**Former Taylor's Lane Composting Site**

**Westchester COUNTY**

**Mamaroneck, NEW YORK**

# SITE MANAGEMENT PLAN

**NYSDEC Site Number: 360021**

**Prepared for:**

Village of Mamaroneck

169 Mt. Pleasant Avenue

Mamaroneck, New York 10543

**Prepared by:**

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Brooklyn, New York 11201

Project No. 41629.00

**Revisions to Final Approved Site Management Plan:**

| Revision Number | Date Submitted | Revision Summary | NYSDEC Approval Date |
|---|---|---|---|
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**JULY 2024**

# CERTIFICATION STATEMENT

I, Daniel Noll, certify that I am currently a New York State Registered Professional Engineer as defined by 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).


_____ P.E.

7.31.2024_____ DATE

**Former Taylor's Lane Composting Site**

**Westchester County**

**Mamaroneck, New York**

# SITE MANAGEMENT PLAN

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## LIST OF ACRONYMS

| | |
|---|---|
| AS | Air Sparging |
| ASP | Analytical Services Protocol |
| BCA | Brownfield Cleanup Agreement |
| BCP | Brownfield Cleanup Program |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| CAMP | Community Air Monitoring Plan |
| C/D | Construction and Demolition |
| CFR | Code of Federal Regulation |
| CLP | Contract Laboratory Program |
| COC | Certificate of Completion |
| CO2 | Carbon Dioxide |
| CP | Commissioner Policy |
| DER | Division of Environmental Remediation |
| EC | Engineering Control |
| ECL | Environmental Conservation Law |
| ELAP | Environmental Laboratory Approval Program |
| ERP | Environmental Restoration Program |
| EWP | Excavation Work Plan |
| GHG | Green House Gas |
| GWE&T | Groundwater Extraction and Treatment |
| HASP | Health and Safety Plan |
| IC | Institutional Control |
| NYSDEC | New York State Department of Environmental Conservation |
| NYSDOH | New York State Department of Health |
| NYCRR | New York Codes, Rules and Regulations |
| O&M | Operation and Maintenance |
| OM&M | Operation, Maintenance and Monitoring |
| OSHA | Occupational Safety and Health Administration |
| OU | Operable Unit |
| PID | Photoionization Detector |
| PRP | Potentially Responsible Party |
| PRR | Periodic Review Report |
| QA/QC | Quality Assurance/Quality Control |
| QAPP | Quality Assurance Project Plan |
| RAO | Remedial Action Objective |
| RAWP | Remedial Action Work Plan |
| RCRA | Resource Conservation and Recovery Act |
| RI/FS | Remedial Investigation/Feasibility Study |
| ROD | Record of Decision |
| RP | Remedial Party |

| | |
|---|---|
| RSO | Remedial System Optimization |
| SAC | State Assistance Contract |
| SCG | Standards, Criteria and Guidelines |
| SCO | Soil Cleanup Objective |
| SMP | Site Management Plan |
| SOP | Standard Operating Procedures |
| SOW | Statement of Work |
| SPDES | State Pollutant Discharge Elimination System |
| SSD | Sub-slab Depressurization |
| SVE | Soil Vapor Extraction |
| SVI | Soil Vapor Intrusion |
| TAL | Target Analyte List |
| TCL | Target Compound List |
| TCLP | Toxicity Characteristic Leachate Procedure |
| USEPA | United States Environmental Protection Agency |
| UST | Underground Storage Tank |
| VCA | Voluntary Cleanup Agreement |
| VCP | Voluntary Cleanup Program |

# ES EXECUTIVE SUMMARY

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

| **Site Identification:** | **NYSDEC Site Number 360021**<br>**Former Taylor's Lane Composting Site** |
|---|---|
| **Institutional Controls:** | 1. The property may be used for active or passive recreational use,<br>2. All ECs must be operated and maintained as specified in this SMP,<br>3. All ECs must be inspected at a frequency and in a manner defined in the SMP,<br>4. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Westchester 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,<br>5. Groundwater and other environmental or public health monitoring must be performed as defined in this SMP,<br>6. Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP,<br>7. All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP,<br>8. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP,<br>9. Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP,<br>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 the Deed Restriction,<br>11. The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on **Figure 12**, and any potential impacts that are identified must be monitored or mitigated,<br>12. Vegetable gardens and farming on the site are prohibited, and<br>13. Implementation of a deed restriction to limit land use and prevent future exposure to any contamination remaining at the site. |

| | |
|---|---|
| **Site Identification:** | **NYSDEC Site Number 360021**<br>**Former Taylor's Lane Composting Site** |
| **Engineering Controls:** | 1. Low Permeability Cover System / Cap<br>2. Site Security Fencing<br>3. Stormwater / Leachate Management System<br>4. Passive Leachate Collection / Drainage System |

