

THE SIDE SLOPES AND BOTTOM OF THE EAST RETENTION BASIN WERE OVER–EXCAVATED 2 FEET FROM THE DESIGN ELEVATION IN APRIL 2010. THE ADDITIONAL EXCAVATION SHOWN HEREON WAS IN ADDITION TO THE ORIGINAL OVER–EXCAVATION PERFORMED.

BAR SCALE

30 0 15 30 60

1 inch = 30 ft.

MAP REFERENCE:

"FINAL COVER TOPOGRAPHIC SURVEY AND RECORD DRAWING GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD", TOWN OF QUEENSBURY AND CITY OF GLENS FALLS, WARREN COUNTY, NEW YORK PREPARED BY C.T. MALE ASSOCIATES, P.C. DATED DEC. 1, 2010, C.T. MALE PROJECT NO. 05.5824, C.T. MALE DWG.NO. 11–402.

DESIGNED : EWR
DRAFTED : MDD
CHECKED : EWR
PROJ. NO : 05.5824
SCALE : 1"=30'
DATE : NOV. 1, 2011

EAST BASIN (TEMPORARY SEDIMENT TRAP #7A AREA) LIMITS OF SOIL EXCAVATION MAP

GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

TOWN OF QUEENSBURY AND CITY OF GLENS FALLS — WARREN COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

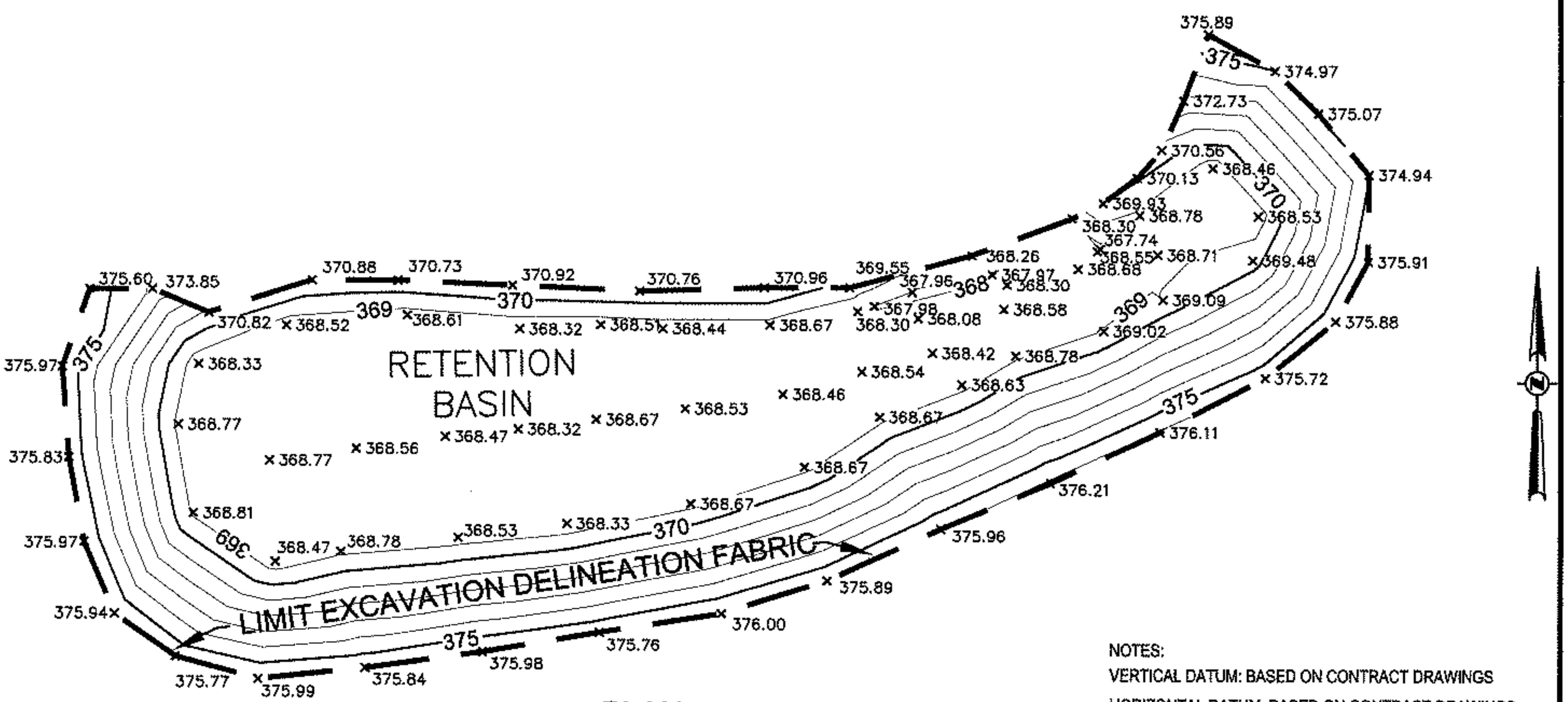
SHEET 1 OF 1

DWG. NO: 11–0502

EAST BASIN DWGS FOR EXCAVATION MAP.DWG

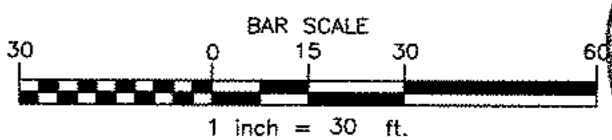
FIGURE 9

New Excavation Delineation Barrier
East Basin Glens Falls Landfill



PLAN

SCALE: 1"=30'



NOTES:

VERTICAL DATUM: BASED ON CONTRACT DRAWINGS

HORIZONTAL DATUM: BASED ON CONTRACT DRAWINGS

CONTOUR INTERVAL:1 FOOT

FIELD WORK COMPLETED 10-13-10

STATE OF NEW YORK · JOHN J. DUNN · 49576 · LICENSED LAND SURVEYOR

LIC. NO. #49,576

JOHN J. DUNN, P.L.S.

TOWN OF QUEENSBURY	
WARREN COUNTY	
STATE OF NEW YORK	
SCALE: 1" = 30'	
DRAWN BY: DJE	
CHECKED BY: JJD	
APPROVED BY: JJD	
DATE: NOV 15, 2010	
2010/OF ASBUILT/GBF POND 7A 3-8.DWG	
REVISED:3-8-11	

NEW EXCAVATION DELINEATION BARRIER

EAST BASIN

GLENS FALLS LANDFILL

JOHN J. DUNN
PROFESSIONAL LAND SURVEYOR

PHONE: (518) 465-4682 | FAX: (518) 465-4682

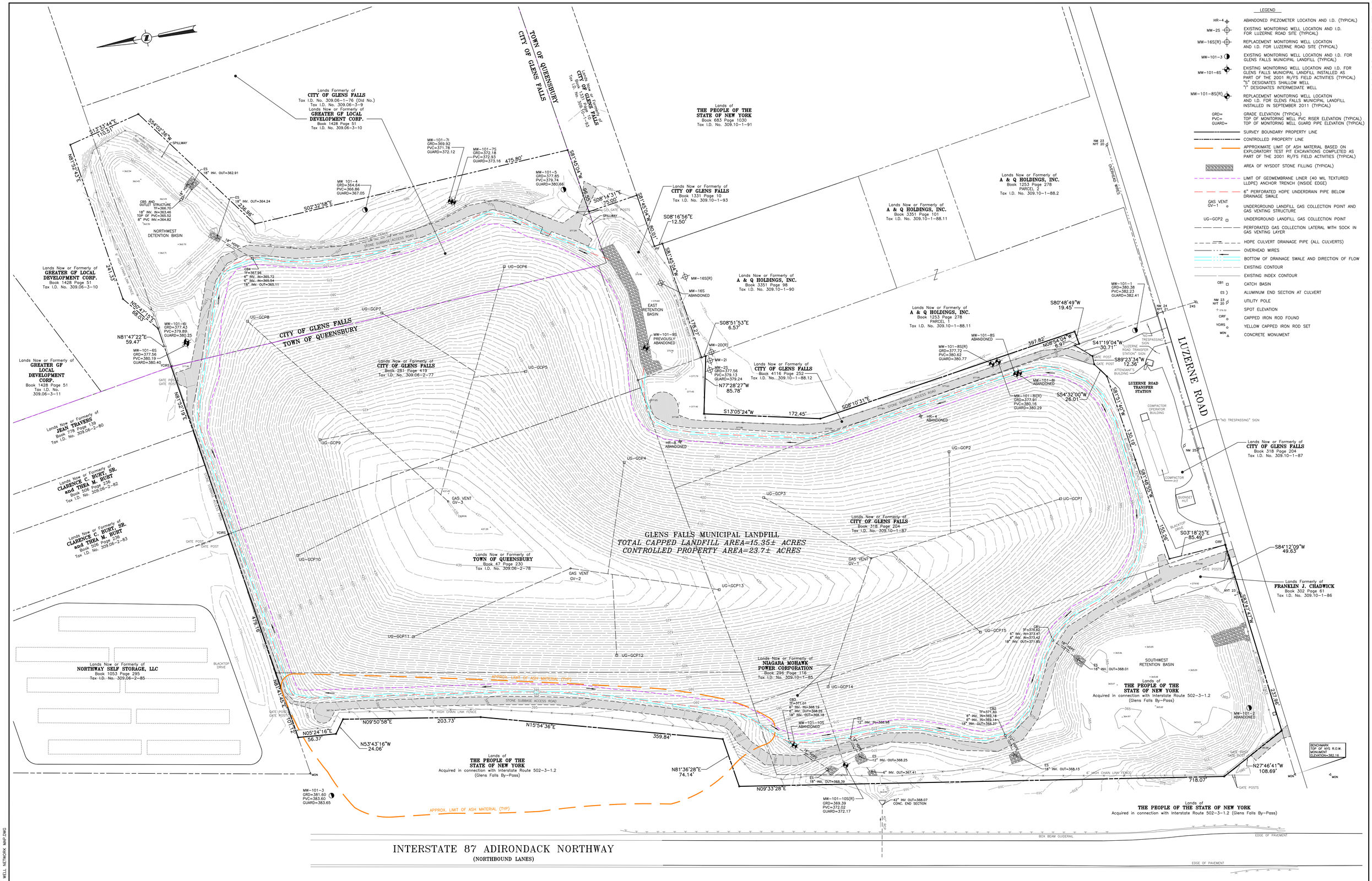
FIGURE 10

Groundwater Monitoring Well Network Map

XREFS: NONE

PROJECT NUMBER: 05.5824

CAD DWG. FILE NAME: GROUNDWATER MONITORING WELL N



LEGEND

- HR-4 — ABANDONED PIEZOMETER LOCATION AND I.D. (TYPICAL)
- MW-2S — EXISTING MONITORING WELL LOCATION AND I.D. FOR LUZERNE ROAD SITE (TYPICAL)
- MW-16S(R) — REPLACEMENT MONITORING WELL LOCATION AND I.D. FOR LUZERNE ROAD SITE (TYPICAL)
- MW-101-3 — EXISTING MONITORING WELL LOCATION AND I.D. FOR GLENS FALLS MUNICIPAL LANDFILL (TYPICAL)
- MW-101-6S — EXISTING MONITORING WELL LOCATION AND I.D. FOR GLENS FALLS MUNICIPAL LANDFILL INSTALLED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL) "S" DESIGNATES SHALLOW WELL "I" DESIGNATES INTERMEDIATE WELL
- MW-101-8S(R) — REPLACEMENT MONITORING WELL LOCATION AND I.D. FOR GLENS FALLS MUNICIPAL LANDFILL INSTALLED IN SEPTEMBER 2011 (TYPICAL)
- GRD= PVC= GUARD= — GRADE ELEVATION (TYPICAL) TOP OF MONITORING WELL PVC RISER ELEVATION (TYPICAL) TOP OF MONITORING WELL GUARD PIPE ELEVATION (TYPICAL)
- SURVEY BOUNDARY PROPERTY LINE
- CONTROLLED PROPERTY LINE
- APPROXIMATE LIMIT OF ASH MATERIAL BASED ON EXPLORATORY TEST PIT EXCAVATIONS COMPLETED AS PART OF THE 2001 RI/FS FIELD ACTIVITIES (TYPICAL)
- AREA OF NYSDOT STONE FILLING (TYPICAL)
- LIMIT OF GEOMEMBRANE LINER (40 MIL TEXTURED LLDPE) ANCHOR TRENCH (INSIDE EDGE)
- 6" PERFORATED HDPE UNDERDRAIN PIPE BELOW DRAINAGE SWALE
- GAS VENT GV-1 — UNDERGROUND LANDFILL GAS COLLECTION POINT AND GAS VENTING STRUCTURE
- UG-GCP2 — UNDERGROUND LANDFILL GAS COLLECTION POINT
- PERFORATED GAS COLLECTION LATERAL WITH SOCK IN GAS VENTING LAYER
- HDPE CULVERT DRAINAGE PIPE (ALL CULVERTS)
- OVERHEAD WIRES
- BOTTOM OF DRAINAGE SWALE AND DIRECTION OF FLOW
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- CB1 — CATCH BASIN
- ES — ALUMINUM END SECTION AT CULVERT
- NM 23 NYT 20 — UTILITY POLE
- 379.32 — SPOT ELEVATION
- CIRF — CAPPED IRON ROD FOUND
- YCIRS — YELLOW CAPPED IRON ROD SET
- MON — CONCRETE MONUMENT

MAP REFERENCE

1. "FINAL COVER TOPOGRAPHIC SURVEY AND RECORD DRAWING, GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD", TOWN OF QUEENSBURY AND CITY OF GLENS FALLS, WARREN COUNTY, NEW YORK, PREPARED BY C.T. MALE ASSOCIATES, DATED DECEMBER 1, 2010, C.T. MALE PROJECT NO. 05.5824, DWG. NO. 11-402.

BAR SCALE
50 0 25 50 100
1 inch = 50 ft.

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				

DESIGNED : EWR
DRAFTED : MDD
CHECKED : EWR
PROJ. NO: 05.5824
SCALE : 1"=50'

GROUNDWATER MONITORING WELL NETWORK MAP

GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD

TOWN OF QUEENSBURY AND CITY OF GLENS FALLS — WARREN COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 • FAX 518.786.7299

SHEET 1 OF 1
DWG. No. 11-2400

APPENDIX A

Metes and Bounds Description

DESCRIPTION
CONTROLLED PROPERTY AREA
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD
TOWN OF QUEENSBURY AND CITY OF GLENS FALLS,
COUNTY OF WARREN, STATE OF NEW YORK
AREA = 23.7± ACRES OF LAND

All that certain tract, piece or parcel of land situate in the Town of Queensbury and City of Glens Falls, County of Warren, State of New York, lying Northerly of Luzerne Road and Easterly of Interstate Route 87 Adirondack Northway, and being more particularly bounded and described as follows:

BEGINNING at a point on the Northerly road boundary of Luzerne Road at its point of intersection with the division line between the lands now or formerly of the City of Glens Falls as described in Book 318 of Deeds at Page 204 on the East and the lands formerly of Franklin J. Chadwick as described in Book 302 of Deeds at Page 61 on the West and runs thence from said point of beginning along said Northerly road boundary of Luzerne Road South 83 deg. 47 min. 47 sec. West 237.96 feet to a point; thence through the lands of the People of the State of New York acquired in connection with Interstate Route 502-3-1.2 (Glens Falls By-Pass) and along the Northeasterly, Easterly, Southerly and Southwesterly proposed division line of the lands of the People of the State of New York to be conveyed to the City of Glens Falls the following seven (7) courses: 1) North 27 deg. 46 min. 41 sec. West 108.69 feet to a point; 2) North 09 deg. 33 min. 28 sec. East 718.07 feet to a point; 3) North 81 deg. 36 min. 28 sec. East 74.14 feet to a point; 4) North 15 deg. 54 min. 36 sec. East 359.84 feet to a point; 5) North 09 deg. 50 min. 58 sec. East 203.73 feet to a point; 6) North 53 deg. 43 min. 16 sec. West 24.06 feet to a point; and 7) North 05 deg. 24 min. 16 sec. East 56.37 feet to a point on the common division line between the said lands of the People of the State of New York acquired in

connection with Interstate Route 502-3-1.2 (Glens Falls By-Pass), lands now or formerly of the Town of Queensbury as described in Book 47 of Deeds at Page 230 and lands now or formerly of the City of Glens Falls as described in Book 281 of Deeds at Page 419 on the South with the lands now or formerly of Northway Self Storage, LLC as described in Book 1053 of Deeds at Page 295, lands now or formerly of Clarence C. Burt, Sr. and Thea M. Burt as described in Book 506 of Deeds at Page 236 and lands now or formerly of Jean Travers as described in Book 778 of Deeds at Page 139 on the North; thence along the last mentioned common division line the following two (2) courses: 1) North 81 deg. 41 min. 45 sec. East 101.12 feet to a point; and 2) North 81 deg. 52 min. 19 sec. East 479.16 feet to a point; thence through the lands now or formerly of Greater GF Local Development Corp. as described in Book 1428 of Deeds at Page 51 and along the Northerly, Northwesterly, Easterly and Southeasterly proposed division line of lands now or formerly of Greater GF Local Development Corp. to be conveyed to the City of Glens Falls the following six (6) courses: 1) North 81 deg. 47 min. 22 sec. East 59.47 feet to a point; 2) North 50 deg. 47 min. 15 sec. East 68.03 feet to a point; 3) North 81 deg. 52 min. 43 sec. East 241.33 feet to a point; 4) South 13 deg. 33 min. 44 sec. East 110.51 feet to a point; 5) South 54 deg. 02 min. 36 sec. West 236.96 feet to a point; and 6) South 02 deg. 32 min. 58 sec. East 475.80 feet to a point on the division line between the said lands now or formerly of Greater GF Local Development Corp. on the North and the lands now or formerly of the City of Glens Falls as described in Book 1331 of Deeds at Page 10

on the South; thence South 81 deg. 45 min. 04 sec. West along the last mentioned division line 96.55 feet to a point; thence through the said lands now or formerly of the City of Glens Falls as described in Book 1331 of Deeds at Page 10 South 08 deg. 14 min. 31 sec. East 75.00 feet to a point on the division line between the said lands now or formerly of the City of Glens Falls on the North and the lands of the People of the State of New York as described in Book 683 of Deeds at Page 1030 on the South; thence South 81 deg. 45 min. 04 sec. West along the last mentioned division line 80.01 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls on the West and the said lands of the People of the State of New York as described in Book 683 of Deeds at Page 1030 on the East; thence South 08 deg. 16 min. 56 sec. East along the last mentioned division line 12.50 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls on the North and the lands now or formerly of A & Q Holdings, Inc. as described in Book 3351 of Deeds at Page 98 on the South; thence South 81 deg. 45 min. 04 sec. West along the last mentioned division line 178.27 feet to its point of intersection with the division line between the lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the West and the said lands now or formerly of A & Q Holdings, Inc. on the East; thence South 08 deg. 51 min. 53 sec. East along the last mentioned division line 6.57 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book

4116 of Deeds at Page 252 on the North and other lands now or formerly of A & Q Holdings, Inc. as described in Book 1253 of Deeds at Page 278 on the South; thence North 77 deg. 28 min. 27 sec. West along the last mentioned division line 85.78 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls on the West and the said lands now or formerly of A & Q Holdings, Inc. as described in Book 1253 of Deeds at Page 278 on the East; thence along the last mentioned division line the following two (2) courses: 1) South 13 deg. 05 min. 24 sec. West 172.45 feet to a point and 2) South 08 deg. 10 min. 31 sec. East 397.82 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the North and said lands now or formerly of A & Q Holdings, Inc. as described in Book 1253 of Deeds at Page 278 on the South; thence South 80 deg. 48 min. 49 sec. West along the last mentioned division line 19.45 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the East and the said lands now or formerly of the City of Glens Falls as described in Book 318 of Deeds at Page 204 on the West; thence North 08 deg. 54 min. 04 sec. West along the last mentioned division line 6.97 feet to a point; thence through the said lands now or formerly of the City of Glens Falls as described in Book 318 of Deeds at Page 204 the following six (6) courses: 1) South 41 deg. 19 min. 04 sec. West 30.71 feet to a point; 2) South 89 deg. 23 min. 34 sec. West 12.36 feet to a point;

3) South 54 deg. 32 min. 00 sec. West 26.01 feet to a point; 4) South 81 deg. 51 min. 40 sec. West 130.19 feet to a point; 5) South 81 deg. 48 min. 55 sec. West 155.26 feet to a point; and 6) South 03 deg. 18 min. 25 sec. East 85.49 feet to the point or place of beginning and containing 23.7± acres of land, more or less.