| **Inspections** | **Frequency** |
|---|---|
| 1. Landfill Cover System<br>2. Gas Wells / Vents and Enclosures<br>3. Perimeter Security Fence and Gates(s)<br>4. Site Monitoring Wells and Piezometers<br>5. Landfill Cap Vegetation<br>6. Perimeter Leachate Drainage Improvement System / Area and Outfall to Magid Pond (including inspection of adjacent properties for evidence of additional leachate outbreaks) | Annual |
| **Monitoring:** | **Frequency** |
| 1. Groundwater Wells<br>Downgradient: MW-2S & MW-2D<br>Side-Gradient: MW-4S & MW-4D<br>Upgradient: MW-9S & MW-9D<br>Landfill: MW-15D | Annual (sliding quarter) Beginning Q4 2023, followed by Q3 2024, Q2 2025, Q1 2026.<br><br>Repeat until sampling frequency change approved by the NYSDEC.<br><br>Sampling for PFAS and 1,4-dioxane during the first year (2023) and every third year thereafter. |
| 2. Gas Vents GV-1 through GV-8, and slam bar monitoring as needed. | Annual |
| 3. Leachate Drainage / Collection System Outfall (MH1) | Annual |

| **Site Identification:** | **NYSDEC Site Number 360021**<br>**Former Taylor's Lane Composting Site** |
|---|---|
| 4. Storm Sewer System Outfall to Magid Pond (CB1) | Annual |
| **Maintenance:** | |
| 1. Low Permeability Cover System / Cap<br>2. Perimeter Fence<br>3. Gas Vents and Enclosures<br>4. Perimeter Leachate Collection / Drainage System<br>5. Site Monitoring Wells and Piezometers<br>6. Landfill Cap Vegetation | Annual or as needed |
| **Reporting:** | |
| 1. Groundwater and Landfill Gas Monitoring Data | Annual |
| 2. Periodic Review Report | Every Three Years |

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

# 1.0 INTRODUCTION

## 1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the Former Taylor's Lane Composting Site located in the Village of Mamaroneck, Westchester County, New York (hereinafter referred to as the "Site"). The Site is currently listed in the New York State (NYS) Registry of Inactive Hazardous Waste Disposal Sites (IHWDS) as Site No. 360021 which is administered by New York State Department of Environmental Conservation (NYSDEC). A Site Location Map is included as **Figure 1**.

The Village of Mamaroneck entered into an Order on Consent, on August 14, 1989 with the NYSDEC to remediate the site. A figure showing the site location and boundaries of this site is provided in **Figure 2**. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Deed Restriction provided in **Appendix A**.

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

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

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Deed Restriction. Failure to properly implement the SMP is a violation of the Deed Restriction;

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the Order on Consent (Index #W-3-0309-89-05; Site #360021) for the site, and thereby subject to applicable penalties.

All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in **Appendix C** of this SMP. Responsibilities of the owner and / or remedial party is included in **Appendix D**.

This SMP was prepared by LaBella Associates, D.P.C., on behalf of the Village of Mamaroneck, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010 and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the site.

## 1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. In accordance with the Deed Restrictions 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. The NYSDEC can also make changes to the SMP or request revisions from the remedial party.

## 1.3 Notifications

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

1. 60-day advance notice of any proposed changes in site use that are required under the terms of the Order on Consent dated August 14, 1989, 6NYCRR Part 375 and/or Environmental Conservation Law.

2. 15-day advance notice of any field activity associated with the remedial program.

3. 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan. If the ground-intrusive activity qualifies as a change of use as defined in 6 NYCRR Part 375, the above mentioned 60-day advance notice is also required.

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

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

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

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

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

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

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

**Table 1** below includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in **Appendix C**.

**Table 1: Notifications***

| **Name** | **Contact Information** |
|---|---|
| Daniel Lanners<br>NYSDEC Project Manager | 518-402-9652<br>daniel.lanners@dec.ny.gov |
| Amen Omorogbe<br>NYSDEC Section Chief<br>Remedial Bureau C | 518-402-9801<br>amen.omorogbe@dec.ny.gov |
| Renata Ockerby<br>NYSDOH Project Manager | 518-402-7867<br>renata.ockerby@health.ny.gov |
| Steven McCague<br>NYSDEC Region 3 Hazardous Waste Remediation Engineer | 845-256-3146<br>steven.mccague@dec.ny.gov |
| Kelly Lewandowski<br>NYSDEC Site Control Chief | 518-402-9553<br>kelly.lewandowski@dec.ny.gov |

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

# 2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

## 2.1 Site Location and Description

The site is located in the Village of Mamaroneck, Westchester County, New York and is identified as Section 155.37, Block 1, Lots 42 and 48 on the Village of Mamaroneck Tax Map (see **Figures 1 and 2**). The site is an approximately 7.81-acre area and is bounded by developed properties along East Boston Road to the north, residential properties along Greenhaven Road to the east, Shadow Lane to the south, and Taylor Lane to the west (see **Figure 1 – Site Location Map** and **Figure 2 – Site Layout Map**). The boundaries of the site are more fully described in **Appendix A** – Deed Restriction, which includes a survey updated in July 2016. The owner(s) of the site parcel(s) at the time of issuance of this SMP is the Village of Mamaroneck. A more recent site survey updated in February 2023 is included in **Appendix B**.

## 2.2 Physical Setting

### 2.2.1 Land Use

The site is a former landfill that is approximately 7.81 acres in size, of which approximately 6.82 acres has been capped and surrounded by fencing. The site is currently inactive open space. The surrounding area is predominantly residential with commercial properties located to the north along East Boston Post Road, including an auto repair shop and gasoline service station, an auto dealership, and a nursery / garden center. The nearest residential properties abutting the site to the east along Greenhaven Road and Shadow Lane, with the nearest residence located less than forty feet from the edge of the landfill cap.

The site is situated in the Village of Mamaroneck (Town of Rye) and is bounded to the north by approximately 170 feet of East Boston Post Road, to the south by Shadow Lane, to the west by Taylors Lane and to the east by Greenhaven Road. Commercial properties abutting the site to the north along East Boston Post Road. Several residential properties are located adjacent to the site to the east and south along Greenhaven Road and Shadow Lane, and to the northwest across Taylors Lane. Magid Pond (a designated Critical Environmental Area) is a freshwater pond and wetland area located southwest of the site across Taylors Lane.

The operations of the north-adjacent nursery / garden center, including equipment and a soil pile, are presently encroaching onto the Site (Lot 42). Upon approval of the SMP actions will be taken by the Village to address the encroachment of equipment and materials from the adjacent landscaping/garden center onto the northern portion of the landfill. Once the encroaching soil pile has been removed, recommend using contractor that installed the cap to inspect the cap area that was impacted, and make any necessary repairs. The perimeter fence surrounding the capped area will be reestablished to minimize the potential for current and future human exposures to contamination remaining under the landfill cap.

### 2.2.2 Geology / Hydrogeology

The site is comprised of fill extending an average of 15 feet below grade, underlain by a sand layer extending to an average of 40 feet below grade. Bedrock is present between 8 and 80 feet below grade. A cross-section is shown in **Figure 3**. Groundwater is present throughout the depth of fill at approximately 2 to 4 ft bgs and flows to the south-southwest. A groundwater contour map is shown in **Figure 4**.

The Taylor Lane site lies within the Otter Creek watershed, which drains directly into the Long Island Sound. The closest body of water to the site is Magid Pond, which drains into Otter Creek, and is located west of the site. Magid Pond is a freshwater wetland which is regulated under Article 24 of the New York State Environmental Conservation Law, Freshwater Wetlands Act. Magid Pond is classified as a Class D surface water body according to the New York State Surface Water Quality Standards.

## 2.3 Investigation and Remedial History

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

The site was used as a municipal landfill which allegedly received industrial wastes from the 1950s through the early 1970s. Prior to that the land was mined for gravel, and the open pits were reportedly filled with industrial wastes. Incinerator wastes and other industrial wastes were also reportedly disposed at the site.

Since the late 1970s, the southern 6 acres of the site was used for composting leaves, tree trunks and wood chips. A limited investigation in 1987 uncovered drums, decomposed drum fragments, and wastes which were determined to be hazardous. Drums which could be removed from the ground were placed in containers on-site for future disposal. The Village closed the Site and discontinued the use of the leaf composting function in December 1988 at which time the site was placed on the NYSDEC's Registry of Inactive Hazardous Waste Disposal Sites (Site No. 360021) in December 1988 and was designated a "Class 2" inactive hazardous waste site. The Village of Mamaroneck entered into an Order on Consent with the NYSDEC in August 1989 to complete a remedial program at the site. A Remedial Investigation was performed between November 1989 and August 1990. A Supplemental Remedial Investigation was performed between December 1991 and May 1992. The NYSDEC issued a Record of Decision in December 1993 presenting the selected remedial action for the Mamaroneck Taylor's Lane Composting Site. The remedy was implemented and construction of the cap was completed in Spring 1997. The Village performed Interim Remedial Measures / Correctives Measures to improve site drainage between 2009 and 2016. A Final Construction Completion Report was submitted in October 2016.

A Final Engineering Report documenting remedial actions completed at the site was approved in November 2019.