C.T. MALE ASSOCIATES

William J. Nettleton, PLS

November 1, 2011
WJN/amb/wjn
C.T. Male Project No. 05.5824

Note: The above described parcel of land is shown in its entirety on a map entitled "Final Cover Topographic Survey And Record Drawing Glens Falls Municipal Landfill At Luzerne Road," Town of Queensbury and City of Glens Falls, Warren County, New York, prepared by C.T. Male Associates, dated October 20, 2011, Dwg. No. 11-402.

APPENDIX B

Excavation Work Plan

APPENDIX B – EXCAVATION WORK PLAN

B-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the Department. This notification will be made to:

Brian Huyck, P.E., Regional Hazardous Waste Remediation Engineer
NYSDEC Region 5
1115 NYS Route 86, P.O. Box 296
Ray Brook, New York 12977-0296

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated 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;
- A summary of the applicable components of this Excavation Work Plan (EWP);
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix D of the SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

B-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the 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.

B-3 STOCKPILE METHODS

Stockpiles of imported clean soil will be continuously encircled with a berm and/or silt fence if not part of active construction activities for more than seven (7) days. Hay bales or other acceptable erosion and sediment control devices/methods will be used as needed near catch basins, surface waters and other discharge points in accordance with applicable stormwater regulations.

Stockpiles of potentially impacted existing soil/fill 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/or inspection forms and maintained at the site or the owner's place of business and available for inspection by NYSDEC.

B-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely 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.

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).

A stabilized construction entrance and/or truck wash (decontamination pad) or equal method will be operated on-site, as determined necessary by the qualified environmental professional. If there is the potential for trucks encountering contamination while on-site, a decontamination pad 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 or equal method, depending on the circumstance, before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional 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.

B-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 6NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the site, as necessary (refer to Section B-4). As applicable, truck wash waters will be collected and disposed of off-site in an appropriate manner.

All trucks loaded with site materials will exit the vicinity of the site using only approved truck routes. The truck routes will take 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.

B-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated from below the low permeability cover system/cap over the surface of the landfill and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. A waste manifest or bill of lading will be utilized for each shipment of waste off-site. If disposal of soil/fill 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. Unregulated off-site management of materials from this site will not occur without formal NYSDEC 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 (i.e., hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc.). Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

B-7 MATERIALS REUSE ON-SITE

Chemical criteria for on-site reuse of material have been approved by NYSDEC and are listed in Table 375-6.8(a) for Unrestricted Use Soil Cleanup Objectives (SCO). The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil will not be re-used on-site.

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.

B-8 FLUIDS MANAGEMENT

All contaminated liquids to be removed from the site will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations, including 6NYCRR Part 364. A waste manifest or bill of lading will be utilized for each shipment of waste off-site.

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 SPDES General Permit.

B-9 COVER SYSTEM RESTORATION

If the low permeability cover system/cap over the surface of the landfill is disturbed or damaged, it will be restored in a manner that complies with the NYSDEC approved Remedial Design Report (refer to Section 2.2.1.1 in the SMP for a description of the components of the cover system/cap). If the type of cover system changes from that which exists prior to the excavation, disturbance or damage, this will constitute a modification of the cover element of the remedy and require NYSDEC approval. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

B-10 EXCAVATION DELINEATION BARRIER (EDB) GEOTEXTILE RESTORATION AND SOIL SAMPLING

If the excavation delineation barrier (EDB) on the east side of the site in the area of the stormwater retention basin (East Basin) and in the area of the Temporary Sediment Trap #7B during the remedial action construction (west and southwest of the East Basin) is encountered during operation and maintenance activities at the site then protective measures, such as hand excavation, shall be undertaken to prevent damage or displacement of the geotextile. If a portion of the geotextile is damaged, a new section of fabric (Geotex 301 by Propex, Inc. or equal) that extends at least 2 feet beyond the damaged area shall be placed over the center of the damaged area and adhered to the underlying fabric by use of a spray adhesive or heat bonding, and the cover material restored.

If it is necessary to excavate below the EDB geotextile the procedures described in this EWP will be followed and overseen by a qualified environmental professional.

Soil that is excavated from below the EDB geotextile shall be segregated, stockpiled on-site on polyethylene in discrete piles of not greater than 50 cubic yards,

covered with polyethylene that is secured at its base, and subject to characterization sampling and testing. If it is desired to re-utilize the excavated soil on-site it shall be sampled and tested as described below to determine if it meets the Part 375-6.8(a) SCO for unrestricted use. If the excavated soil is going to be disposed of off-site, it shall be sampled and tested for the parameters and frequency required by the permitted treatment, storage or disposal facility (TSDF) to obtain disposal approval.

Required Testing for Potential Re-Use of Soil On-Site

If no evidence of staining or debris is encountered and the PID meter readings are less than 10 parts per million (ppm), then one composite soil sample from each 50 cubic yards of material removed shall be collected and analyzed for target compound list (TCL) PCBs by EPA Method 8082. Each composite soil sample shall be collected from a minimum of five locations within each soil stockpile that is a maximum of 50 cubic yards.

If evidence of staining, capacitor paper or debris are present, or if PID meter readings of 10 ppm (sustained) or greater are measured, then one composite soil sample from each 50 cubic yards of material removed shall be collected and analyzed for TCL semi-volatile organic compounds (SVOCs) by EPA Method 8270, TCL PCBs by EPA Method 8082, TCL pesticides by EPA Method 8081, priority pollutant metals (arsenic, barium, beryllium, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver and zinc) by EPA Method 6010B and EPA Method 7471 for mercury, hexavalent chromium by EPA Method 7196, cyanide by EPA Method 9010 and pH by EPA Method 9045C. Each composite soil sample shall be collected from a minimum of five locations within each soil stockpile that is a maximum of 50 cubic yards. In addition, one grab soil sample where the highest PID meter is obtained shall be collected and analyzed for TCL VOCs by EPA Method 8260.

The laboratory analyses shall be performed by a NYSDOH ELAP certified laboratory. The following sampling procedures shall be followed:

- A new clean pair of sampling gloves shall be worn for each sample collected. The samples shall be collected with a gloved hand.
- Only new pre-cleaned laboratory provided glass sample containers with Teflon lined caps shall be used for the soil samples.
- The sample for VOCs analysis shall be a grab sample placed directly into the sample container, and the sample for the other specified parameters shall be a composite sample. The composite sample shall consist of 5 discrete samples collected with a new clean gloved hand and placed in a new clean zip lock plastic bag. The sample shall be homogenizing within the plastic bag and then placed into the sample container.
- Sample labels shall be prepared prior to sampling and affixed to the sample containers. The client, project name, site location, matrix, sample type (grab or composite) and laboratory analyses to be performed shall be recorded on the sample labels prior to sampling. The sample location, date, sampler's initials and time shall be filled out on the sample label at the time of sampling.
- A chain of custody record to track samples from sample collection to delivery to the analytical laboratory shall be completed.
- Place laboratory containers with samples in cooler with bagged ice and deliver to the analytical laboratory.

If the soil sampling results meet the Part 375-6.8(a) SCO for unrestricted use, the soil can be re-utilized on-site. Otherwise the soil shall be transported and properly disposed of off-site in accordance with this EWP at a TSDF permitted to accept the waste being disposed of.

Post-Excavation Soil Sampling

At completion of soil excavation and prior to installation of new EDB geotextile, the soil remaining in place below where the EDB geotextile was disturbed/removed shall be sampled to document the level of PCBs present, if any. One composite soil sample for every 500 square feet of excavation face (side wall) and bottom shall be collected and analyzed for TCL PCBs by EPA Method 8082. The soil sampling procedures previously

described in this section shall be followed. The easting and northing coordinates and vertical elevation of the soil sampling locations shall be surveyed by a NYS licensed land surveyor.

Installation of New Excavation Delineation Barrier Geotextile and Backfill

At completion of the post-excavation soil sampling, new EDB geotextile (Geotex 301 by Propex, Inc. or equal) shall be placed over the side walls and bottom of the excavated area to demarcate the limit of excavation and demarcate existing soils from imported materials. Each panel of geotextile shall be overlapped a minimum of 12 inches. The surface elevation and horizontal location of the new EDB geotextile shall be surveyed by a NYS licensed land surveyor.

The excavation shall be backfilled with either the excavated soil if it meets the Part 375-6.8(a) SCO for unrestricted use or imported material (refer to Section B-11) that meets the Part 375-6.8(a) SCO for unrestricted use.

The soil sampling laboratory analysis reports and chain of custody records, surveyed soil sampling locations, and surveyed location of the new EDB geotextile will be included in the Periodic Review Report.

B-11 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or 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 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 375-6.8(a) for unrestricted use sites for soils to be used above the low permeability cover system/cap and other areas on the site. Soils that meet

'exempt' fill requirements under 6NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Documentation on the source of the imported material shall be obtained prior to delivery to the site including: the location and address where the material is being obtained; the name and telephone number of the person providing the information and relationship to the source of the material; the identification of any state or local approvals as a fill source, and if no prior approval is available for the source, a brief history of the use of the property which is the source of the material; and NYSDOT certification, where applicable, that imported material is from NYSDOT approved source and that the material is clean and acceptable.

Each source of imported soil shall be tested by a NYSDOH ELAP certified laboratory for TCL VOCs by EPA Method 8260, TCL SVOCs by EPA Method 8270, TCL PCBs by EPA Method 8082, TCL pesticides by EPA Method 8081, priority pollutant metals (arsenic, barium, beryllium, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver and zinc) by EPA Method 6010B and EPA Method 7471 for mercury, hexavalent chromium by EPA Method 7196 and cyanide by EPA Method 9010. The frequency of testing shall be one composite sample per source per 500 cubic yards of material.

The following sampling procedures shall be followed:

- A new clean pair of sampling gloves shall be worn for each sample collected. The samples shall be collected with a gloved hand.
- Only new pre-cleaned laboratory provided glass sample containers with Teflon lined caps shall be used for the soil samples.
- The sample for VOCs analysis shall be a grab sample placed directly into the sample container, and the sample for the other specified parameters shall be a composite sample. The composite sample shall consist of 3 to 5 discrete samples collected with a new clean gloved hand from the truck load of material being sampled and placed in a new clean zip lock plastic bag. The

sample shall be homogenizing within the plastic bag and then placed into the sample container.

- Sample labels shall be prepared prior to sampling and affixed to the sample containers. The client, project name, site location, matrix, sample type (grab or composite) and laboratory analyses to be performed shall be recorded on the sample labels prior to sampling. The sample location, date, sampler's initials and time shall be filled out on the sample label at the time of sampling.
- A chain of custody record to track samples from sample collection to delivery to the analytical laboratory shall be completed.
- Place laboratory containers with samples in cooler with bagged ice and deliver to the analytical laboratory.

The documentation on the source of the imported material and the laboratory analysis reports and chain of custody records on testing of imported material will be included in the Periodic Review Report.

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.

B-12 STORMWATER POLLUTION PREVENTION

A Stormwater Pollution Prevention Plan (SWPPP) for Construction Activities, Glens Falls Municipal Landfill At Luzerne Road Remedial Construction, dated December 1, 2008 and revised June 10, 2009 by C.T. Male Associates was prepared for the site as part of the remedial action construction. If construction activities at the site will disturb greater than one acre, the work shall be performed in accordance with the referenced SWPPP and the requirements of the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, General Permit No. GP-0-10-001, effective January 29, 2010 or most recent update.

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 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

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

B-13 CONTINGENCY PLAN

If 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.

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 by a NYSDOH ELAP certified laboratory for full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone 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 Reports prepared pursuant to Section 5 of the SMP.

B-14 COMMUNITY AIR MONITORING PLAN

A Community Air Monitoring Plan (CAMP) will be followed during ground intrusive field activities. The intent of the CAMP is to provide a measure of protection for the downwind community (i.e., off-site receptors and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative or remedial work activities. The CAMP will monitor the air for potentially contaminated dust (Particulate Air Monitoring), particulates with PCBs (PCB Air Monitoring) and volatile organic compound vapors (VOC Air Monitoring) at the downwind perimeter of each designated work area. 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.

In the event of poor weather such as heavy snow or rain, particulate monitoring will not be performed. These weather conditions would limit the effectiveness of the sensitive monitoring equipment. Work activities will be halted if fugitive dust migration is visually observed. Attempts will be made to continue periodic VOC monitoring, but the weather may also prevent this activity.

Particulate Air Monitoring

During ground intrusive work below the excavation delineation barrier (EDB) geotextile, and during contaminated soil and/or landfill waste disturbance work particulate monitoring shall be performed. At a minimum three real-time particulate monitors capable of continuously measuring concentrations of particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes

will be used. The instruments will be placed at temporary monitoring stations based on the prevailing wind direction each day, one upwind and at a minimum two downwind of the work area. The particulate monitoring instruments will be capable of displaying the short term exposure limit (STEL) or 15 minute averaging period, which will be field checked and recorded for comparison to the NYSDOH Generic Community Air Monitoring Plan action levels for PM-10, as listed below. The particulate readings will be manually monitored, but the instruments are programmed to alarm at preset action levels. Instantaneous readings will be recorded periodically throughout the work day. At the end of each day, the readings for each instrument will be downloaded to a PC and retained for future reference and reporting.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/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 mcg/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 mcg/m^3 of the upwind level and in preventing visible dust migration.

PCB Air Monitoring

During ground intrusive work below the EDB geotextile and/or landfill waste disturbance activities particulate monitoring for PCBs shall be performed. PCB monitoring will include collection of particulate samples from particulate monitors. At a minimum, one upwind and two downwind from the work area samples will be collected. The samples will be collected over an 8-hour period (8-hour composite) using low

volume sampling pumps and collected during the normal work hours when activities are occurring on-site. The particulate samples will be analyzed for PCBs by EPA Method TO-10A or equal.

If the downwind sampling results for PCBs above show total PCB concentrations approaching (at approximately 80% of) 260 nanograms per cubic meter, then two additional downwind samples will be collected. Also, an evaluation of activities and controls to reduce the airborne PCB levels will be initiated and implemented. If the additional downwind sampling results show total PCB concentrations approaching (at approximately 80% of) 110 nanograms per cubic meter, then a re-evaluation of activities and controls to reduce the airborne PCB levels will be initiated and implemented.

VOC Air Monitoring

During ground intrusive work below the EDB geotextile, and during contaminated soil and/or landfill waste disturbance work VOCs shall be monitored at the downwind perimeter of the immediate work area on a continuous basis. Upwind concentrations shall also be measured continuously to establish background conditions. A MiniRAE 2000 handheld VOC monitor or equal will used to perform the VOCs monitoring. This unit is capable of displaying the STEL (15 minute averaging period) which will be field checked and recorded for comparison to the NYSDOH Generic Community Air Monitoring Plan action levels for VOCs, as listed below. The VOC readings (STEL) will be recorded for future reference and reporting. Instantaneous readings will be recorded periodically throughout the work day. At the end of each day, the readings for the continuous monitoring instrument will be downloaded to a PC and retained for future reference and reporting.

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

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

Air sampling stations will be based on generally prevailing wind conditions. 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.

B-15 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis will include limiting the area of open excavations or covering the excavation with tarps at the end of each work day, and minimizing the size of soil stockpiles or covering soil stockpiles. 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 property owner'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.

B-16 DUST CONTROL PLAN

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 though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- 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.
- Other methods of dust suppression to be used, as necessary, include: wetting equipment and excavation faces, spraying water on buckets during excavation and dumping, hauling material in properly tarped containers, restricting vehicle speeds to 10 mph, reducing the excavation size, covering

excavated areas, seeding soil stockpiles, and using atomizing sprays to conserve water and prevent overly wet conditions.

B-17 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor, as necessary, during all remedial work.

A plan will be developed and utilized by the contractor, as necessary, for all remedial work to ensure compliance with local noise control ordinances.

APPENDIX C

Environmental Easement

WARREN COUNTY – STATE OF NEW YORK

PAMELA J. VOGEL, COUNTY CLERK
1340 STATE ROUTE 9,
LAKE GEORGE, NEW YORK 12845

COUNTY CLERK'S RECORDING PAGE

THIS PAGE IS PART OF THE DOCUMENT – DO NOT DETACH

BOOK/PAGE: 6786 / 254
INSTRUMENT #: 2023-2449

Receipt#: 2023576009
Clerk: AD
Rec Date: 05/12/2023 11:15:02 AM
Doc Grp: RP
Descrip: EASEMENT
Num Pgs: 13
Rec'd Frm: KLINGEBIEL LAW OFFICES PLLC

Party1: GLENS FALLS CITY OF
Party2: NEW YORK PEOPLE OF THE STATE OF
Town: QUEENSBURY
GLENS FALLS

Recording:	
Cover Page	5.00
Recording Fee	80.00
Cultural Ed	14.25
Records Management - Coun	1.00
Records Management - Stat	4.75
TP584	5.00
Sub Total:	110.00
Transfer Tax	
Transfer Tax - State	0.00
Sub Total:	0.00
Total:	110.00

**** NOTICE: THIS IS NOT A BILL ****

***** Transfer Tax *****
Transfer Tax #: 2241
Transfer Tax
Consideration: 0.00

Total: 0.00

Record and Return To:

KLINGEBIEL LAW OFFICES PLLC
PO BOX 2152
32 SHERMAN AVE
GLENS FALLS NY 12801

WARNING***
*** Information may be amended during the verification process, and may not be reflected on this cover page.

I hereby certify that the within and foregoing was recorded in the Warren County Clerk's Office, State of New York.
This sheet constitutes the Clerks endorsement required by Section 316 of the Real Property Law of the State of New York.

Pamela J. Vogel
Warren County Clerk

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

THIS INDENTURE made this 19th day of April, 2023, between Owner, City of Glens Falls, having an office at 42 Ridge Street, County of Warren, 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 Luzerne and Veterans Road in the City of Queensbury, County of Warren and State of New York, known and designated on the tax map of the County Clerk of Warren as:

Section Block Lot number	Deed Date	Date of Recording	County Where Recoded	Liber and Page
309.06-2-77	9/26/1949	10/9/1949	Warren	Book 281, Page 419
309.06-3-10	3/30/2016	4/1/2016	Warren	Book 5332, page 102
309.10-1-85	3/15/2012	4/30/2012	Warren	Bok 4477, page 278
309.10-1-99	12/12/2018	12/12/2018	Warren	Book 5861, page 223
309.10-1-87	3/17/1937	3/25/1937	Warren	Book 204,

				page 318
309.10-1-88.12	10/7/2010	11/3/2010	Warren	Book 4116, page 252
309.10-1-93	7/23/2003	7/31/2003	Warren	Book 1331, page 10
309.06-2-86; 309.10-1-98	12/18/2012	10/8/2013	Warren	Book 4867, page 32
309.06-2-78	2/10/2020	4/9/2020	Warren	Book 6093, page 311

The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 23.7 +/- acres, and is hereinafter more fully described in the Land Title Survey dated September 14, 2021, revised on February 10, 2023 prepared by Donald E. Albrecht, which will be attached to the Site Management Plan. The Controlled Property description 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 public 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 Order on Consent Index Number: A7-0383-9903, 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:

its current use as a closed landfill; and renewable energy projects, pending Department approval;

(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) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Warren 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;

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

(6) 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;

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

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

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

(10) 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 Residential, Restricted Residential or Commercial purposes, excepting renewable energy projects as noted in Section A, as defined in 6NYCRR 375-1.8(g)(i), (ii) and (iii), 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:

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

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, at such time as NYSDEC may require, 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 by 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: 557003

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.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

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

City of Glens Falls:

By: _____

Print Name: S. William Collins

Title: Mayor Date: 3/28/23

Grantor's Acknowledgment

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

On the 28th day of March, in the year 2023 before me, the undersigned, personally appeared S. William Collins, 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.

_____
Notary Public - State of New York

DAVID C. KLINGEBIEL
Notary Public, State of New York
Saratoga County #02KL6146780
Commission Expires May 22, 2026

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: _____
Andrew O. Guglielmi, Director
Division of Environmental Remediation

Grantee's Acknowledgment

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

On the 19th day of April, in the year 2023 before me, the undersigned, personally appeared Andrew O. Guglielmi, 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

JENNIFER ANDALORO
Notary Public, State of New York
No. 02AN6098246
Qualified in Albany County
Commission Expires January 14, 2024

SCHEDULE "A" PROPERTY DESCRIPTION

GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD
TOWN OF QUEENSBURY AND CITY OF GLENS FALLS,
COUNTY OF WARREN, STATE OF NEW YORK
AREA = 23.7± ACRES OF LAND

All that certain tract, piece or parcel of land situate in the Town of Queensbury and City of Glens Falls, County of Warren, State of New York, lying Northerly of Luzerne Road and Easterly of Interstate Route 87 Adirondack Northway, and being more particularly bounded and described as follows:

BEGINNING at a point on the Northerly road boundary of Luzerne Road at its point of intersection with the division line between the lands now or formerly of the City of Glens Falls as described in Book 204 of Deeds at Page 318 on the East and other lands now or formerly of the City of Glens Falls as described in Book 5861 of Deeds at Page 223 on the West and runs thence from said point of beginning along said Northerly road boundary of Luzerne Road South 83 deg. 47 min. 47 sec. West 237.96 feet to its point of intersection with the Northeasterly highway boundary of Interstate Route 87 Adirondack Northway; thence along the Northeasterly, Easterly, Southerly and Southwesterly highway boundary the following seven (7) courses: 1) North 27 deg. 46 min. 41 sec. West 108.69 feet to a point; 2) North 09 deg. 33 min. 28 sec. East 718.07 feet to a point; 3) North 81 deg. 36 min. 28 sec. East 74.14 feet to a point; 4) North 15 deg. 54 min. 36 sec. East 359.84 feet to a point; 5) North 09 deg. 50 min. 58 sec. East 203.73 feet to a point; 6) North 53 deg. 43 min. 16 sec. West 24.06 feet to a point; and 7) North 05 deg. 24 min. 16 sec. East 56.37 feet to its point of intersection with the common division line between the lands now or formerly of the City of Glens Falls as described in Book 4867 of Deeds at Page 32, Book 6093 of Deeds at Page 311, and Book 281 of Deeds at Page 419 on the South and the lands now or formerly of Northway Self Storage, LLC as described in Book 1053 of Deeds at Page 295 and Book 5968 of Deeds at Page 141, lands now or formerly of Clarence C. Burt Jr., Lester H. Burt, Beverly L. Corentto, Leslie Burt and Thea M. Burt as described in Book 1366 of Deeds at Page 82 and Book 4657 of Deeds at Page 155; and lands now or formerly of Wayne A. Flagg as described in Book

5343 of Deeds at Page 229 on the North; thence along the last mentioned common division line the following two (2) courses: 1) North 81 deg. 41 min. 45 sec. East 101.12 feet to a point; and 2) North 81 deg. 52 min. 19 sec. East 479.16 feet to its point of intersection with the division line between the lands now or formerly of City of Glens Falls as described in Book 5332 of Deeds at Page 102 on the South and Southeast and the lands now or formerly of The Greater Glens Falls Development Corporation as described in Book 1428 of Deeds at Page 51 on the North and Northwest; thence along said division line the following three (3) courses: 1) North 81 deg. 47 min. 22 sec. East 59.47 feet to a point; 2) North 50 deg. 47 min. 15 sec. East 68.03 feet to a point; and 3) North 81 deg. 52 min. 43 sec. East 241.33 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 5332 of Deeds at Page 102 on the West and Northwest and the said lands now or formerly of The Greater Glens Falls Development Corporation on the East and Southeast; thence along said division line the following three (3) courses: 1) South 13 deg. 33 min. 44 sec. East 110.51 feet to a point; 2) South 54 deg. 02 min. 36 sec. West 236.96 feet to a point; and 3) South 02 deg. 32 min. 58 sec. East 475.80 feet to its point of intersection with the division line between the said lands now or formerly of City of Glens Falls as described in Book 5332 of Deeds at Page 102 on the North and other lands now or formerly of the City of Glens Falls as described in Book 1331 of Deeds at Page 10 on the South; thence South 81 deg. 45 min. 04 sec. West along the last mentioned division line 96.55 feet to a point; thence through the said lands now or formerly of the City of Glens Falls as described in Book 1331 of Deeds at Page 10 South 08 deg. 14 min. 31 sec. East 75.00 feet to a point on the division line between the said lands now or formerly of the City of Glens Falls as described in Book 5332 of Deeds at Page 102 on the North and the lands of the People of the State of New York as described in Book 683 of Deeds at Page 1030 on the South; thence South 81 deg. 45 min. 04 sec. West along the last mentioned division line 80.01 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls on the

West and the said lands of the People of the State of New York as described in Book 683 of Deeds at Page 1030 on the East; thence South 08 deg. 16 min. 56 sec. East along the last mentioned division line 12.50 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 1331 of Deeds at Page 10 on the North and the lands now or formerly of A & Q Holdings, Inc. as described in Book 3351 of Deeds at Page 98 and Book 3415 of Deeds at Page 311 on the South; thence South 81 deg. 45 min. 04 sec. West along the last mentioned division line 178.27 feet to its point of intersection with the division line between the lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the West and the said lands now or formerly of A & Q Holdings, Inc. on the East; thence South 08 deg. 51 min. 53 sec. East along the last mentioned division line 6.57 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the North and other lands now or formerly of A & Q Holdings, Inc. as described in Book 1253 of Deeds at Page 278 on the South; thence North 77 deg. 28 min. 27 sec. West along the last mentioned division line 85.78 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 204 of Deeds at Page 318 on the West and the said lands now or formerly of A & Q Holdings, Inc. as described in Book 1253 of Deeds at Page 278 on the East; thence along the last mentioned division line the following two (2) courses: 1) South 13 deg. 05 min. 24 sec. West 172.45 feet to a point; and 2) South 08 deg. 10 min. 31 sec. East 397.82 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the North and the said lands now or formerly of A & Q Holdings, Inc. as described in Book 1253 of Deeds at Page 278 on the South; thence South 80 deg. 48 min. 49 sec. West along the last mentioned division line 19.45 feet to its point of intersection with the division line between the said lands now or formerly of the City of Glens Falls as described in Book 4116 of Deeds at Page 252 on the East

and the said lands now or formerly of the City of Glens Falls as described in Book 204 of Deeds at Page 318 on the West; thence North 08 deg. 54 min. 04 sec. West along the last mentioned division line 6.97 feet to a point; thence through the said lands now or formerly of the City of Glens Falls as described in Book 204 of Deeds at Page 318 the following six (6) courses: 1) South 41 deg. 19 min. 04 sec. West 30.71 feet to a point; 2) South 89 deg. 23 min. 34 sec. West 12.36 feet to a point; 3) South 54 deg. 32 min. 00 sec. West 26.01 feet to a point; 4) South 81 deg. 51 min. 40 sec. West 130.19 feet to a point; 5) South 81 deg. 48 min. 55 sec. West 155.26 feet to a point; and 6) South 03 deg. 18 min. 25 sec. East 85.49 feet to the point or place of beginning and containing 23.7 acres of land, more or less.

C.T. MALE ASSOCIATES

William J. Nettleton, P.L.S.

September 10, 2021
WJN/amb
C.T. Male Project No. 05 5824
Dwg. No. 21-0543

APPENDIX D

Sample Health and Safety Plan and Community Air Monitoring Plan

August 2001, Revised November 24, 2008 and June 10, 2009

HEALTH AND SAFETY PLAN

Glens Falls Municipal Landfill At
Luzerne Road Site
Town of Queensbury
Warren County, New York
NYSDEC Site No. 5-57-003
SAC No. C303503

Prepared for:

CITY OF GLENS FALLS
City of Glens Falls
42 Ridge Street
Glens Falls, New York 12801

Prepared by:

C.T. MALE ASSOCIATES, P.C.
50 Century Hill Drive
P.O. Box 727
Latham, New York 12110
(518) 786-7400
FAX (518) 786-7299

C.T. Male Project No: 05.5824

SITE SPECIFIC HEALTH AND SAFETY PLAN
PRE-REMEDIAL ACTION SAMPLING, REMEDIAL DESIGN AND REMEDIAL CONSTRUCTION
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD
TOWN OF QUEENSBURY, NEW YORK

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TOWN OF QUEENSBURY, NEW YORK

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1.0 GENERAL

1.1 Overview

This Site Specific Health and Safety Plan (HASP) has been prepared for use during the Pre-Remedial Action Sampling, Remedial Design and Remedial Construction (landfill closure and capping) of the Glens Falls Municipal Landfill At Luzerne Road Site ("the Site", "Glens Falls Landfill") located in the Town of Queensbury, Warren County, New York. This HASP has been developed by C.T. Male Associates, P.C. (C.T. Male) as an integral part of this project under Title 3 of the Environmental Quality Bond Act (EQBA).

A designated Health and Safety Officer (HSO) will be responsible for implementing this HASP during the completion of field work. All C.T. Male employees, persons or third parties who enter the work area (support, decontamination, exclusion zone) must comply with this HASP. A copy of this HASP will be maintained at the work area throughout the duration of the project. This HASP will be amended as necessary should field tasks change during the course of the Remedial Design Investigation, Remedial Design and Remedial Construction.

WORK AREA:

The work will be performed within the property boundaries associated with the Glens Falls Landfill, within surrounding areas were the landfill waste mass extends onto adjacent properties, within areas to be obtained by the City for the remedial construction, and within areas adjacent to the landfill waste mass where temporary access will be needed in order to facilitate the remedial construction.

SCOPE OF WORK:

The anticipated field activities associated with the Pre-Remedial Action Sampling and Remedial Design include wetlands delineation, topographic and planimetric field survey of select locations around the landfill perimeter and in the area of the landfill, groundwater purging and sampling of existing monitoring wells, and soil vapor intrusion/soil gas sampling. The anticipated field activities associated with the Remedial Construction include construction observation, monitoring well installations to replace select wells that will be impacted by the remedial

construction, monitoring well development, groundwater purging and sampling, and topographic and planimetric field survey of the capped landfill and associated features at completion of the remedial construction.

1.2 Contact Names and Numbers

For this project, the following New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), City of Glens Falls, C.T. Male and Emergency Response names and telephone numbers are presented below as Site contacts.

NYSDEC CONTACTS:

PROJECT MANAGER: (Glens Falls Landfill Site)	Heide-Marie Dudek, P.E. NYSDEC Central Office Division of Environmental Remediation 625 Broadway Avenue, 11th Floor Albany, New York 12233-7015	518.402.9622
PROJECT MANAGER: (Luzerne Road Site)	Gerard Burke, P.E. NYSDEC Central Office Division of Environmental Remediation 625 Broadway Avenue, 12th Floor Albany, New York 12233-7017	518.402.9814

NYSDOH CONTACT:

PUBLIC HEALTH SPECIALIST II:	Beth Guidetti NYSDOH Bureau of Environmental Exposure Investigation Flanigan Square, 547 River Street Troy, New York 12180-2216	518.402.7860

CITY OF GLENS FALLS CONTACTS:

MAYOR:	John Diamond City of Glens Falls, City Hall 42 Ridge Street Glens Falls, New York 12801	518.761.3804

CITY ENGINEER:	Steve Gurzler Water and Sewer Superintendent, and City Engineer Glens Falls Wastewater Treatment Plant 2 Shermantown Road Glens Falls, New York 12801	518.761.3815, Ext. 26

CONSULTANT CONTACTS:

CONSULTING ENGINEER:	C.T. Male Associates, P.C. 50 Century Hill Drive, P.O. Box 727 Latham, New York 12110	(518) 786-7400
	Elizabeth Rovers, P.E., Project Manager	(518) 786-7492
	Jeffrey Marx, P.E., Health & Safety Coordinator	(518) 786-7548

EMERGENCY PHONE NUMBERS:

PERSONAL INJURY:	Glens Falls Hospital 100 Park Street Glens Falls, New York 12801	518.926.1000
FIRE DEPARTMENT:	Emergency	911
	Non-Emergency West Glens Falls Fire Company #1 33 Luzerne Road Queensbury, New York 12804	792.8144
POLICE:	Emergency	911
	Non-Emergency Warren County Sheriff's Office 1400 State Route 9, Lake George, NY 12845	518.743.2500
	Glens Falls Police Depart. Headquarters 42 Ridge Street, Glens Falls, NY 12801	518.761.3840
CENTRAL NEW YORK POISON CONTROL CENTER:	Central New York Poison Control Center 750 East Adams Street Syracuse, New York 13210	(800) 222-1222 Admin # (315) 464-7078
NATIONAL RESPONSE CENTER:	c/o United States Coast Guard (G-OPF) 2100 2nd Street, Southwest - Room 2611 Washington, DC 20593-0001	(800) 424-8802
NYSDEC SPILL HOTLINE:		(800) 457-7362

2.0 HEALTH AND SAFETY PERSONNEL

The HSO will be responsible for all health and safety activities and the delegation of health and safety duties. The Health and Safety Officer will be responsible for the resolution of any safety issues which arise during site work. If and when field operations are Level D, it will not be necessary for the HSO to be present on-site at all times. When the HSO is not present on-site, a designee will be authorized to perform the duties of the HSO. The designee will be responsible for implementation of the HASP.

The HSO or designee has stop work authorization which the HSO or designee will execute upon the HSO or designee's determination of an eminent safety hazard, emergency situation or other potentially dangerous situations (e.g. weather conditions), where this action is appropriate. Authorization to proceed with the work will be issued only by the HSO or a designee.

3.0 SITE LOCATION AND DESCRIPTION

The Glens Falls Municipal Landfill at Luzerne Road is located north of Luzerne Road and east of Interstate 87 (Adirondack Northway) in the Town of Queensbury, Warren County, New York. The landfill property encompasses approximately 14.25 acres and the area of the waste mass on the latter property encompasses approximately 12.93 acres. The area of waste mass that extends onto adjoining properties is approximately 2.92 acres. The total area within the limit of waste mass both on-site and off-site is approximately 15.85 acres.

An active transfer station operated by the Town of Queensbury for residents of Warren County is located between the landfill mass and Luzerne Road. The transfer station opened on January 2, 1977 and accepts municipal waste and recyclables. It consists of a small attendant's building, a covered compactor and associated building and 50 cubic yard container, and containers for the recyclable materials.

Currently, the landfill is covered with trees and overgrown grass/brush/weed vegetation. Several dirt trails traverse the landfill in various directions and appear to be regularly utilized by off-road vehicles. There are sporadic locations where the landfill mass has limited soil cover causing its contents (i.e., refuse, tires, corroded drums, etc.) to become exposed. Although the landfill can be accessed from many points, the two primary access points are the transfer station off of Luzerne Road and a dirt road off of Veterans Road to the east. Additionally, the access to the site from points other than the transfer station (which is gated) is uncontrolled.

4.0 POTENTIAL SITE CONTAMINANTS

According to historical records, the subject site was used primarily for municipal solid waste (refuse), however, some quantity of PCB capacitors may have been deposited at the site. Right to Know information reportedly indicated that five (5) tons of ink sludge waste may have also been deposited at the site.

As described in the Remedial Investigation Report and summarized in the Remedial Design Report, numerous soil, groundwater and sediment samples were collected to characterize the nature and extent of contamination. The main categories of contaminants that exceeded their Standards, Criteria and Guidance (SCGs) were select volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals and leachate indicator parameters in various media at the Site.

5.0 HAZARD ASSESSMENT

5.1 General

The hazard assessment, use of specific protective equipment, and monitoring associated with each field work task to be conducted at the subject Site are presented in the following subsections.

For this project, C.T. Male will be subcontracting portions of the work. Each subcontractor will be responsible for developing and implementing a Site Specific Health and Safety Plan for their activities, for protection of their employees, and use of personal protective equipment. The subcontractor will also be responsible for developing and following their own Respiratory Protection Program, as applicable.

5.2 Wetlands Delineation

The wetlands delineation work will not be intrusive, except shallow spade holes to observe the soil conditions. Exposure to potential Site contaminants is considered remote during the later activities. The potential hazards include slip and fall hazards from poor terrain, cuts from improper use of vegetation cutting tools, the possibility of skin and eye damage from walking through brush, and potential for tick bites. To protect against these potential hazards, any personnel completing this work should wear, at a minimum, safety glasses, steel-toe safety/work boots, full length pants and hard hat.

5.3 Field Survey

The planimetric and topographic survey pre-construction and post-construction, the field survey of wetlands pre-construction and the field survey of monitoring wells post-construction will be performed by a survey crew, and this work will not be intrusive. Exposure to potential Site contaminants is considered remote during the later activities. The potential hazards to the survey crew include slip and fall hazards from poor terrain, cuts from improper use of vegetation cutting tools, the possibility of skin and eye damage from walking through brush, and potential for tick bites. To protect against these potential hazards, personnel completing this

work should wear, at a minimum, safety glasses, steel-toe safety/work boots, full length pants and hard hat.