A list of reports prepared in connection with the Site is presented in **Section 8.0 – References.**

### 2.3.1 Summary of RI / FS

A Remedial Investigation (RI) was performed by Malcolm Pirnie, Inc. (MPI) between November 1989 and August 1990 in accordance with plans formally approved by the NYSDEC in April 1990. Site Investigation activities were undertaken to characterize the surface and subsurface conditions at the site, including the extent of soil contamination, groundwater contamination, and flow patterns, and any impacts that the site might be having on the environment. The initial investigation included historical research, geophysical investigation, 44 trenches, 9 soil borings, 9 hand borings, 25 fill / soil sample analyses for target compound and target analyte lists (13 soil borings, 6 trench samples, 4 monitoring well borings, and 2 hand borings), drilling and construction of 12 groundwater monitoring wells, in-site hydraulic

conductivity testing of the competed well, determination of groundwater flow velocities, two groundwater sampling events for chemical analysis, and two surface water and sediment sampling events from Magid Pond and Otter Creek.

#### *2.3.1.1 Remedial Investigation*

A series of monitoring wells were installed at the site to monitor the ground water flow in both the vertical and horizontal directions, and to provide additional information on subsurface geological conditions. However, monitoring well MW-1 was a previously installed well not under a Work Plan approved by the NYSDEC, and was therefore not sampled by Malcolm Pirnie.

In February 1988, Malcolm Pirnie installed three additional monitoring wells, MW-2, MW-3, and MW-4 on the site. Ground water sampling in the wells was performed in March 1988. Three subsequent wells, MW-5, MW-6, and MW-7 were installed in April 1988 and additional ground water samples were collected in June 1988. Between November and December 1990, 12 additional monitoring wells were installed. Six of the 1990 monitoring wells were placed as clusters at the following three locations: MW-9, MW- 14, and MW-15. In two of the clusters, the deep well was drilled into bedrock (MW-9 and MW-15); however, at MW-14, the deep well was screened at a depth just above the overburden/bedrock interface. At the remaining six locations on site, MW-10, MW-11, MW-12, MW-13, MW-16, and MW-17, the wells were constructed as shallow ground water monitoring wells.

Surface water and sediment investigations were conducted by Malcolm Pirnie in May and September 1990, and again in October 1991, to characterize the chemical quality of both on-site and off-site water bodies. One surface water and one sediment sample were collected from each of the two standing water areas located in the northern portion of the site. In addition, one sediment sample and one surface water sample were collected from the ditch located on the east side of Taylor Lane. The samples were analyzed for Target Compound List (TCL) parameters and Target Analyte List (TAL) parameters, landfill leachate parameters (including most conventional water quality parameters as described in the RI), and Total Petroleum Hydrocarbons (TPH). TCL includes the following parameters: volatile organic compounds, acid/base/neutral extractable compounds (semi-volatiles), and pesticides/PCBs (polychlorinated biphenyls). Metals and cyanides are included on the list of TAL parameters. TPH are analyzed individually.

Soil trenching was also conducted during October 1990. Trench locations were selected on the basis of previous geophysical and soil gas survey results. A total of 44 trenches were excavated, and soil samples were collected from eight of the trenches for TCL/TAL and TPH analysis.

Nineteen soil borings ranging from a depth of 8 to 78 feet were drilled in November 1990 to determine the depth of fill material, nature of underlying soils, and depth to bedrock in selected areas. Continuous split-spoon samples were collected from the ground surface to an approximate depth of 10 to 14 feet, with samples continuing every 5-feet thereafter, to a total depth of approximately 5 feet below the fill material. Four borings on the west side of the site were drilled to refusal to confirm the depth to bedrock indicated from geophysical surveys. Supplemental soil sampling was conducted in August 1991 and consisted of seven hand borings: HB-3 through HB-9. Hand borings HB-1 and HB-2 had been previously dug on the eastern berm in January 1991.

Two ground water sampling rounds were conducted at the site under the initial RI. The first round of sampling was performed during January 1991, and the second round on April 8 and 9, 1991. Samples were collected from the 12 newly installed wells, and from two of the three previously installed wells (MW-4, MW-6). As previously indicated, MW-1 was not sampled due to the lack of inspection at the time of its construction. Samples were collected and analyzed for full TCL/TAL parameters, as well as landfill leachate parameters, and TPH.

#### *2.3.1.2 Supplemental Remedial Investigation*

A supplemental remedial investigation (SRI) was conducted to further define the extent of groundwater contamination and to provide information needed to evaluate treatment technology applications for the site. The SRI was performed between December 1991 and May 1992 and included the following activities: drilling and construction of 3 groundwater monitoring wells and 7 piezometers, one groundwater sampling event for chemical analysis, one surface water sample from a low-lying area in the southwest corner of the site, two sediment samples from Pryor Marsh Pond as a representative Westchester County background wetland, a pumping test, and a groundwater treatability study was performed on a well in the fill.

Based on the NYSDEC determination that additional information was needed to fully characterize the site, Malcolm Pirnie performed supplemental field work between January and

April 1992. As part of the Supplemental RI, three additional wells, (MW-11M, MW-14M, MW-19) and seven piezometer clusters, (PZ-1, PZ-2, PZ-3, PZ-4, PZ-5, PZ-6, PZ-7) were installed at pre-determined NYSDEC approved locations.