5.4 Soil Vapor Intrusion/Soil Gas Sampling

Soil vapor intrusion/soil gas sampling will be performed to determine if there is the potential for vapor intrusion of volatile landfill gases into nearby residences/structures. The potential hazards to personnel during this work are dermal contact with potential Site contaminants in soil during completion of test borings to aid in the collection of soil gas samples, a low potential for vapor inhalation of potential Site contaminants, and hearing damage from Geoprobe/drilling equipment. To protect against these potential hazards, personnel completing this work should wear, at a minimum, Level D protection (as defined in Section 8.0). Level D protection should be sufficient to protect against dermal contact with potentially contaminated soils. The protection should also include ear plugs or equal as hearing protection. If VOC vapors are present at the action levels described in Section 5.9, on the basis of VOC vapor monitoring of the area during the work, it may be necessary to upgrade to Level C protection (as defined in Section 8.0) including respiratory protection.

5.5 Monitoring Well Installations

Monitoring wells will be installed to replace select wells around the landfill footprint that will be impacted and abandoned during the landfill closure construction. The potential hazards to personnel during this work are dermal contact with potential Site contaminants in soil and/or groundwater, a low potential for vapor inhalation of potential Site contaminants, and hearing damage from drilling equipment. To protect against these potential hazards, any personnel completing this work should wear, at a minimum, Level D protection (as defined in Section 8.0). Level D protection should be sufficient to protect against dermal contact with potentially contaminated soils and/or groundwater. The protection should also include ear plugs or equal as hearing protection. If VOC vapors are present at the action levels described in Section 5.9, on the basis of VOC vapor monitoring of the area during the work, it may be necessary to upgrade to Level C protection (as defined in Section 8.0) including respiratory protection.

5.6 Monitoring Well Development, and Groundwater Purging and Sampling

Monitoring well development, and groundwater purging and sampling will consist of utilizing a low flow pump and tubing or bailer to extract groundwater from monitoring wells. The potential hazards to personnel during this work are dermal contact and a low potential for vapor inhalation of potential Site contaminants. Level D protection (as defined in Section 8.0) should be sufficient to protect against dermal contact during handling of the groundwater. The protection should also include safety glasses to prevent the hazard of dermal contact to the eyes through incidental spillage or splashing of potentially contaminated groundwater.

5.7 Construction Observation

During the remedial construction including during select landfill waste excavation and consolidation, and re-grading of the landfill waste mass, the potential hazards to the C.T. Male Construction Observer(s) during this work are dermal contact with potentially contaminated soil and/or landfill waste, a low potential for vapor inhalation of potential Site contaminants, and hearing damage from excavation equipment. Level D protection (as defined in Section 8.0) should be sufficient to protect against dermal contact during excavation of and/or handling of the subsurface soils and/or landfill waste. The protection should also include ear plugs or equal as hearing protection. If VOC vapors are present at the action levels described in Section 5.9, on the basis of VOC vapor monitoring of the area during the work, it may be necessary to upgrade to Level C protection (as defined in Section 8.0) including respiratory protection.

5.8 Community Air Monitoring Plan

5.8.1 General

A Community Air Monitoring Plan (CAMP) will be followed during ground intrusive, and soil and/or landfill waste disturbance field activities. The intent of the CAMP is to provide a measure of protection for the downwind community (i.e., off-site receptors and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The CAMP will monitor the air for volatile organic compound vapors (VOC Monitoring, see Section 5.8.2) and

potentially contaminated dust (Particulate Monitoring, see Section 5.8.3) at the downwind perimeter of each designated work area. 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.

In the event of poor weather such as heavy snow or rain, particulate monitoring will not be performed. These weather conditions would limit the effectiveness of the sensitive monitoring equipment. Work activities will be halted if fugitive dust migration is visually observed. Attempts will be made to continue periodic VOC monitoring, but the weather may also prevent this activity.

5.8.2 VOC Monitoring

VOCs will be monitored at the downwind perimeter of the immediate work area on a continuous basis when ground intrusive, and soil and/or landfill waste disturbance field activities are in progress. Upwind concentrations will also be measured at the start of the work day and periodically thereafter to evaluate the Site's background conditions. A MiniRAE 2000 handheld VOC monitor will be used to perform the VOCs monitoring. This unit is capable of displaying the STEL (15 minute averaging period) which will be field checked and recorded for comparison to the NYSDOH Generic Community Air Monitoring Plan action levels for VOCs, as listed below. The VOC readings (STEL) will be recorded for future reference and reporting. Instantaneous readings will be recorded periodically throughout the work day. At the end of each day, the readings for the continuous monitoring instrument will be downloaded to a PC and retained for future reference and reporting.

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

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than

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

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

5.8.3 Particulate Monitoring

During ground intrusive, and soil and/or landfill waste disturbance work activities particulate monitoring will be performed. At a minimum, two real-time particulate monitors capable of continuously measuring concentrations of airborne particulate matter, dust, smoke, mists, haze and fumes less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less), if required by NYSDEC or the NYSDOH will be used. The instruments will be placed at temporary monitoring stations based on the prevailing wind direction each day, one upwind and at a minimum one downwind of the work area. The particulate monitoring instruments will be capable of displaying the short term exposure limit (STEL) or 15 minute averaging period, which will be field checked and recorded for comparison to the NYSDOH Generic Community Air Monitoring Plan action levels for PM-10, as listed below. The particulate readings will be manually monitored, but the instruments are programmed to alarm at preset action levels. Instantaneous readings will be recorded periodically throughout the work day. At the end of each day, the readings for each instrument will be downloaded to a PC and retained for future reference and reporting.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/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 mcg/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 mcg/m^3 of the upwind level and in preventing visible dust migration.

5.9 Respiratory Protection

During the completion of subsurface activities and advancement of test borings, the ambient air in the work area will also be monitored with the MiniRAE 2000 PID prior to the start of work and periodically as conditions warrant. If a concentration (sustained for 5 minutes) of total VOCs is detected within the work area on the instrument, relative to an isobutylene standard, the level of personal protective equipment (PPE) will be upgraded as summarized in Table 1. If a concentration greater than 15 ppm of total VOCs is detected, work will cease immediately and the situation will be evaluated prior to continuation of work.

Table 1
C.T. Male Action Levels and Required Respiratory Protection

Action Level	Level of PPE	Type of Respiratory Protection
0-10 parts per million	Level D	No respiratory protection
10-15 parts per million	Level C	Negative pressure half-face or full face respirator with combination organic vapor/particulate cartridge
15-50 parts per million	Cease Work	Evaluate work procedure
Greater than 100	Cease Work	Evaluate work procedures

-Facial hair is not permitted while wearing most respirators.
-Workers required to wear a respirator must have a minimum of OSHA 40 Hour training with current medical monitoring and fit test documentation.

5.10 Hazard Identification and Control

Table 2 presents generalized hazards potentially involved with the tasks to be completed on this project. Table 2 also identifies general procedures to follow to prevent or reduce accident, injury or illness. Any worker on-site who identifies a potential hazard must report the condition to the HSO or designee, and initiate control of the hazardous condition.

Table 2 Potential Hazards and Control	
Potential Hazard	**Control**
Vehicular Traffic	1. Wear safety vest when vehicular hazards exist. 2. Use cones, flags, barricades, and caution tape to define work area. 3. Use vehicle to block work area. Contact police for high traffic situations.
Slip, Trip, and Fall Protection	1. Assess work area to determine if there is a potential for falling. 2. Make sure work area is neat and tools are staged in one general area. 3. Wear steel-toe boots with adequate tread and always watch where the individual is walking.
Inclement Weather	1. Stop outdoor work during electrical storms and other extreme weather conditions such as extreme heat or cold temperatures. 2. Take cover indoors or in vehicle. 3. Listen to local forecasts for warnings about specific weather hazards such as tornadoes, hurricanes, and flash floods.
Utility Lines Contact	1. Contact UFPO to have utility lines marked prior to any underground excavation, trenching or drilling. UFPO must be contacted at least 48 hours prior to work. 2. Refer to site drawings for utility locations. 3. Manually dig 3 to 5 feet below grade and 5 feet on each side of utility marked to avoid breaking utility lines.
Noise	1. Wear hearing protection when equipment such as a drill rig, jackhammer, or other heavy equipment is operating on-site. 2. Wear hearing protection whenever you need to raise your voice above normal conversational speech due to a loud noise source; this much noise indicates the need for protection. 3. Hearing protection is required when measured sound exceeds 85 decibels (dB) where employees stand or conduct work.
Electrical Shock	1. Maintain appropriate distance from overhead utilities; 20 foot minimum clearance from power lines; and 10 foot minimum clearance from shielded power lines. 2. Contact local underground utility locating service.

Table 2 Potential Hazards and Control	
Physical Injury	1. Wear hard hats and safety glasses at all times when on-site. 2. Maintain visual contact with equipment operators and wear orange safety vest when heavy equipment is operating on-site. 3. Avoid loose clothing when working around rotary equipment. 4. Keep hands and feet away from drilling augers. 5. Test emergency shut-off switches on drill rig regularly.
Back Injury	1. Use a mechanical lifting device or a lifting aid where appropriate. 2. Make sure the route is free of obstructions. 3. Bend at the knees and use leg muscles when lifting. 4. Use the buddy system if lifting heavy or awkward objects. 5. Do not twist or jerk your body when lifting.
Heat Stress	1. Increase water intake while working. 2. Avoid excessive alcohol intake the night before working in heat stress situations. 3. Increase number of rest breaks, as necessary and rest in a shaded area. 4. Watch for signs and symptoms of heat exhaustion and fatigue. 5. Rest in cool, dry areas. 6. In the event of heat stress or heat stroke, bring the victim to a cool environment and call 911.
Fire Control	1. Smoke only in designated areas. 2. Keep flammable liquids in closed containers. 3. Isolate flammable and combustible materials from ignition sources. 4. Keep fire extinguisher nearby and use only if deemed safe.
Direct-Push and Drilling Operations	1. Operator and helper must be present during all active operations. 2. Emergency shut off switches must be known by the site personnel. 3. Wear clothing, jewelry or PPE that is not potentially going to get caught in moving parts. 4. No unauthorized personnel in the work area of the direct-push unit or drill rig. 5. Cease operations if hazardous conditions arise. 6. Direct-push or drill rig work areas must be clearly marked with caution tape.

Table 2 Potential Hazards and Control	
	7. Drillers are not to climb the tower while it is erected. 8. Shut down direct-push unit or drill rig to make repairs or adjustments. 9. For start-up, all controls are to be disengaged and the rope to be untied from the cathead (for drill rig). 10. Do not drive drill rig off of the hole until the tower has been lowered. 11. Use a long handled shovel to move auger cuttings away from the auger.
Off-Road Movement of Direct-Push Unit and Drill Rig	1. Inspect the route of travel, inspecting for depressions, stumps, gullies, ruts, and similar obstacles. 2. Use caution when traveling on hilly terrain. 3. Cross obstacles such as logs, swales, and ditches perpendicularly. 4. Use a spotter when lateral or overhead clearance is limited. 5. When grades are steep, use blocking beneath the wheels.
Soil Gas Sampling Point Installation, Well installations, Well Development, Groundwater Sampling, and Construction Observation.	1. Wear appropriate PPE to avoid skin, eye, and inhalation contact with potentially contaminated soil and/or groundwater. 2. Stand upwind to minimize possible inhalation exposure, especially when opening monitoring wells. 3. Conduct air monitoring, whenever necessary to determine level of respiratory protection. 4. If necessary, employ engineering controls to assist in controlling chemical vapors.
Cleaning Equipment	1. Wear appropriate PPE to avoid skin and eye contact with detergents (i.e., alconox) or other cleaning materials. 2. Stand upwind to minimize possible inhalation exposure. 3. Proper disposal of cleaning solutions and rinse accordingly.
Note: A first aid kit and fire extinguisher will be located in the C.T. Male company vehicle.	

6.0 TRAINING

Site specific training of workers and personnel will be conducted and provided by the HSO or designee prior to any on-site activity. The training will specifically address the activities, procedures, monitoring and equipment for the site operations. It will include area and facility layout, hazards, emergency services (police, hospital, fire, etc.), and review of this HASP. Questions by workers, field personnel, etc. will be addressed at this time.

Workers and personnel conducting and/or supervising the project must have attended and successfully completed a 40 Hour Health and Safety Training Course for Hazardous Waste Operations and an annual 8 Hour Refresher Course. Workers performing the wetlands delineation must have attended and successfully completed a 24 Hour Health and Safety Training Course for Hazardous Waste Operations and an annual 8 Hour Refresher Course. In addition, the workers and personnel must take part in an employer medical surveillance program in accordance with OSHA 1910.120 and OSHA 1910.134 (respirator protection) requirements. Specifically, that the workers have had a medical physical within two years prior to the date the work begins and that they are physically able to wear a respirator.

Documentation of training and medical surveillance will be submitted to the HSO or designee prior to the start of any on-site work. A copy of the training certificates shall be inserted into the Appendix A pocket of this HASP. A copy of the Medical Data Sheets shall be inserted into the Appendix B pocket of this HASP.

7.0 SITE ACCESS

Restricted access to the work area is not anticipated to be necessary during the wetlands delineation, the topographic and planimetric field survey, or the groundwater purging and sampling of existing monitoring wells. During completion of the test borings for the soil gas sampling and monitoring well installations, an Exclusion Zone, Contamination Reduction Zone and Support Zone will be utilized, as necessary.

Only OSHA trained individuals which are qualified to do the work and have read and signed this Site Specific HASP will be allowed within the work area. The work area may be secured with barricades, signs, cones, flagging or other similar method to prevent unauthorized entry. Otherwise, the HSO or designee will be responsible for limiting access to unauthorized individuals.

During completion of the on-site activities, the immediate work area will be considered the Exclusion Zone (contaminated area where investigation work is to be conducted). The Contamination Reduction Zone (decontamination area) and Support Zone (clean area, everywhere else) will be established outside the Exclusion Zone. The exclusion, contamination reduction, and support zone during investigation/remediation work have been identified and designated as follows:

Exclusion Zone - The location of the exclusion zone will be determined in the field prior to the start of work and will vary in size shape and location depending on the area(s) the work is being conducted. The exclusion zones may be delineated with stakes and yellow caution tape or other similar method. Only authorized persons with proper training and protective gear will be allowed to enter the exclusion zone.

Contamination Reduction Zone - This zone will generally be a 10'± x 10'± area, containing a temporary decontamination pad, as applicable, and adequately marked. The location will be determined in the field prior to the start of work and will vary depending on the area(s) the work is being conducted. This zone is where decontamination of personnel and equipment will take place, as necessary, on the basis of the work being performed. It will be located upwind of the Exclusion Zone, if possible.

Support Zone - Area outside of contamination reduction zone and not including the exclusion zone. Unauthorized or untrained individuals must remain in this zone.

8.0 PERSONAL PROTECTION

8.1 Level of Protection

Based on evaluation of the potential hazards, the minimum level of protection to be worn by workers during implementation of the on-site activities is defined as Level D protection, and will be controlled by the HSO or designee.

The minimum level D protective equipment will consist of field clothes, steel toe safety/work boots, safety glasses, hard hat, disposable chemical resistant gloves, and disposable over-boots (optional). As appropriate, this level of protection may be modified to include ear plugs or equal hearing protection, coveralls, leg chaps, Tyvek suits, or face shield for additional protection. Full-face and half-face air purifying respirators should be readily available. The appropriate respirator cartridges that will be available at the Site, to use if necessary with the air purifying respirators are a combination organic vapor and particulate cartridge filters.

If required, level C protective equipment will consist of the items listed for Level D protection with the added protection of a half face or full-face, air purifying (organic vapor and particulate) respirator, chemical resistant Tyvek suits, inner and outer chemically resistant gloves (i.e., solvent resistant nitrile, PVC/nitrile), and chemical resistant disposable boot coverings. When Site conditions warrant the need for level C protective equipment, work will cease and the project will be re-evaluated to determine the necessity for employing engineering controls to reduce or eliminate the potential contaminants of concern. Level C protective equipment is not expected to be necessary based on our knowledge of the Site conditions.

If required, level B protective equipment will consist of the items listed for Level D protection except a self-contained breathing apparatus (SCBA) will be worn which is dependent on the level of contaminants present in the work zone and polylaminated Tyvek suits will be required. When Site conditions warrant the need for level B protective equipment, work will cease and the project will be re-evaluated to determine the necessity for employing engineering controls to reduce or eliminate the potential contaminants of concern. Level B protective equipment is not expected to be necessary based on our knowledge of the Site conditions.

8.2 Safety Equipment

Basic emergency and first aid equipment will be available at an area within the Support Zone clearly marked and available and/or within C.T. Male's company vehicle. This shall include a first aid kit, fire extinguisher, supply of potable water, soap, towels and first aid handbook. The HSO or designee shall be equipped with a cellular phone in case of emergencies.

9.0 COMMUNICATIONS

The HSO or designee shall be equipped with a cellular phone in case of emergencies. If the cellular phone is inoperable, a phone at the Town of Queensbury transfer station (when open) will be utilized.

The HSO or designee shall notify the C.T. Male project manager as soon as safely possible in the event of an accident, injury or emergency action. During vehicle loading activities, hand signals will be utilized, as necessary.

10.0 DECONTAMINATION PROCEDURES

10.1 Personnel Decontamination Procedures

Decontamination procedures will be carried out by all personnel leaving the Exclusion Zone (except under emergency evacuation). The amount of decontamination performed will be dependent on the level of personal protection currently being worn within the exclusion zone and known level of contaminants present.

1. Do not remove respiratory protection, if worn, until all of steps have been completed.

2. Clean outer protective gloves and outer boots, if worn, with water and scrub brush over designated wash tubs in the exclusion zone to remove the gross amount of contamination.

3. Deposit equipment used (tools, sampling devices, and containers) at designated drop stations on plastic drop sheets or in plastic lined containers.

4. Rinse outer boots if worn and gloves with clean water in designated rinse tubs. Remove outer boots if worn and gloves and deposit in designated area to be determined in the field for use the next day or when necessary. If disposable outer boots are worn, remove and discard in designated container.

5. Remove hard hat and safety glasses, rinse with clean water as necessary, and deposit in designated area for use the next day or when necessary.

6. Remove Tyvek suit, if worn, and discard in designated container. Remove respirator at this time, if used; wash and rinse with clean water. Organic vapor cartridges, when used, will be replaced daily. Used cartridges will be discarded in the designated waste container. Remove inner gloves and discard in designated container.

10.2 Equipment and Sample Containers Decontamination

All decontamination will be completed by personnel in protective gear appropriate for the level of protection determined by the site HSO or designee.

Manual soil gas sampling equipment which comes into contact with the Site's soils will be cleaned with a non-phosphate detergent/tap water wash, a tap water rinse and a deionized or distilled water rinse prior to sampling, in between each sample location and at completion of sampling. The decontamination fluids will be allowed to infiltrate back into the landfill.

Direct-push soil gas sampling equipment (tools, rods, macro-core sampler, etc.) will be cleaned with a high temperature/high pressure washer or with a non-phosphate detergent/tap water wash and a tap water rinse prior to the start of work, after each soil gas test bore hole installation, and at the completion of the soil gas sampling. The decontamination fluids will be allowed to infiltrate back into the landfill.