A total of six fill samples and three sand layer samples were collected and analyzed for cation exchange capacity (CEC) and total organic carbon (TOC) from borings at the locations of wells MW-11M, MW-14M, and PZ-4. The CEC and TOC data were evaluated to determine the capacity of the soils to retard the migration of contaminants from the fill into the ground water.

Three ground water samples from MW-11M, MW-14M, and MW-19, and one surface water sample were collected during the Supplemental RI, and analyzed for full TAL/TCL parameters, oil and grease, bicarbonate, carbonate, and TSS. The purpose of performing these analyses was to evaluate treatment and disposal alternatives during the FS. The ground water samples were also analyzed for 6 NYCRR Part 360 landfill leachate parameters, to provide data used in the comparison of ground water quality data collected during the initial RI (Volume 1). Ground water samples were also collected from newly installed wells MW-11M, MW-19, and MW-14M. One surface water sample was collected in the area of staff gage SG-4, in the southern corner of the site.

The following presents a summary of key RI findings.

#### *2.3.1.3 RI Soil / Waste Sampling Results*

The RI data indicates that the fill has a maximum thickness of 16 feet and contained polychlorinated biphenyls (PCBs), pesticides, heavy metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) at various concentrations throughout the site. RI data indicates that the spatial distribution of volatile compounds in the fill is sporadic and discontinuous.

Volatile compounds detected throughout the site included acetone, ethylbenzene, 4-methyl-2-pentanone, styrene, toluene, xylene, benzene, tetrachloroethene, and methylene chloride. The most frequently detected VOCs were acetone, ethylbenzene, toluene, xylene, benzene, and methylene chloride. VOC concentrations in the fill ranged from <1 ppm to 356 ppm. Five out of 27 samples contained VOCs at concentrations greater than 1 ppm. The greatest concentrations of

total volatile compounds contained in the fill layer were predominantly located near soil boring location MW-11. In addition to MW-11, volatile compounds were also detected in four fill samples (TR-04, TR-13, SB-03, SB-07).

TCL semi-volatile compounds were also detected sporadically over much of the site. The most frequently detected SVOCs were naphthalene, fluoranthene, chrysene, and phenanthrene. Exceptions occur on the southeastern perimeter of the site where two samples, TR-13and TR-15, had no detectable semi-volatile compounds. Naphthalene was detected in the fill at a maximum concentration of 19,000 ug/kg at soil boring location MW-11. In addition to naphthalene, fluoranthene, chrysene, and phenanthrene were also detected. SVOC concentrations in the fill ranged from 1 ppm to 231 ppm. Twenty-two out of 25 samples contained SVOCs at concentrations greater than 1 ppm.

TCL pesticide concentrations were detected throughout the site area at generally low levels. The most frequently detected pesticides were 4,4-DDE, alpha-BHC, gamma-BHC, delta-BHC, alpha chlordane, and gamma-chlordane. The maximum detected concentration of 4,4'-DDD occurred at the location of soil boring, SB-13, at a value of 7,500 ug/kg. Pesticide concentrations ranged from <1 ppm to 16 ppm. Eleven out of 25 samples contained pesticides at concentrations greater than 1 ppm. Some of the previously listed pesticides may originate from the composting operations conducted on the site prior to the RI investigation, when lawn clippings and leaf collections from throughout the community were brought to the site. The common use of pesticides on lawn and garden debris disposed of at the site may account for the low pesticide concentrations detected.

PCBs were not detected in any hand boring samples. Concentrations of PCBs in the soil borings varied with the maximum concentration occurring in soil boring location MW-11 at a value of 120,000 ug/kg. PCB concentrations ranged from non-detect (ND) to 35 parts per million (ppm). Six out of 25 samples contained PCBs at concentrations greater than 1 ppm.

TAL inorganic parameters were detected in the fill throughout the site. The most frequently detected inorganic compounds in the fill are as follows: arsenic, barium, cadmium, chromium, copper, lead, mercury, zinc, and cyanide. Inorganic compounds in the fill were varied as follows:

lead concentrations ranged from 26 to 4,030 ppm, chromium concentrations ranged from <1 to 123 ppm, zinc concentrations ranged from 102 to 9,480 ppm, arsenic concentrations ranged from <1 to 48 ppm. Metals concentrations are generally above typical New York State background compositions throughout the site.

TPH data indicate that detected concentrations were sporadic and relatively low throughout the site. The maximum concentration detected on-site was at soil boring location MW-11, at a level of 26,000 ug/kg.

**Figures 5 through 11** present RI soil sampling results.

#### *2.3.1.4 RI Groundwater Sampling Results*

A total of 14 groundwater samples from 12 monitoring wells and two existing site wells were sampled during each sampling event. The only volatile organic compounds detected in the groundwater were dichloroethene and vinyl chloride. Bis-2-ethylhexylphthalate was the only semi-volatile organic compound detected in the ground water in the lower sand unit and was detected at MW-14D. PCBs were not detected in any of the monitoring wells. Pesticides were detected at MW-11M and MW-14M, at concentrations of 0.270 ppb, and 0.039 ppb, respectively. The inorganic compounds detected in the groundwater were similar to those observed in the leachate. The maximum concentration of total lead occurred in the location of MW-9D, at a concentration of 76.3 ppb, and the maximum concentration of cyanide was found in MW-14M, at a level of 70.8 ppb.

During the RI, the primary volatile organic compounds detected on-site were toluene, xylene, 4-methyl-2-pentanone, and ethylbenzene. The primary semi-volatile organic compounds detected on-site were dibenzofuran, bis-2-ethylhexylphthalate, benzylalcohol, and 2-methylnaphthalene. The most frequently detected pesticides on-site were 4,4'-DDE, alpha-chlordane, and alpha-BHC. PCBs were detected only in monitoring wells MW-10 and MW-17. The primary metals detected on-site were aluminum, arsenic, beryllium, cadmium, chromium, lead, nickel, zinc, and cyanide.

The location of the monitoring wells is presented in **Figure 2**. Monitoring well boring and construction logs are included in Appendix F. The well surveyed elevations are presented in **Figure 4**.

#### *2.3.1.5 RI Leachate Sampling Results*

According to the Record of Decision (ROD), groundwater at this site is typically present within three feet of the surface and saturates most of the fill. The water saturating the fill is referred to as leachate. The concentrations of COCs in leachate was much greater than the concentrations of COCs in groundwater at the site. This may be attributed to the high organic carbon content of the fill as well as a peat layer underlying the fill both of which tend to retard the movement of contaminants thereby retaining constituents resulting in increased concentrations of COCs in leachate.

A total of 12 monitoring wells were sampled for leachate during field investigations and analyzed for the TCL/TAL parameters. TCL volatile compounds were detected during both groundwater sampling events and are concentrated in the vicinity of MW-11. The primary constituents detected included toluene, xylene, 4-methyl-2-pentanone, and ethylbenzene. The concentrations diminish rapidly with increasing distance from MW-11.

TCL semi-volatile compounds were also sporadically detected throughout the site, ranging in concentration from non-detect at MW-6, MW-10, MW-12, MW-14 and MW-15 to 130 ppb in MW-11S. The most frequently detected semi-volatile organic compounds on-site included dibenzofuran, bis-2-ethylhexylphthalate, benzylalcohol, and 2-methylnaphthalene.

Low concentrations of TCL pesticides were detected in the leachate over much of the site. Pesticides were detected in concentrations ranging from non-detect (ND) at MW-6 and MW-15 to 870 ppb 4,4'-DDD at MW-11. The most frequently detected pesticides on-site are the following: 4,4'-DDE, alpha-chlordane, and alpha-BHC.

PCBs were detected only at monitoring wells MW-10 and MW-17. At MW-10, the concentration of Aroclor-1254 was 420 ppb. At MW-17, the concentration was 0.75 ppb. TAL inorganic parameters in the leachate were heterogeneously detected throughout the site; however, the concentration of several individual inorganic compounds were relatively high at several

locations. The following inorganic compounds occurred frequently throughout the site: aluminum, arsenic, beryllium, cadmium, chromium, lead, nickel, zinc, and cyanide.

#### *2.3.1.6 RI Sediment Sampling Results*

The compounds of concern in Magid Pond include PAHs, bis (2-ethylhexyl) phthalate, 4,4'-DDT, DDD and DDE, aldrin, chlordane, endosulfan, sulfate, aluminum, barium, copper, iron, lead, mercury, and vanadium. Several of the compounds identified, particularly, the PAHs, bis (2-ethylhexyl)phthalate, and inorganic compounds, are ubiquitous in the environment, and are typically found in road runoff and stormwater in highly populated areas.

The ecological risk assessment presented in the RI determined that several pesticides and inorganic compounds (heavy metals) were of concern in the sediments in Magid Pond, a wetland area located west of the site. Although contaminant levels were elevated relative to sediment guidelines, it was determined that the contaminants were not directly related to the site. A comparison of sediment data from Magid Pond was made to data from similar aquatic wetlands located in nearby residential and commercial areas. Based on an analysis of the results, it appears that contaminant levels detected in Magid Pond sediments did not reflect input from the site, but rather were indicative of an area-wide condition resulting from anthropogenic non-point sources. Therefore, the FS did not address remediation alternatives for sediments in Magid Pond.