During monitoring well installations, the drill rig equipment (tools, rods, split-spoon sampler, etc.) will be cleaned with a high-temperature/high-pressure washer prior to the start of drilling, after each test boring/monitoring well installation, and at the completion of the monitoring well installations. Soil sampling equipment (i.e., split-spoon sampler) will also be cleaned with a high-temperature/high-pressure washer or with a non-phosphate detergent/tap water wash and tap water rinse prior to sampling, in between each soil sampling interval and at completion of sampling activities. The decontamination fluids will be allowed to infiltrate back into the landfill.

New disposal polyethylene bailers and/or new disposable polyethylene tubing attached to a peristaltic pump will be utilized to collect the groundwater samples from monitoring wells.

Exterior surfaces of sample containers and/or Summa canisters will be wiped clean with paper towels or disposable wipes in the decontamination zone. The sample containers will be transferred to a clean cooler for transportation or shipment to the analytical laboratory. The Summa canisters will be returned to the boxes that they were shipped in and sent to the analytical laboratory. Sample identities will be noted and checked off against the chain-of-custody record.

The disposable sampling equipment, personnel protective equipment and disposable wipes will be placed in a designated labeled disposal container for subsequent disposal based on the media sampling laboratory analyses results.

11.0 EMERGENCY RESPONSE PROCEDURES

THE PROJECT EMERGENCY COORDINATOR IS:

Site Health and Safety Officer (HSO) Jeffrey Marx, PE

The following standard emergency procedures will be used by on-site personnel. The Project Manager and HSO shall be notified of any on-site emergencies and be responsible for assuring that the appropriate procedures are followed.

11.1 Personal Injury

Emergency first aid shall be administered on-site as deemed necessary and only by a trained individual, if available at the Site. If a trained individual is not available on-site, decontaminate, if feasible, and transport individual to nearest medical facility (Glens Falls Hospital). The HSO will supply medical data sheets to appropriate medical personnel and be responsible for completing the incident report. If the HSO is injured or controlling the emergency situation, the medical data sheets are available in Appendix B of this HASP. Directions to and the location of the Glens Falls Hospital are presented as Figure 1.

11.2 Personal Exposure

The recommended response to worker exposure from contaminants on-site includes the following:

SKIN CONTACT: Use generous amounts of soap and water. Wash/rinse affected area thoroughly, then provide appropriate medical attention, as necessary.

EYE CONTACT: Wash eyes thoroughly with potable water supply. Eyes should be rinsed for at least 15 minutes subsequent to chemical contamination. Provide medical attention, as necessary.

INHALATION: Move worker to fresh air and outside of the work zone and/or, if necessary, decontaminate and transport to the closest hospital (Glens Falls Hospital). If respirator use is implemented at the

time of inhalation, worker must not remove respirator until completely away from the work zone.

INGESTION: Decontaminate, if feasible, and transport to the closest hospital (Glens Falls Hospital).

PUNCTURE WOUND OR LACERATION: Provide first aid at the site and if wound needs medical attention, decontaminate, if feasible, and transport to the closest hospital (Glens Falls Hospital).

If the affected worker is exposed to contaminants on-site and the injury or accident prevents decontamination of the individual, the emergency responders must be notified of this condition and the exposure must be kept to a minimum.

11.3 Potential or Actual Fire or Explosion

Immediately evacuate area in the event of potential or actual fire or explosion. Notify the local fire and police department and other appropriate emergency response groups, as listed in Section 1.2. Perform off-site decontamination and contain wastes for proper disposal. If a fire or explosion occurs, all on-site personnel must meet in the designated area of the Site (established by the HSO or designee) for an accurate head count.

11.4 Equipment Failure

Should there be any equipment failure, breakdown, etc. the Project Manager and HSO shall be contacted immediately. The Project Manager or the HSO will make every effort to replace or repair the equipment in a timely manner.

11.5 Spill Response

The site HSO or designee shall implement a corrective action program, with the subcontractor, as applicable, in the event of an accidental release of a non-hazardous petroleum product, hazardous material or suspected hazardous material. The HSO or designee will act as the Emergency Coordinator for the purposes of spill

prevention, identifying releases, implementing clean up measures and notification of appropriate personnel.

The corrective action program will be implemented by the HSO and subcontractor, as applicable, to effective control and minimize any impact the accidental release may have to the environment.

Effective control measures will include:

- Preliminary assessment of the release,
- Control of the release source,
- Containment of the released material, and
- Effective cleanup of the released material.

Potential sources of accidental releases primarily include: hydraulic oil spills or petroleum leaks from direct-push, drilling and excavation equipment. The HSO/Emergency Coordinator shall respond to an accidental release in the following manner:

- Identify the character, source, amount and area affected by the release.
- Take all reasonable steps to control the release.
- Notify the NYSDEC Spill Hotline at 1-800-457-7362. Notify NYSDEC Central Office Project Manager and City of Glens Falls contacts, as listed in Section 1.2.
- Contain the release with sorbent material which may include speedi-dry, spill socks and sorbent pads.
- Prevent the release from entering sensitive receptors (i.e., catch basins and surface water) using the specified sorbent material or sandbags.
- Coordinate cleanup of the release material.
- Oversee proper handling and storage of contaminated material for disposal.

At no time should personal health or safety be compromised or jeopardized in an attempt to control a release. All health and safety measures as outlined in this HASP should be adhered to.

12.0 ADDITIONAL WORK PRACTICES

Workers will be expected to adhere to the established safety practices. Work on the project will be conducted according to established protocol and guidelines for the safety and health of all involved. The following will be adhered to:

- Employ the buddy system when possible, and for those work tasks which require it. Establish and maintain communications.
- Minimize contact with potentially contaminated soil and/or groundwater.
- Employ disposable items when possible to minimize risks during decontamination and possible cross-contamination during sample handling.
- Smoking, eating, or drinking after entering the work zone and before decontamination will not be allowed (to prevent oral ingestion of potential on-site contaminants).
- Avoid heat and other work stress related to wearing personal protective equipment. Take breaks as necessary and drink plenty of fluids to prevent dehydration.
- Withdrawal from a suspected or actual hazardous situation to reassess procedures is the preferred course of action.
- The removal of facial hair (except mustaches) prior to working on-site will be required to allow for a proper respiratory face piece fit.
- The Project Manager, the HSO, and sampling personnel shall maintain records recording daily activities, meetings, facts, incidents, data, etc. relating to the project. These records will remain at the project site during the full duration of the project so that replacement personnel may add information while maintaining continuity. These daily records will become part of the permanent project file.

13.0 AUTHORIZATIONS

Personnel authorized to enter the exclusion zone at the Glens Falls Municipal Landfill At Luzerne Road Site located in the Town of Queensbury, Warren County, New York while operations are being conducted must be certified by the HSO. Authorization will involve completion of appropriate training courses and review and sign off of this HASP.

Personnel authorized to perform work on-site are as follows:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____

14.0 MEDICAL DATA SHEET

This medical data sheet will be completed by all on-site personnel and will be kept on-site during the duration of the project. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

PROJECT: Remedial Design and Construction Management to be conducted at the Glens Falls Municipal Landfill At Luzerne Road Site located in the Town of Queensbury, Warren County, New York

Name _____ Home Telephone _____

Address _____

Emergency Contact (i.e., spouse) _____

Drug or Other Allergies _____

Particular Sensitivities _____

Do You Wear Contact Lenses _____

Provide a Checklist of Previous Illness or Exposure to Hazardous Chemicals

_____

What Medications Are You Presently Using _____

_____

Do You Have Any Physical or Medical Restrictions _____

_____

_____

Name, Address, and Telephone Number of Personal Physician:

_____

_____

_____

15.0 FIELD TEAM REVIEW

Each field team member shall sign this section after site specific training is completed and before being permitted to work on-site.

I have read and understood this Site Specific Health and Safety Plan, and I will comply with the provisions contained therein.

PROJECT: Remedial Design and Construction Management
Glens Falls Municipal Landfill At Luzerne Road
Town of Queensbury, Warren County, New York

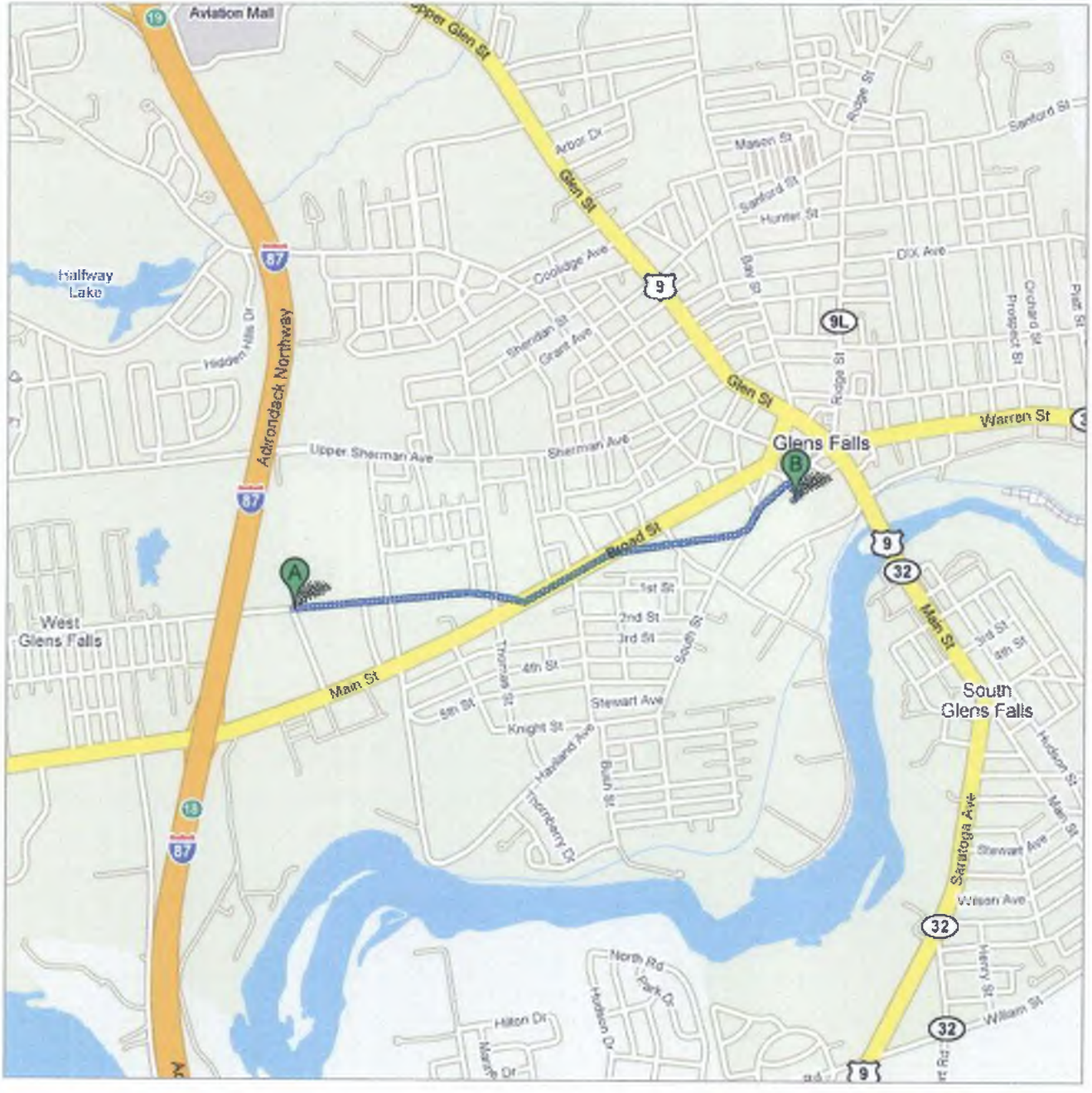
Name: Printed	Signature	Date

FIGURE 1

MAP AND DIRECTIONS SHOWING ROUTE TO GLENS FALLS HOSPITAL

Google Maps

Directions to 100 Park St, Glens Falls, NY 12801
1.6 mi – about **5 mins**



Google Maps

Directions to 100 Park St, Glens Falls, NY 12801

1.6 mi – about **5 mins**

Luzerne Rd & Pine St
NY 12804

1.	Head **east** on **Luzerne Rd** toward **Newcomb St** About 2 mins	go 0.7 mi total 0.7 mi
2.	Slight **left** at **Broad St** About 1 min	go 0.3 mi total 0.9 mi
3.	Slight **right** at **Hudson Ave** About 2 mins	go 0.6 mi total 1.5 mi
4.	Turn **right** at **School St**	go 256 ft total 1.5 mi
5.	Turn **right** at **Park St**	go 85 ft total 1.6 mi

Glens Falls Hospital
100 Park St
Glens Falls, NY 12801

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Luzerne Rd & Pine St
NY 12804

1. Head **east** on **Luzerne Rd** toward **Newcomb St**
About 2 mins

go 0.7 mi
total 0.7 mi

2. Slight **left** at **Broad St**
About 1 min

go 0.3 mi
total 0.9 mi

3. Slight **right** at **Hudson Ave**
About 2 mins

go 0.6 mi
total 1.5 mi

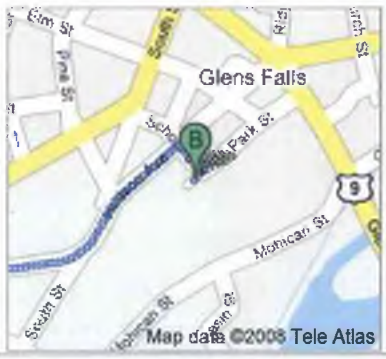
4. Turn **right** at **School St**

go 256 ft
total 1.5 mi

5. Turn **right** at **Park St**

go 85 ft
total 1.6 mi

Glens Falls Hospital
100 Park St
Glens Falls, NY 12801



These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

DIRECTIONS TO GLENS FALLS HOSPITAL

Turn left onto Luzerne Road and follow blue hospital signs. As you pass the Hannaford grocery plaza on your left, at the second light, approximately ½ mile from the landfill -- bear right at Y-intersection of Broad Street and Hudson Avenue (you will be turning onto Hudson Avenue -- there is a Stewart's Ice Cream Shop at this Y-intersection). Stay on Hudson Avenue for approximately ½ mile. As you pass the Glens Falls Post Office on your right, you will see the Hospital straight ahead. Take a right at the Main Entrance to the Hospital and park in the Visitors/Outpatient Parking Area on your right.

MAP REFERENCE
Street Atlas, USA
©1997 DeLorme

N W E S

ENGINEERING
ENVIRONMENTAL SERVICES
SURVEYING
PHONE (518)786-7400
FAX (518) 786-7299

C.T.MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, PO BOX 727, LATHAM, NY 12110

FIGURE 1 - HOSPITAL ROUTE MAP

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
GLENS FALLS MUNICIPAL LANDFILL

TOWN OF QUEENSBURY	WARREN COUNTY, NY
SCALE: NTS	
DRAFTER:	
PROJECT No. 00.6801	

APPENDIX A

TRAINING CERTIFICATES

APPENDIX B

MEDICAL DATA SHEETS

APPENDIX E

Post Landfill Closure Operation and Maintenance Manual for Stormwater Management System, and Maintenance Inspection Form Stormwater Management System

December 1, 2008
Revised June 10, 2009

Post Landfill Closure Operation and Maintenance Manual for Stormwater Management System (O & M Manual) Glens Falls Municipal Landfill At Luzerne Road Town of Queensbury Warren County, New York NYSDEC Site No. 5-57-003

Prepared for:

CITY OF GLENS FALLS
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42 Ridge Street
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Prepared by:

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FAX (518) 786-7299

C.T. Male Project No: 05.5824
Related Drawing No: 07-0653

**POST LANDFILL CLOSURE OPERATION AND MAINTENANCE MANUAL
FOR STORMWATER MANAGEMENT SYSTEM
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD
TOWN OF QUEENSBURY, WARREN COUNTY, NEW YORK**

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

This Operation and Maintenance Manual (O&M Manual) describes operation and maintenance procedures that should be employed to maximize the useful life and design intent of the stormwater management system and designated areas within the Glens Falls Municipal Landfill At Luzerne Road (Glens Falls Landfill) located in the Town of Queensbury, Warren County, New York. The City of Glens Falls will be responsible for maintenance of these facilities once construction is completed.

2.0 STORMWATER MANAGEMENT SYSTEM

This section identifies the parts or components of the stormwater management system that need to be maintained on a regular basis to ensure proper functioning of each stormwater management practice, including non-structural practices.

The stormwater management system for the Glens Falls Landfill consists of a drainage swale and underdrain below the drainage swale around the perimeter of the landfill, three stormwater management basins (two retention basins, and one detention basin with spillway and outlet structure) located adjacent to the toe of the landfill slope, and four catch basins and five culvert pipes to convey the stormwater from the perimeter drainage swale and underdrain below the swale to the basins. The stormwater management system has been designed to maintain existing drainage patterns as much as possible, to continue the conveyance of upland watershed runoff, to reduce the runoff from the capped landfill onto adjacent properties to existing rates or less, and to control increases in stormwater runoff resulting from the project.

The purpose of the perimeter drainage swale and underdrain below the drainage swale is to promote drainage of the drainage and barrier protection layers and topsoil layer and minimize ponding, to provide an outlet for the landfill surface water runoff and divert it to stormwater management basins, to minimize the landfill surface water runoff and other stormwater run-on from infiltrating the area around the perimeter of the landfill, to mitigate potential stormwater quality impacts, and to prevent soil erosion and sedimentation resulting from stormwater runoff. The purpose of the stormwater management basins, including two retention basins and one detention basin, is to accept surface water runoff (no leachate, just stormwater from precipitation

events) from the closed landfill via the drainage swale and culvert pipes and allow it to infiltrate into the ground or be discharged, as applicable, in a controlled manner.

The perimeter drainage swale will be approximately 3.5 feet wide by 2-foot deep with 3H:1V side slopes. The perimeter underdrain below the drainage swale will be constructed of No. 2 crushed stone surrounded by a non-woven geotextile drainage fabric with a 6-inch diameter perforated HDPE drain pipe at the bottom of the underdrain. The perimeter underdrain pipe and drainage swale will discharge into concrete catch basins at four locations, which will discharge the flow into the stormwater management basins via 18-inch diameter culvert pipes. An additional 12-inch diameter culvert pipe is planned at the low point on the west side of the landfill, where a catch basin was not feasible, to convey flow from the low point of the drainage swale to the stormwater basin. The catch basins are necessary to convey the flow from the perimeter underdrain pipe to the culvert pipes, which discharge to the stormwater basins.

The proposed stormwater management system is designed to intercept the runoff from the landfill mound and direct it to one of three stormwater management basins. Two of these basins (off of the southwest area of the landfill, Pond P2.1, and east of the central portion of the landfill, Pond P8.1) will be retention basins and one of them will be a detention basin (off of northeast corner of the landfill, Pond P5.1). Each retention basin has 3H:1V side slopes, and P2.1 and P8.1 are 3 feet and 6 feet deep, respectively. The detention basin (P5.1) has 3H:1V side slopes and is 5 feet deep. The retention basins are designed to hold the runoff and let it infiltrate back into the ground over time resulting in no surface discharge. The detention basin is designed to temporarily store the runoff and release it as a surface flow over time at a controlled rate. The detention basin will include a spillway and outlet structure that will be designed to control the peak rate of flow to be less than or equal to the rate under the existing conditions simulation.