**Table 2** presents the comparative data analysis for sediment samples collected from Magid Pond during the RI.

#### *2.3.1.7 Landfill Gas Sampling Results*

During RI activities, very low levels of volatile gases were detected by the HNu. Background HNu levels appear to equal 0.2 ppm calibration gas equivalents at nearly all times. Occasional HNu readings up to 0.4 equivalents were registered. No Lower Explosive Limit (LEL) readings above zero were registered.

The data did not indicate that the site was off-gassing ionizable volatiles, and the low HNu levels appeared to represent normal background levels and variability. However, the data indicated that potential generation of explosive and combustible gases would need to be further monitored during the implementation of any remedial action at the site.

### 2.3.2 Summary of Record of Decision

The site was used as a landfill between the 1950s and 1970s. Prior to that the land was mined for gravel, and the open pits were reportedly filled with industrial wastes. Incinerator wastes and other industrial wastes were also reportedly disposed at the site. Since the late 1970s, the southern 6 acres of the site was used for composting leaves, tree trunks and wood chips. A limited investigation in 1987 uncovered drums, decomposed drum fragments, and wastes which were determined to be hazardous. Drums which could be removed from the ground were placed in containers on-site for future disposal. The site was placed on the NYSDEC's Registry of Inactive Hazardous Waste Disposal Sites (Site No. 360021) in December 1988 and was designated a "Class 2" inactive hazardous waste site. The Village of Mamaroneck entered into an Order on Consent with the New York State Department of Environmental Conservation (NYSDEC) in August 1989.

A Remedial Investigation (RI) was performed by Malcolm Pirnie, Inc. (MPI) between November 1989 and August 1990 in accordance with plans formally approved by the NYSDEC in April 1990. Site Investigation activities were undertaken to characterize the surface and subsurface conditions at the site, including the extent of soil contamination, groundwater contamination, and flow patterns, and any impacts that the site might be having on the environment.

A supplemental remedial investigation (SRI) was conducted to further define the extent of groundwater contamination and to provide information needed to evaluate treatment technology applications for the site. The SRI was performed between December 1991 and May 1992.

The RI data indicates that the fill has a maximum thickness of 16 feet and contained polychlorinated biphenyls (PCBs), pesticides, heavy metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) at various concentrations throughout the site. RI data indicates that the spatial distribution of volatile compounds in the fill is sporadic and discontinuous.

The only volatile organic compounds detected in the groundwater were dichloroethene and vinyl chloride. Bis-2-ethylhexylphthalate was the only semi-volatile organic compound detected in the ground water in the lower sand unit. PCBs were not detected in any of the monitoring wells.

Pesticides were detected at MW-11M and MW-14M, at concentrations of 0.270 ppb, and 0.039 ppb, respectively. The inorganic compounds detected in the groundwater were similar to those observed in the leachate. The maximum concentration of total lead occurred in the location of MW-9D, at a concentration of 76.3 ppb, and the maximum concentration of cyanide was found in MW-14M, at a level of 70.8 ppb.

According to the ROD, groundwater at this site is typically present within three feet of the surface and saturates most of the fill. The water saturating the fill is referred to as leachate. The concentrations of COCs in leachate was much greater than the concentrations of COCs in groundwater at the site. This may be attributed to the high organic carbon content of the fill as well as a peat layer underlying the fill both of which tend to retard the movement of contaminants thereby retaining constituents resulting in increased concentrations of COCs in leachate.

TCL volatile compounds were detected during both groundwater sampling events and are concentrated in the vicinity of monitoring well MW-11. The primary constituents detected included toluene, xylene, 4-methyl-2-pentanone, and ethylbenzene.

TCL semi-volatile compounds were also sporadically detected throughout the site, ranging in concentration from non-detect at MW-6, MW-10, MW-12, MW-14 and MW-15 to 130 ppb in MW-11S. The most frequently detected semi-volatile organic compounds on-site included dibenzofuran, bis-2-ethylhexylphthalate, benzylalcohol, and 2-methylnaphthalene.

Low concentrations of TCL pesticides were detected in the leachate over much of the site. The most frequently detected pesticides on-site are the following: 4,4'-DDE, alpha-chlordane, and alpha-BHC. PCBs were detected only at monitoring wells MW-10 and MW-17. At MW-10, the concentration of Aroclor-1254 was 420 ppb. At MW-17, the concentration was 0.75 ppb.

TAL inorganic parameters in the leachate were heterogeneously detected throughout the site; however, the concentration of several individual inorganic compounds were relatively high at several locations. The following inorganic compounds occurred frequently throughout the site: aluminum, arsenic, beryllium, cadmium, chromium, lead, nickel, zinc, and cyanide.