The surface of the landfill will be covered with 6 inches of topsoil, and fertilized and seeded/hydroseeded to establish a vegetative cover. To control erosion and sedimentation until the vegetative cover can be established, double net straw erosion control blankets will be placed over the surface of the landfill cover system/cap after the area has been seeded/hydroseeded. The perimeter drainage swale and stormwater basins will be covered with 4 inches of topsoil, fertilized and seeded/hydroseeded to

establish a vegetative cover. To control erosion and sedimentation until a vegetative cover can be established, double net straw erosion control blankets will be placed over the surface of the drainage swale after it is seeded/hydroseeded, and silt fence will be placed at the base of the stormwater basins. Where there is concentrated flow and steeper gradients in the drainage swale including along the western and northeastern sides of the landfill, it is planned to install turf reinforcement mat after seeding/hydroseeding, instead of the erosion control blankets, to provide long term erosion control. At the outlets of the culvert pipes that convey the flow from the drainage swale into the stormwater basins, it is planned to use NYSDOT medium stone filling underlain by a non-woven geotextile filter fabric to control erosion.

3.0 MAINTENANCE AND INSPECTION SCHEDULE

3.1 General

Stormwater management systems need to undergo regular inspection and maintenance in order to function properly and at design capacity. Maintenance needs may include: removal of silt, litter and other debris from drainage swales and stormwater management basins; mowing of the grass/vegetative cover; re-seeding of areas that do not have a good vegetative cover.

A Maintenance Inspection Form should be completed to document inspection and maintenance performed at the Glens Falls Landfill (refer to Appendix A1). This form provides a summary of the inspection requirements for each stormwater facility component, a frequency of inspection and a description of the anticipated routine maintenance that is required. A new form should be filled out during each inspection. Observations made during the inspection should be written in the "Inspection Comments" field. If it is determined that maintenance is required, a description of the maintenance conducted and the date of the maintenance should be written in the "Maintenance Comments" field. Copies of completed Maintenance Inspection Forms should be maintained in Appendix A1 of this document.

The following sections outline the procedures and schedule to be followed to perform routine inspection and maintenance activities. In general, the frequency of inspection of each stormwater facility component should be at least twice a year (spring and fall) and after a major storm event, unless otherwise noted. Major storm events are considered

to be those that result in more than 2.3 inches of rain falling within a single 24-hour period (a 1-year storm event).

3.2 Catch Basins

Catch basins are structures at the entrance of storm sewer pipes that are designed to "catch" sediments and other floatables from inflowing stormwater. There are catch basins located on the Glens Falls Landfill site, generally within the perimeter drainage swales.

At least twice a year and after a major storm event, catch basins should be visually inspected to determine the presence/depth of accumulated sediment and the presence of trash. If trash is observed, it should be removed and properly disposed of off-site. Any accumulated sediment should be removed to that flow from the perimeter underdrain pipe is not impeded. A measuring stick should be used to determine the depth of sediment.

Catch basins should be cleaned using a vacuum truck or an equivalent means. The contents removed by the vacuum truck should be transported off-site to an approved or otherwise authorized solid waste disposal facility. If contents are removed by a contractor, they should provide documentation of the location used for disposal. Sediments or sediment-laden water should not be disposed of on-site. The catch basins should be cleaned in the spring, to remove debris from the winter, and in the fall prior to the start of the winter season to remove leaves and other debris.

3.3 End Sections

End sections are found at the end of pipes, and they typically include rock protection such as stone fill aprons. The purpose of stone fill aprons placed at the end of pipes is to reduce the velocity, depth and energy of water, such that the flow will not erode downstream areas. End sections are found at the inlets to the stormwater management basins on the Glens Falls Landfill site.

The end section of pipes, including stone fill aprons, should be visually inspected for trash and sediment at least twice a year and after major storm events. If trash is observed, it should be removed and disposed of properly. If excessive sediment deposition is observed on the stone fill apron, measures should be taken to remove the

sediment. Excessive sedimentation occurs when the stones on the bottom of the apron are no longer visible due to sediment deposition. It is recommended that accumulated sediments be removed with a hand shovel and disposed of off-site at an approved or otherwise authorized solid waste disposal facility.

3.4 Drainage Culverts

Drainage culverts are pipes that convey stormwater flows from one location to another. On the Glens Falls Landfill site, drainage culverts convey flows from the swale(s) at the toe/perimeter of the landfill to on-site stormwater management basins.

Drainage culvert pipes should be inspected at least twice a year and after major storm events to determine if any debris, obstructions or floatables are present. If the flow in the culverts appears confined (i.e., catch basins are full of water or slow draining, or the flow from the end section is low), then a constriction may be present. If a constriction is probable or if debris or obstructions are present, they should be removed by flushing the pipes with water using a high-powered hose.

3.5 Debris Removal

All debris should be removed from the drainage swales and stormwater management basins. Debris should be removed monthly and after major storm events. Debris in the drainage swales can obstruct the flow of surface water runoff. Debris in the basins can clog the outlet control structure and hinder emergency spillway performance (detention basin). All debris shall be disposed of off-site at an approved or otherwise authorized solid waste disposal facility.

3.6 Sediment Monitoring and Removal From Basins

As described in Section 2.0, there are three stormwater management basins located on the Glens Falls Landfill site, two retention basins and one detention basin. These basins should be visually inspected at least twice a year and after major storm events.

Accumulated sediments must be removed from the basins following stabilization of areas disturbed during construction activities that may have contributed sediment to the basins. Following stabilization, accumulated sediments must be removed from the retention basins on a regular basis so that infiltration is not impeded, and from the detention basin when sediment impedes the functioning of the low level outlet. Failure

to remove the accumulated sediments will result in excess sediment loading which will reduce the effectiveness of the basins. Accumulated sediments should be removed from the basins by the use of excavators, backhoes or loaders and placed in a dump truck and hauled off-site for disposal to an approved or otherwise authorized solid waste disposal facility. If removal of sediment causes damage to vegetated areas within the basins, disturbed areas should be seeded/hydroseeded and mulched (refer to Appendix B1).

3.7 Basin Slopes

The slopes of the stormwater management basins should be visually inspected to determine the percent of vegetative cover. At least 80% vegetative cover is needed to ensure the slopes are stabilized to prevent erosion and excess sedimentation build-up in the basins. If less than 80% vegetative cover is observed on basin slopes in certain areas, these areas should be re-graded, seeded/hydroseeded and mulched, as needed. Recommended seeding and mulching rates are provided in Appendix B1.

If any woody vegetation (i.e., small trees or shrubs) are observed during the inspections, they should be removed by mowing or cutting. It is recommended the basin slopes be mowed at least twice a year to prevent woody vegetation from becoming established.

The basin slopes should also be inspected for erosion, animal damage and undercutting of the banks of the slope. If rills or gullies greater than 4-inches in depth and 6-inches in width are observed, they should be repaired by re-grading the area and applying seed and mulch. If the basin slopes appear to be undercutting or slumping, the slopes should be re-graded to design specifications and seeded and mulched. Recommended seeding and mulching rates are provided in Appendix B1.

Animal damage, including burrowing, should be repaired and filled as necessary. If persistent animal damage is noted, it is recommended that a licensed pest control company be contacted to remove the nuisance animal.

3.8 Basin Outlet Structures

The basin off of the northeast corner of the landfill (Pond P5.1) is a detention basin which utilizes an outlet structure. The detention basin outlet components consist of a principal spillway (culvert), a riser, a low flow orifice and an emergency spillway. In

order to ensure the ongoing discharge of water from the basin, the components of the basin outlet structure must be maintained in proper working order. The following provides a summary of each component, including the inspection and maintenance requirements.

3.8.1 Principal Spillway and Outlet Control Structure

A principal spillway is the primary pipe that carries flow through the embankment and out of the stormwater management basin. An outlet control structure is a manhole or catch basin that houses the control devices (i.e., orifices) to achieve the desired discharge rates. A precast concrete structure serves as the outlet structure at the Glens Falls Landfill.

The principal spillway and outlet control structure should be visually inspected for debris and floatables at least twice a year and after major storm events. Debris and floatables should be removed as needed and properly disposed of off-site at an approved or otherwise authorized solid waste disposal facility.

Visual inspection of the condition of concrete, masonry and crack sealing of the principal spillway and outlet control structure should be conducted on an annual basis. If concrete, masonry or crack sealing are observed to be in poor condition, repairs should be made as needed. Poor condition may include cracks, chips, holes, water damage or other noticeable structural deficiencies.

3.8.2 Low Flow Orifice

A low flow orifice is located in a cap with a drilled hole smaller than the diameter of the outlet pipe that the cap is placed on. The purpose of a low flow orifice is to release stormwater flows at a controlled rate. The orifice opening for this project is 4 inches in diameter.

The low flow orifice should be visually inspected for obstructions at least twice a year and after a major storm event. If obstructions or debris is observed, it should be removed and properly disposed of off-site at an approved or otherwise authorized solid waste disposal facility.

3.8.3 Emergency Spillway

An emergency spillway is used to convey excess water from the detention basin in the event that discharge flows exceed the principal spillway design discharge or in the event of blockage of the principal spillway. The emergency spillway is the lowest point on the embankment of the basin. Frozen ground conditions and excessively high rainfall (above the design criterion) may cause some overtopping of the basin.

The emergency spillway should be inspected at least twice a year and after major storm events for obstructions, debris and floatables. If obstructions are observed, they should be removed as needed and properly disposed of off-site at an approved or otherwise authorized solid waste disposal facility.

4.0 CONTACT INFORMATION

Questions about the stormwater management system should be directed to C.T. Male Associates, P.C. The contact persons are James Houston, PE and Liz Rovers, PE. The main office phone number is 518.786.7400.

APPENDIX A1 - O&M MANUAL

Maintenance Inspection Form

MAINTENANCE INSPECTION FORM

Stormwater Management System

Glens Falls Municipal Landfill at Luzerne Road

Stormwater Facility Component	Inspection Requirement	Frequency of Inspection	O&M Manual Section No.	Inspection Comments	Maintenance Required	Maintenance Needed? (Y/N)	Maintenance Comments / Date of Maintenance
Catch Basins	Stick Measure for Sediment Depth	*Bi-Annual and After Major Storm Events	3.2		Remove Any Sediment That Accumulates Within the Bottom of the Catch Basin		
	Visual Inspection for Trash	*Bi-Annual and After Major Storm Events	3.2		Remove Trash as Needed		
End Sections	Visual Inspection of Stone Aprons for Trash and Sediment	*Bi-Annual and After Major Storm Events	3.3		Remove Trash and Sediment as Needed		
Storm Sewers/Drainage Culverts	Visual Inspection for Obstructions, Debris and Floatables	*Bi-Annual and After Major Storm Events	3.4		Flush Storm Culvert Pipes as Needed		
Debris Removal	Visual Inspection for Debris in Basins	*Monthly and After Major Storm Events	3.5		Remove Debris as Needed		
Sediment Monitoring and Removal	Detention Basin: Note Percent of Sediment Built-Up	*Bi-Annual and After Major Storm Events	3.6		Remove When Sediment Impedes the Functioning of the Low Level Outlet		
	Retention Basins: Note Percent of Sediment Built-Up	*Bi-Annual and After Major Storm Events	3.6		Remove any Sediment that Accumulates on the Bottom of the Infiltration Basin		
Basin Slopes	Note Percent of Vegetative Cover	*Bi-Annual and After Major Storm Events	3.7		Re-grade, Reseed and Mulch in Areas with less than 80% Vegetative Cover. Remove Woody Vegetation by Mowing		
	Visual Inspection for Gullying, Animal Burrows and Undercutting of Banks	*Bi-Annual and After Major Storm Events	3.7		Re-grade, Reseed and Mulch as Needed		
Principal Spillway and Basin Outlet Structure	Visual Inspection for Debris and Floatables	*Bi-Annual and After Major Storm Events	3.8.1		Remove Debris as Needed		
	Visual Inspection of Condition of Concrete, Masonry and Crack Sealing	Annual	3.8.1		Repair Concrete, Masonry and Seal Cracks as Needed		
Low Flow Orifice	Visual Inspection for Obstructions	*Bi-Annual and After Major Storm Events	3.8.2		Clear Obstructions as Needed		
Emergency Spillway	Visual Inspection for Obstructions, Debris and Floatables	*Bi-Annual and After Major Storm Events	3.8.3		Clear Obstructions as Needed		

Date of Inspection:

Inspector:

*Bi-annual means Spring/Fall and major storm events means over 4 inches of rain in a 24 hour period.

APPENDIX B1 - O&M MANUAL

Seeding and Mulching Recommendations

STANDARD AND SPECIFICATIONS FOR PERMANENT CRITICAL AREA PLANTINGS

Definition

Establishing grasses with other forbs and/or shrubs to provide perennial vegetative cover on disturbed, denuded, slopes subject to erosion.

Purpose

To reduce erosion and sediment transport.

Conditions Where Practice Applies

This practice applies to all disturbed areas void of, or having insufficient, cover to prevent erosion and sediment transport. See additional standards for special situations such as sand dunes and sand and gravel pits.

Criteria

All water control measures will be installed as needed prior to final grading and seedbed preparation. Any severely compacted sections will require chiseling or disking to provide an adequate rooting zone, to a minimum depth of 12". The seedbed must be prepared to allow good soil to seed contact, with the soil not too soft and not too compact. Adequate soil moisture must be present to accomplish this. If surface is powder dry or sticky wet, postpone operations until moisture changes to a favorable condition. If seeding is accomplished within 24 hours of final grading, additional scarification is generally not needed, especially on ditch or stream banks. Remove all stones and other debris from the surface that are greater than 4 inches, or that will interfere with future mowing or maintenance.

Soil amendments should be incorporated into the upper 2 inches of soil when feasible. **The soil should be tested to determine the amounts of amendments needed.** Apply ground agricultural limestone to attain a pH of 6.0 in the upper 2 inches of soil. If soil must be fertilized before results of a soil test can be obtained to determine fertilizer needs, apply commercial fertilizer at 600 lbs. per acre of 5-10-10 or equivalent. If manure is used, apply a quantity to meet the nutrients of the above fertilizer. This requires an appropriate manure analysis prior to applying to the site. Do not use manure on sites to be planted with birdsfoot trefoil or in the path of concentrated water flow.

Seed mixtures may vary depending on location within the state and time of seeding. Generally, warm season grasses should only be seeded during early spring, April to May. These grasses are primarily used for vegetating excessively drained sands and gravels. See Standard and Specification for Sand and Gravel Mine Reclamation. Other grasses may be seeded any time of the year when the soil is not frozen and is workable. When legumes such as birdsfoot trefoil are included, spring seedings are preferred. See Table 3.1 "Permanent Critical Area Planting Mixture Recommendations" for additional seed mixtures.

General Seed Mix:
[1] add inoculant immediately prior to seeding

	Variety	lbs./acre	lbs/1000 sq. ft.
Birdsfoot trefoil[1] OR	Empire/Pardee	8[2]	0.20
Common white clover[1]	Common	8	0.20
PLUS			
Tall fescue	KY-31/Rebel	20	0.45
PLUS			
Redtop OR	Common	2	0.05
Ryegrass (perennial)	Pennfine/Linn	5	0.10

[2] Mix 4 lbs each of Empire and Pardee OR 4 lbs of Birdsfoot and 4 lbs white clover per acre.

Time of Seeding: The optimum timing for the general seed mixture is early spring. Permanent seedings may be made any time of year if properly mulched and adequate moisture is provided. Late June through early August is not a good time to seed, but may facilitate covering the land without additional disturbance if construction is completed. Portions of the seeding may fail due to drought and heat. These areas may need reseeding in late summer/fall or the following spring.

Method of seeding: Broadcasting, drilling, cultipack type

seeding, or hydroseeding are acceptable methods. Proper soil to seed contact is key to successful seedings.

Mulching: Mulching is essential to obtain a uniform stand of seeded plants. Optimum benefits of mulching new seedings are obtained with the use of small grain straw applied at a rate of 2 tons per acre, and anchored with a netting or tackifier. See the mulch standard and specification for choices and requirements.

Irrigation: Watering may be essential to establish a new seeding when a drought condition occurs shortly after a new seeding emerges. Irrigation is a specialized practice and care must be taken not to exceed the application rate for the soil or subsoil. When disconnecting irrigation pipe, be sure pipes are drained in a safe manor, not creating an erosion concern.

Table 3.1
Permanent Critical Area Planting Mixture Recommendations

Seed mixture	Variety	Rate in lbs. per acre	Rate in lbs. Per 1000 sq. ft.
Mix #1			
Creeping red fescue	Ensylva, Pennlawn, Boreal	10	.25
Perennial ryegrass	Pennfine, Linn	10	.25

*This mix is used extensively for shaded areas.

Mix #2

Switchgrass	Shelter, Pathfinder, Trailblazer, or Blackwell	20	.5

*This rate is in pure live seed, this would be an excellent choice along the upland edge of a wetland to filter runoff and provide wildlife benefits. In areas where erosion may be a problem, a companion seeding of sand lovegrass should be added to provide quick cover at a rate of 2 lbs. per acre (0.05 lbs. per 1000 sq. ft.).

Mix #3

Switchgrass	Shelter, Pathfinder, Trailblazer, or Blackwell	4	.1
Big bluestem	Niagara	4	.1
Little bluestem	Aldous or Camper	2	.05
Indiangrass	Rumsey	4	.1
Coastal panicgrass	Atlantic	2	.05
Sideoats grama	El Reno or Trailway	2	.05
Wildflower mix		.5	.01

*This mix has been successful on sand and gravel plantings. It is very difficult to seed without a warm season grass seeder such as a Truax seed drill. Broadcasting this seed is very difficult due to the fluffy nature of some of the seed, such as bluestems and indiangrass.

Mix #4

Switchgrass	Shelter, Pathfinder Trailblazer, or Blackwell	10	.25
Coastal panicgrass	Atlantic	10	.25

*This mix is salt tolerant, a good choice along the upland edge of tidal areas and roadsides.

Mix #5

Saltmeadow cordgrass (Spartina patens)—This grass is used for tidal shoreline protection and tidal marsh restoration. It is planted by vegetative stem divisions.

'Cape' American beachgrass can be planted for sand dune stabilization above the saltmeadow cordgrass zone.

Mix #6

Creeping red fescue	Ensylva, Pennlawn, Boreal	20	.45
Tall fescue	KY 31, Rebel	20	.45
Perennial ryegrass	Pennfine, Linn	5	.10
Birdsfoot trefoil	Empire, Pardee	10	.45

*General purpose erosion control mix. Not to be used for a turf planting or play grounds.

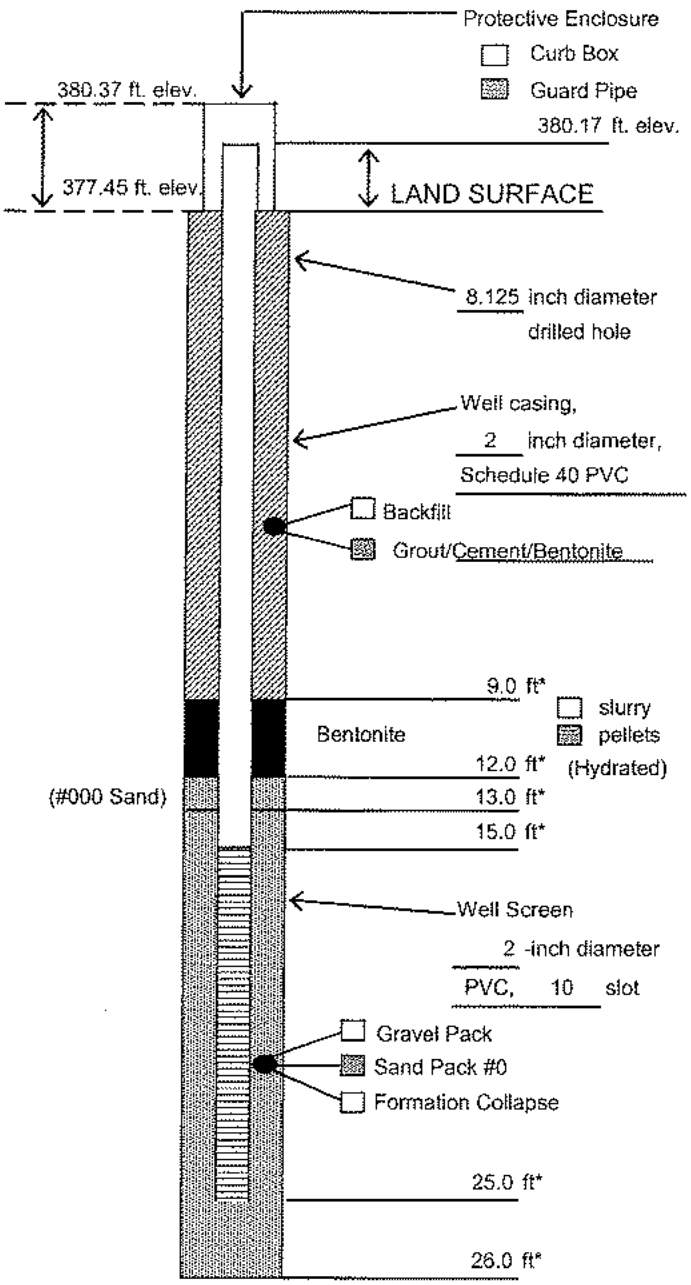
APPENDIX F

Monitoring Well Construction Logs

Well No. MW-101-6S

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 00.6801

Project Name Glens Falls Landfill RI/FS

Well No. MW-101-6S Boring No. B-101-6S

Town/City Town of Queensbury

County Warren State NY

Installation Date(s) 11/8/2001

Drilling Contractor Environmental Drilling NY

Drilling Method 4.25" I.D. Hollow Stem Auger

Water Depth From Top of Riser _____ ft _____ Date

C.T. Male Observer Brian Toth

Notes:

Materials Used:

Filpro Industrial Quartz Sand
- 3.5 bags WG #0
- < 0.5 bags WG #000

Holeplug Bentonite Chips
- 1.5 (50 lb) bags

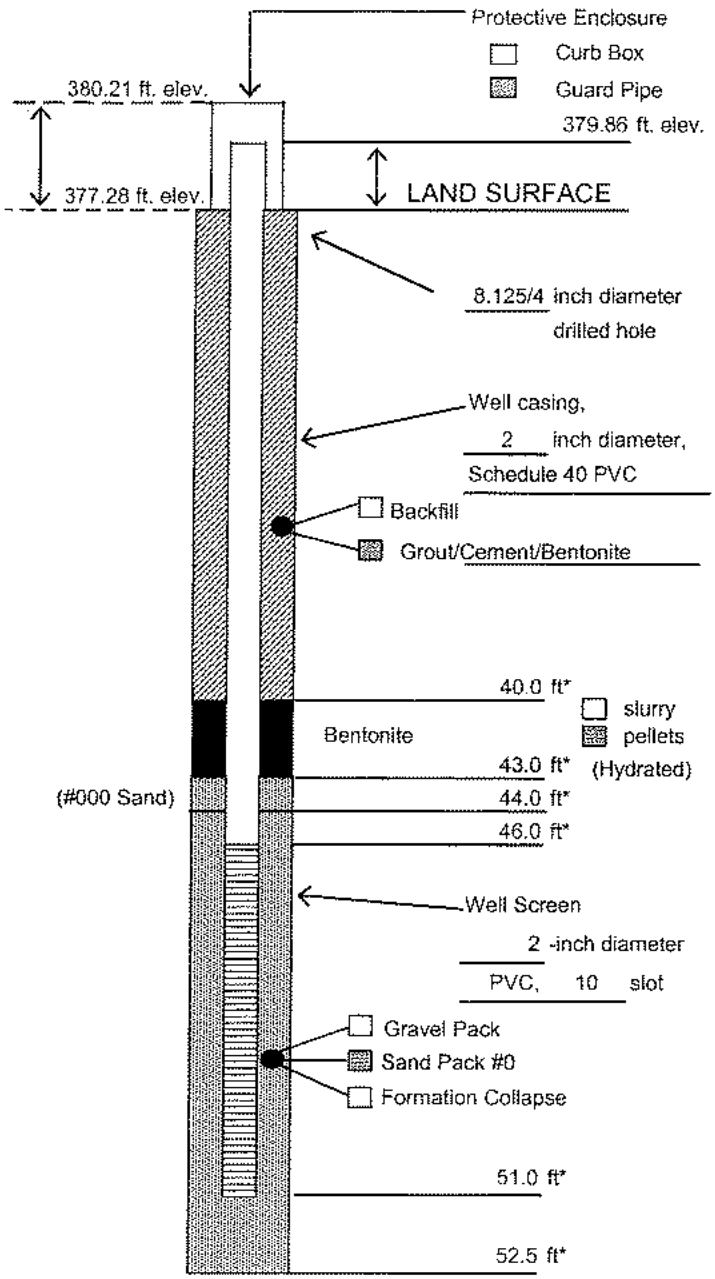
Cement/Bentonite Grout Mix
- 3 bags (94 lbs each) Portland Cement (Type I/II)
- 0.25 bag (50 lbs) Quikgel Bentonite Powder
- 45 gallons water

7' Guard Pipe

Well No. MW-101-6I

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 00.6801

Project Name Glens Falls Landfill RI/FS

Well No. MW-101-6I Boring No. B-101-6I

Town/City Town of Queensbury

County Warren State NY

Installation Date(s) 11/7 - 11/8/01

Drilling Contractor Environmental Drilling NY

Drilling Method 4.25" I.D. Hollow Stem Auger to 38',
4" O.D. casing/rollerbit to 52.5'

Water Depth From Top of Riser _____ ft _____
Date

C.T. Male Observer Brian Toth

Notes:

Materials Used:

Filpro Industrial Quartz Sand
- WG #0
- WG #000

Polymer Drilling System Bentonite Chips

Holeplug Bentonite Chips

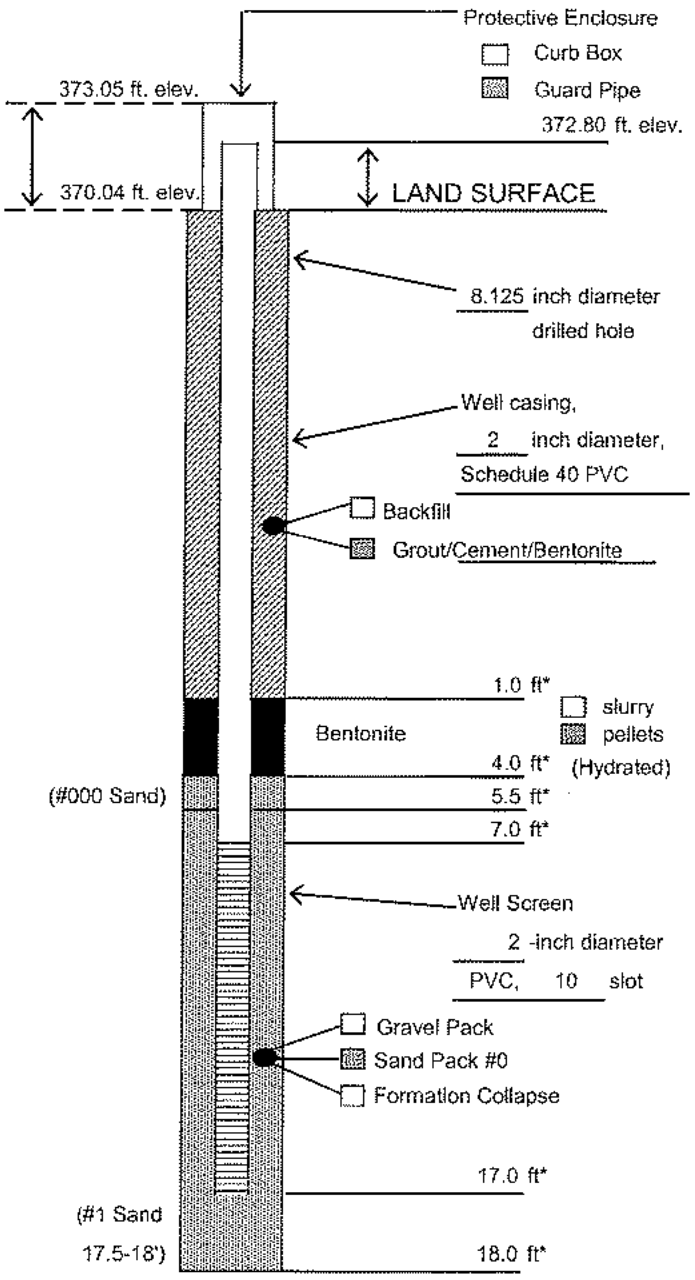
Cement/Bentonite Grout Mix
- 5 bags (94 lbs each) Portland Cement (Type I/II)
- 0.25 bag (50 lbs) Quikgel Bentonite Powder
- 70 gallons water

7' Guard Pipe

Well No. MW-101-7S

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 00.6801

Project Name Glens Falls Landfill RI/FS

Well No. MW-101-7S Boring No. B-101-7S

Town/City Town of Queensbury

County Warren State NY

Installation Date(s) 11/6/2001

Drilling Contractor Environmental Drilling NY

Drilling Method 4.25" I.D. Hollow Stem Auger

Water Depth From Top of Riser _____ ft _____ Date

C.T. Male Observer Brian Toth

Notes:

Materials Used:

Filpro Industrial Quartz Sand
- 3.5 bags WG #0
- 0.5 bags WG #000
- 0.25 bags WG #1

Polymer Drilling System Bentonite Chips
- 1 bag

Holeplug Bentonite Chips
- 0.5 bag

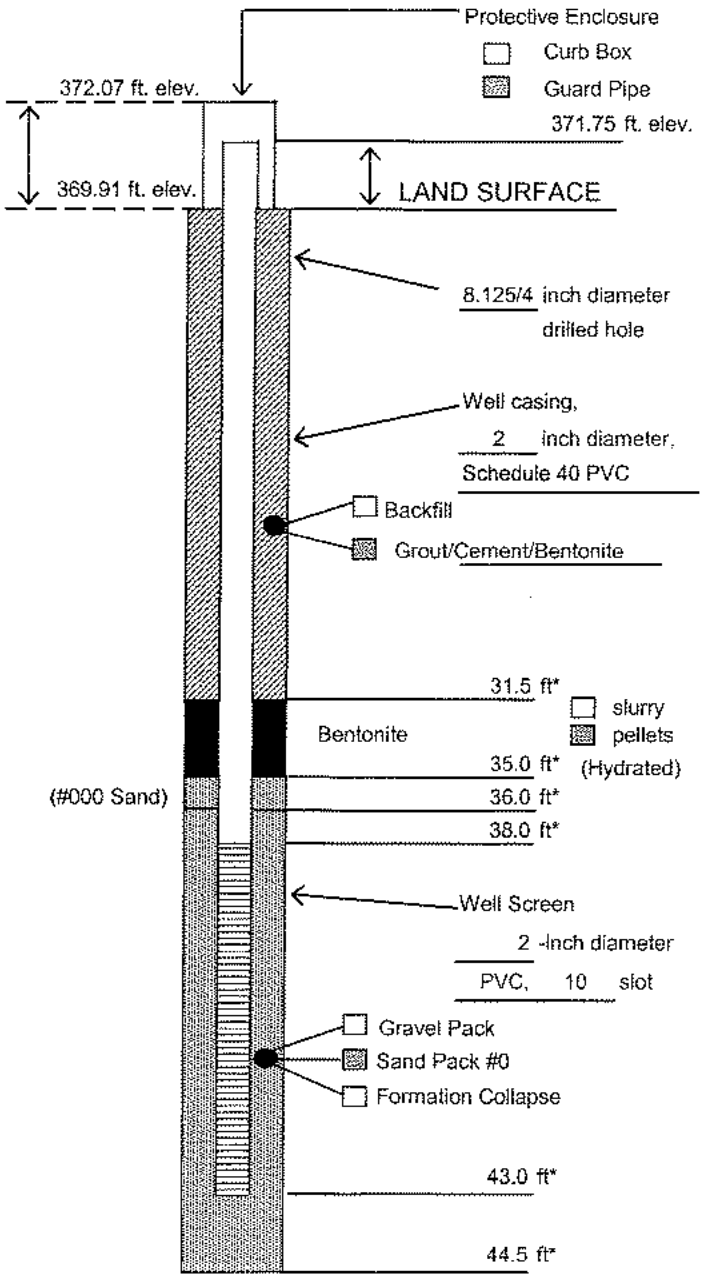
Cement/Bentonite Grout Mix
- 2 bags (94 lbs each) Portland Cement (Type I/II)
- 0.25 bag (50 lbs) Quikgel Bentonite Powder
- 25 gallons water

5' Guard Pipe

Well No. MW-101-7I

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES, P.C.



* Depth below land surface.

Project Number 00.6801

Project Name Glens Falls Landfill RI/FS

Well No. MW-101-7I Boring No. B-101-7I

Town/City Town of Queensbury

County Warren State NY

Installation Date(s) 11/2 - 11/5/01

Drilling Contractor Environmental Drilling NY

Drilling Method 4.25" I.D. Hollow Stem Auger to 30',
4" O.D. casing/rollerbit to 44.5'

Water Depth From Top of Riser _____ ft _____
Date

C.T. Male Observer Brian Toth

Notes:

Materials Used:

Filpro Industrial Quartz Sand
- WG #0
- WG #000

Polymer Drilling System Bentonite Chips
- 1 bag

Holeplug Bentonite Chips
- 0.5 bag

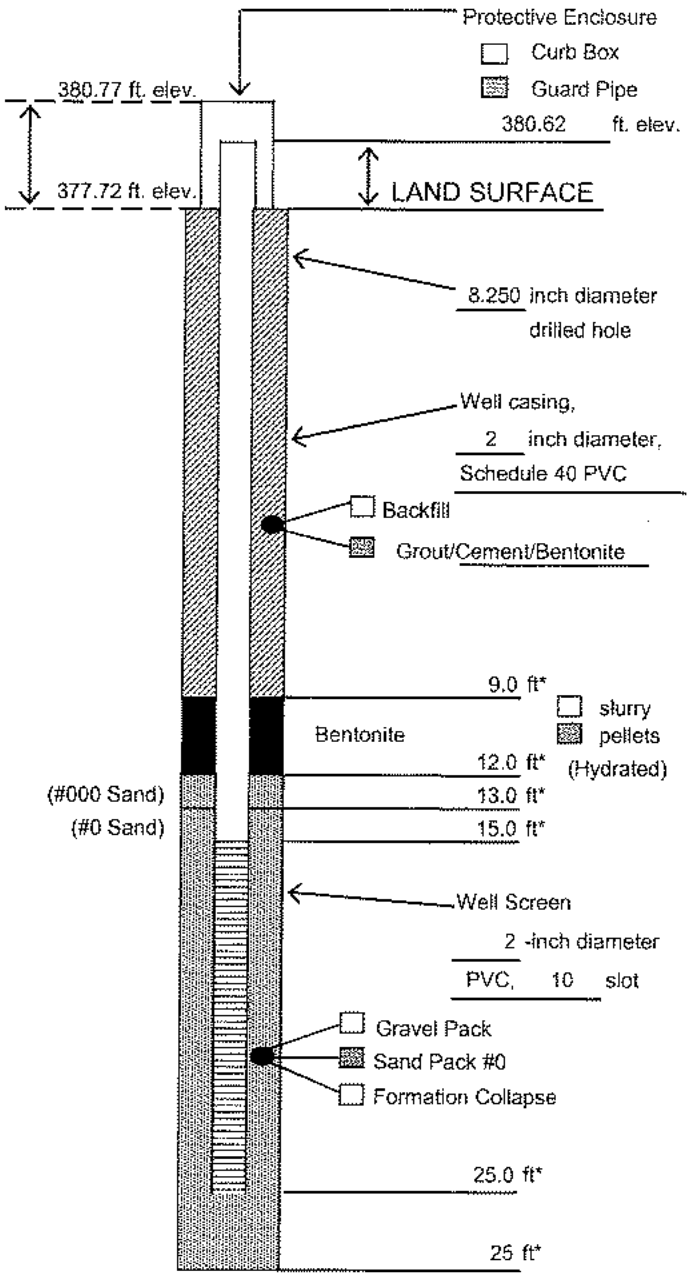
Cement/Bentonite Grout Mix
- 3 bags (94 lbs each) Portland Cement (Type I/II)
- 0.25 bag (50 lbs) Quikgel Bentonite Powder
- 40 gallons water

7' Guard Pipe

Well No. MW-101-8S(R)

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below land surface.

Project Number 05.5824

Project Name Glens Falls Landfill Remedial Action

Well No. MW-101-8S(R) Boring No. MW-101-8S(R)

Town/City Town of Queensbury

County Warren State NY

Installation Date(s) 9/29/2011

Drilling Contractor SJB Services, Inc.

Drilling Method 4.25" I.D. Hollow Stem Auger

Water Depth From Top of Riser ____ ft ____ Date

C.T. Male Observer Dan Achtyl

Notes:

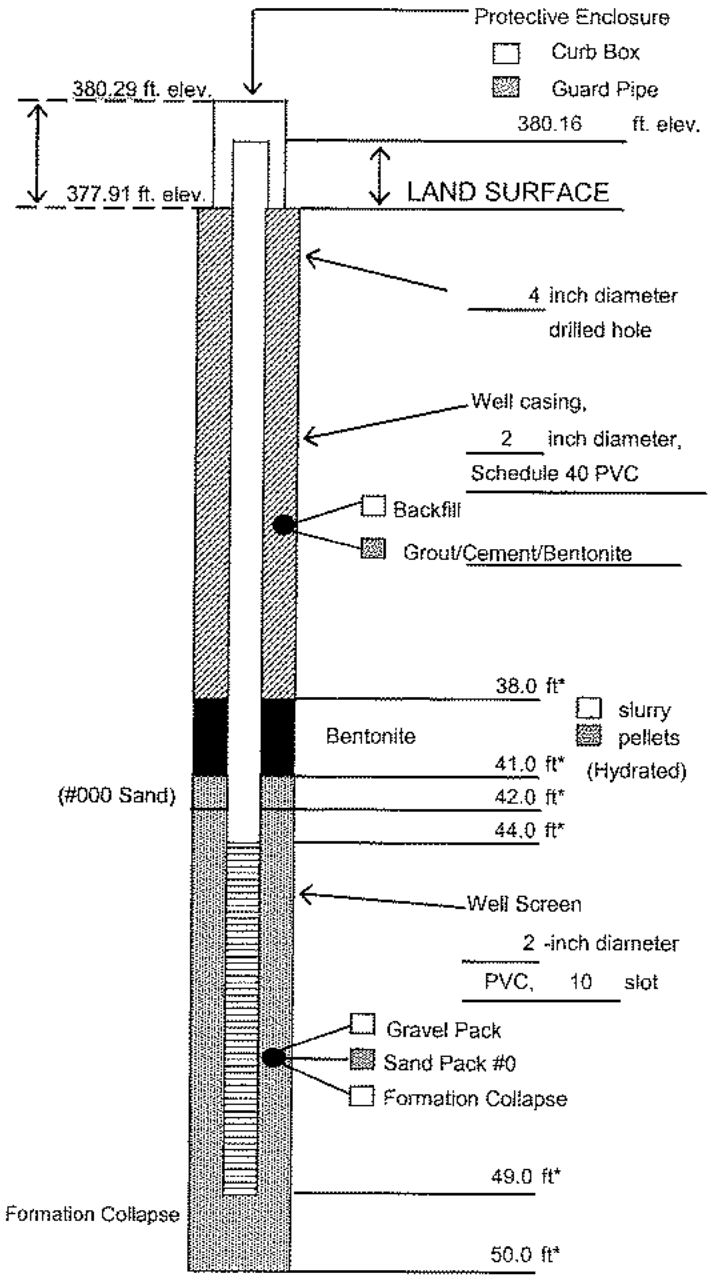
Materials Used:

10' Schedule 40 PVC 10-slot screen
20' Schedule 40 PVC Riser
1 End Cap
1 Slip on Cap
5' Guard Pipe
2.5 Bags #0 Sand (50 lbs each), FilPro
0.5 Bags #000 Sand (50 lbs each), FilPro
2 Bags Bentonite Chips (50 lbs each), Baroid Holeplug
2 Bags Portland Cement Type 1/11 (94 lbs each), Quikrete
1/5 Bag Bentonite Powder (50 lbs each), Baroid Quikgel
40 Gallons of Water

Well No. MW-101-8I(R)

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below land surface.

Project Number 05.5824

Project Name Glens Falls Landfill Remedial Action

Well No. MW-101-8I(R) Boring No. MW-101-8I(R)

Town/City Town of Queensbury

County Warren State NY

Installation Date(s) 9/30/2011

Drilling Contractor SJB Services, Inc.

Drilling Method 4" Flush Tread Casing

Water Depth From Top of Riser _____ ft _____ Date

C.T. Male Observer Dan Achtyl

Notes:

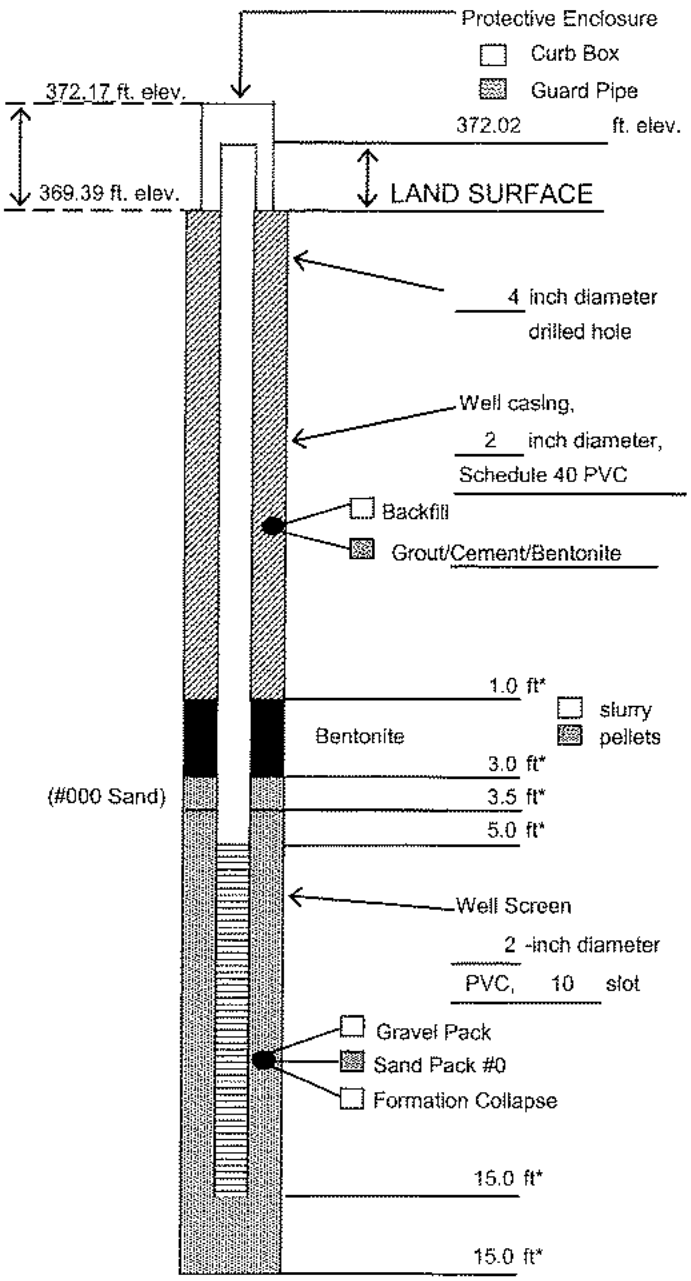
Materials Used:

5' Schedule 40 PVC 10-slot screen
47' Schedule 40 PVC Riser
1 End Cap
1 Slip on Cap
5' Guard Pipe
3/4 Bag #0 Sand (50 lbs each), FilPro
1/4 Bag #000 Sand (50 lbs each), FilPro
1/2 Bag Bentonite Chips (50 lbs each), Baroid Holeplug
2 Bags Portland Cement Type 1/11 (94 lbs each), Quikrete
1/5 Bag Bentonite Powder (50 lbs each), Baroid Quikgel
40 Gallons of Water

Well No. MW-101-10S(R)

MONITORING WELL CONSTRUCTION LOG

C.T. MALE ASSOCIATES



* Depth below land surface.

Project Number 05.5824

Project Name Glens Falls Landfill Remedial Action

Well No. MW-101-10S(R) Boring No. MW-101-10S(R)

Town/City Town of Queensbury

County Warren State NY

Installation Date(s) 9/28/2011-9/29/2011

Drilling Contractor SJB Services, Inc.

Drilling Method 4" Flush Thread Casing

Water Depth From Top of Riser _____ ft _____ Date

C.T. Male Observer Dan Achtyl

Notes:

Materials Used:

10' Schedule 40 PVC 10-slot screen
8' Schedule 40 PVC Riser
1 End Cap
1 Slip on Cap
2 Bags #0 Sand (50 lbs each), FilPro
1/5 Bag #000 Sand (50 lbs each), FilPro
3/4 Bag Bentonite Chips (50 lbs each), Baroid Holeplug
1 Bag Portland Cement Type 1/11 (94 lbs each), Quikrete
5 lbs Bentonite Powder (50 lbs each), Baroid Quikgel
10-15 Gallons of Water
5' Guard Pipe

DRILLING LOG OF WELL NO. MW-2S

Project/Location: Luzerne Road Landfill / Glens Falls, NY
Boring Location: Glens Falls Landfill eastern toe
Northing/Easting: 5386.8427 / 4819.1278
Date Started - Finished: 8/27/99 - 8/27/99
Drilling Company: Applied Earth Tech
Driller/Geologist: P. Mandigo / J. Nickerson

Total Depth of Hole (feet BGS): 23
Ground Elevation (feet AMSL): 378.57
Groundwater Depth After Drilling / Date: feet BGS ▽ /
Top of Inner Casing (feet AMSL): 380.53

ELEVATION / DEPTH	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	RQD (%)	PENETRATION TIMES	BLOW COUNT	RECOVERY (feet)	OVA (ppm) SAMPLE / HOLE	COMMENTS
gs elevation 378.57	Locking Cover; Protective Casing	ground surface (gs)						
0	Portland Cement	TOPSOIL: Brown organic silty loam with ~20% sand, dry.			1 1 2 2	0.8	0.8	Well Construction Bentonite Seal: 9 - 11 ft bgs Sand Pack: 11 - 23 ft bgs Screen: 13 - 23 ft bgs
1.0		SAND: Silty sand, light, grading to fine-medium grained sand, varved at 1" intervals, dry becoming damp at 2'.			3 6 9 10	1	.2	
375 4					10 10 11 11	2	0	
6.0		SAND: Fine-medium grained light brown sand, no varving, no inclusions, damp becoming moist at 15'.			7 8 10 11	2	0	
370 9	Bentonite Seal				7 8 5 6	1.6	0	
11	No. 1 Quartz Sand				5 6 5 6	1.7	0	
13	2" PVC No. 10 Slot Screen	At 13.5'-14': Some iron staining.			5 6 7 8	1.5	0	
365 14					5 6 8 7	1.6	0	
15 16								

DRILLING LOG OF WELL NO. MW-2S

Project/Location: Luzerne Road Landfill / Glens Falls, NY

Total Depth of Hole (feet BGS): 23

ELEVATION	DEPTH	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	RQD (%)	PENETRATION TIMES	BLOW COUNT	RECOVERY (feet)	OVA (ppm) SAMPLE / HOLE	COMMENTS
	17		SAND: Fine-medium grained light brown sand, moist.			5 5 6 6	1.6	2	
	18		18.0						
360	19		SAND: Medium grained grading to coarse at 19', then grading to medium at 19.4, grades to gray at 19'-20'.			4 5 5 6	1.8	8	Wet at 18' bgs.
	20		20.0						
	21		SAND: Medium grained gray sand, wet. Running sands encountered.			1 1 3 5	1.2	7	
	22								
	23		23.0						Bottom of hole at 23' bgs.
355	24								
	25								
	26								
	27								
	28								
350	29								
	30								
	31								
	32								
	33								
345	34								
	35								
	36								
	37								
	38								

APPENDIX G

Blank Sampling and Inspection Forms

- **Groundwater Services Field Log Form**
- **Explosive Gas Sampling Form**
- **Site-Wide Inspection Form**
- **Maintenance Inspection Form Stormwater Management System**

GROUNDWATER SERVICES FIELD LOG FORM

General Information

Project#: _____ Date: _____ Well#: _____

Project: _____

Location: _____ Sampler(s): _____

Well Information

Static Water Level: _____ BTOC Measuring Point: Top of PVC

Total Depth of Well: _____ BTOC Well Casing Diameter: _____

Purge Method: Bailer Conversion Factors (Linear feet to Gallons)

(Circle One) Wattera 2" = 0.16 Gallons

Other: _____ 3" = 0.38 Gallons

_____ 4" = 0.66 Gallons

Well Volume: _____ Gallons Volumes Purged: _____ Gallons

Time Started: _____ Time Completed: _____

Recovery Height: _____ Recovery Time: _____ Minutes

% Recovery: _____

Field Parameters

	Initial Evacuation (1st Bailer)		Initial Evacuation Just Before Sampling	
Temperature:	_____	°C	_____	°C
pH:	_____	SU	_____	SU
Conductivity:	_____	µs	_____	µs
Eh	_____	mV	_____	mV
Turbidity:	_____	NTU	_____	NTU

Groundwater Appearance: _____

Sample Collection Time: _____

Notes

_____

_____

_____

_____

LANDFILL POST CLOSURE MONITORING AND MAINTENANCE
EXPLOSIVE GAS SAMPLING FORM

Proj. No. _____Date: _____ Pg. _____ of _____
Project:_____
Weather/Temperature: _____
Barometric Pressure/Wind:_____
Time: _____ Sampling Personnel: _____
Equipment Used: _____
Date Calibrated: _____ By: _____

Sample ID	Location	Depth	% O2	% LEL	Hydrogen Sulfide

SITE WIDE INSPECTION FORM
GLENS FALLS MUNICIPAL LANDFILL AT LUZERNE ROAD SITE
SITE MANAGEMENT PLAN (SMP)

Date: _____

Inspection Personnel:_____

Weather Conditions: _____

Site related contaminants included select volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals and leachate indicator parameters (applies to groundwater only) in various media at the site, including subsurface soil and groundwater.

The site has been remediated including covering areas that contain landfill waste with a 6NYCRR Part 360 modified low permeability cover system/cap.

This SMP Site Wide Inspection Form will be utilized to inspect the site to ensure that current site conditions remain protective to public health and the environment from underlying contamination.

Attachments to this Inspection Form include a Site Plan.

Existing Conditions Inspection

Has the overall condition of the site changed from the previous inspection (if first inspection, respond with N/A)? Yes____ No___

If Yes, provide details and identify on Site Plan.

Is there evidence of human access to the site (i.e. walking paths, ATV trails, etc.)? Yes____ No___

If Yes, provide details and identify on Site Plan.

Is there evidence of site development? Yes____ No___

If Yes, provide details and identify on Site Plan.

Have photographs been taken of the site for inclusion in the site inspection report? Yes____ No___

If No, give reason.

Cover System Inspection

Has the overall condition of the cover system changed from the previous inspection (if first inspection, respond with N/A)? Yes____ No___

If Yes, provide detail and identify on Site Plan.

Is soil cover system adequately vegetated to prevent erosion? Yes____ No___

If No, identify locations and provide detail on Site Plan.

Does the vegetative cover have sparse areas or areas in need of reseeding? Yes____ No___

Is woody growth present within the vegetative cover? Yes____ No___

If Yes, identify locations and provide detail on Site Plan.

Is there evidence that the cover system has been eroded by wind and/or water? Yes____ No___

If Yes, identify locations and provide detail on Site Plan.

Is there evidence that the soil cover system has been breached (i.e., areas where surface appears patched, signs of excavation)? Yes____ No___

If Yes, identify locations and provide detail on Site Plan.

Are burrows or tunnels created by animals present? Yes____ No___

If Yes, identify locations and provide detail on Site Plan.

Are any ponded areas or depressions present within the cover system? Yes____ No___

If Yes, identify locations and provide detail on Site Plan.

Are any leachate seeps present? Yes____ No___

If Yes, identify locations and provide detail on Site Plan.

Are there any other areas of notable damage to the cover system? Yes____ No___

If Yes, identify locations and provide detail on Site Plan.

Have photographs been taken of the cover system for inclusion in the site inspection report? Yes____ No___

If No, give reason.

Inspection of Structures

1. Monitoring Wells

Well Number	Condition (Guard Pipes, Locks, Riser, Etc.) and Recommendation
MW-101-1	
MW-101-3	
MW-101-4	
MW-101-5	
MW-101-6S	
MW-101-6I	
MW-101-7S	
MW-101-7I	

MW-101-8S(R)	
MW-101-8I(R)	
MW-101-10S(R)	
MW-2S	

2. Gas Venting Structures in Need of Repair

Vent Number	Condition and Recommendation
GV-1	
GV-2	
GV-3	

General Comments:

MAINTENANCE INSPECTION FORM
Stormwater Management System
Glens Falls Municipal Landfill at Luzerne Road

Stormwater Facility Component	Inspection Requirement	Frequency of Inspection	O&M Manual Section No.	Inspection Comments	Maintenance Required	Maintenance Needed? (Y/N)	Maintenance Comments / Date of Maintenance
Catch Basins	Stick Measure for Sediment Depth	*Bi-Annual and After Major Storm Events	3.2		Remove Any Sediment That Accumulates Within the Bottom of the Catch Basin		
	Visual Inspection for Trash	*Bi-Annual and After Major Storm Events	3.2		Remove Trash as Needed		
End Sections	Visual Inspection of Stone Aprons for Trash and Sediment	*Bi-Annual and After Major Storm Events	3.3		Remove Trash and Sediment as Needed		
Storm Sewers/Drainage Culverts	Visual Inspection for Obstructions, Debris and Floatables	*Bi-Annual and After Major Storm Events	3.4		Flush Storm Culvert Pipes as Needed		
Debris Removal	Visual Inspection for Debris in Basins	*Monthly and After Major Storm Events	3.5		Remove Debris as Needed		
Sediment Monitoring and Removal	Detention Basin: Note Percent of Sediment Built-Up	*Bi-Annual and After Major Storm Events	3.6		Remove When Sediment Impedes the Functioning of the Low Level Outlet		
	Retention Basins: Note Percent of Sediment Built-Up	*Bi-Annual and After Major Storm Events	3.6		Remove any Sediment that Accumulates on the Bottom of the Infiltration Basin		
Basin Slopes	Note Percent of Vegetative Cover	*Bi-Annual and After Major Storm Events	3.7		Re-grade, Reseed and Mulch in Areas with less than 80% Vegetative Cover. Remove Woody Vegetation by Mowing		
	Visual Inspection for Gullying, Animal Burrows and Undercutting of Banks	*Bi-Annual and After Major Storm Events	3.7		Re-grade, Reseed and Mulch as Needed		
Principal Spillway and Basin Outlet Structure	Visual Inspection for Debris and Floatables	*Bi-Annual and After Major Storm Events	3.8.1		Remove Debris as Needed		
	Visual Inspection of Condition of Concrete, Masonry and Crack Sealing	Annual	3.8.1		Repair Concrete, Masonry and Seal Cracks as Needed		
Low Flow Orifice	Visual Inspection for Obstructions	*Bi-Annual and After Major Storm Events	3.8.2		Clear Obstructions as Needed		
Emergency Spillway	Visual Inspection for Obstructions, Debris and Floatables	*Bi-Annual and After Major Storm Events	3.8.3		Clear Obstructions as Needed		

Date of Inspection:

Inspector:

*Bi-annual means Spring/Fall and major storm events means over 4 inches of rain in a 24 hour period.

- 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).

4.4.2 Non-Routine Maintenance Reports

During each non-routine 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).

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS PLAN

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Site Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection (Section 3.4) will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component, as applicable, has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective monitoring programs (refer to Appendix E for blank Maintenance Inspection Form Stormwater Management System). Additionally, a general site-wide inspection form will be completed during the site-wide inspection (refer to Appendix G for blank Site-Wide Inspection Form). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Site Monitoring Plan is being implemented;

- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the Remedial Design Report and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State will prepare the following certification:

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, _____of _____, am certifying as Owner's Designated Site Representative.

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

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

- The institutional 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 information presented in this report is accurate and complete; and
- 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, _____of _____ am certifying as Owner's Designated Site Representative.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report (i.e., Post-Closure Monitoring Report) will be submitted to the Department every year, beginning eighteen months after the Certificate of Completion is issued. 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 (Metes and Bounds Description). The report will be prepared in accordance with NYSDEC DER-10 and 6NYCRR Part 360 and submitted within 45 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;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- 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, explosive gas, etc.), which include a listing of all

compounds analyzed, along with the applicable standards, with all exceedences highlighted. These 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 electronically in a NYSDEC-approved format; and
- A site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the site-specific ROD;
    - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Site Monitoring Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Site Monitoring Plan; and
    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Regional Office in which the site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES 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, a corrective measures plan will be submitted to the NYSDEC 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 plan until it is approved by the NYSDEC.