The compounds of concern in Magid Pond include PAHs, bis (2-ethylhexyl) phthalate, 4,4'- DDT, DDD and DDE, aldrin, chlordane, endosulfan, sulfate, aluminum, barium, copper, iron,

lead, mercury, and vanadium. Several of the compounds identified, particularly, the PAHs, bis (2-ethylhexyl)phthalate, and inorganic compounds, are ubiquitous in the environment, and are typically found in road runoff and stormwater in highly populated areas. As previously indicated, the presence of these compounds in the Magid Pond / Otter Creek area may not be the result of contamination at the Taylor Lane site, but partially or entirely a result of stormwater runoff from adjacent roads and residential and commercial development.

Full titles for each of the reports referenced below are provided in **Section 8.0 – References**.

The Record of Decision (ROD) published by NYSDEC in December 1993 selected a 6 NYCRR Part 360 landfill cap with a gas venting layer, a low permeability barrier layer, a barrier protection layer, and topsoil, drainage controls, and a contingent groundwater remedy. In addition, the ROD required a deed restriction to limit future use of the site and biannual sampling of monitoring wells to determine if the contingent groundwater remedy was necessary. The following are the components of the selected remedy:

- Construction and maintenance of a cap / cover system in conformance with 6 NYCRR Part 360 to prevent human exposure to remaining contaminated soil/fill and reduce leachate volume by eliminating direct infiltration of precipitation over the landfill mass,
- Construction and maintenance of a perimeter security fence to prevent access and minimize potential human exposure to remaining contaminated soil/fill,
- Imposition of a deed restriction to prohibit the restricted property from ever being used for purposes other than for active and passive recreational use and associated ancillary uses including bathrooms, storage and parking, and prohibit the use of groundwater underlying the property, to prevent exposure to contamination remaining at the site,
- Development and implementation of a Post-Closure Operation and Management Plan for long term management of remaining contamination as required by the deed restriction, which includes plans for: (1) operation and maintenance, (2) monitoring, and (3) reporting, and
- A contingent groundwater containment and treatment system, if groundwater contaminants migrate offsite in quantities detrimental to Magid Pond and Otter Creek.

Construction of the remedy was performed between the spring of 1996 and 1997 pursuant to NYSDEC-approved March 1995 Construction Plans for Site Closure prepared by Wehren-NY.

The Final Construction Completion Certification Report was submitted to NYSDEC on October 9, 1997. In February 1998, A Post-Closure Operations and Management Plan was submitted to the NYSDEC by Wehren-NY (EMcon).

The site remedy requires that a deed restriction be placed on the property to (1) implement, maintain and monitor the Engineering Controls subject to the provisions of the Site Management Plan (SMP); (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; (3) limit the use and development of the site to active or passive recreational uses only; and (4) prohibit the use of groundwater underlying the property. The Deed Restriction for the restricted portion of the property was executed by the Village of Mamaroneck on October 21, 2014 and filed with the Westchester County Clerk on December 11, 2014. The County Recording Identifier number for this filing is 543243384. A copy of the declaration and proof of filing is provided in Appendix A, which includes a survey updated in July 2016.

### 2.3.3 Corrective Measures

Evidence of offsite migration of impacted groundwater and leachate seeps were reported by area residents and observed along the eastern property boundary in the annual post-closure site inspection report in 2003. An investigation was conducted by the NYSDEC in 2004 consisting of the collection and analysis of soil and groundwater samples. Elevated concentrations of Arsenic from flocculants in surface seeps and homeowner sumps along the eastern boundary and elevated levels of leachate indicators were identified in groundwater and surface water sediments to the west.

The investigation concluded that the landfill cap was ineffective at preventing the migration of leachate impacted groundwater from extending beyond the site boundary. Additional investigation and corrective measures were required to prevent the generation and/or migration of leachate was recommended.

#### *2.3.3.1 Corrective Measure No. 1*

A corrective measure (CM1) was designed, implemented, and subsequently evaluated by Woodard & Curran, Inc. (W&C) between 2009 and 2012. CM1 consisted of the design and installation of a passive groundwater recovery well located approximately 100 feet from the

southwest corner of the Site. The objective of CM1 was to establish hydraulic control to prevent offsite leachate migration at the site by depressing the water table.

The work was completed in general accordance with the "Interim Remedial Measures Work Plan" submitted to the NYSDEC by Woodard & Curran (W&C) dated September 2009, and revised in November 2009. The well system design was approved by the NYSDEC on October 17, 2010 and installed in December 2010. Periodic water level monitoring of on-site wells and piezometers was performed through January 2012. The work was documented in the March 2012 "Interim Remedial Measures Report" by W&C, submitted to NYSDEC. The report concluded that the newly installed leachate recovery system had no consequential effect on groundwater/leachate elevations within the landfill nor any discernible influence on hydraulic control of leachate flow. In a letter dated May 2, 2012, the NYSDEC agreed with the general conclusion of the report and indicated that additional study was needed to evaluate site conditions and development of a more effective plan for mitigation the off-site migration of leachate.

#### *2.3.3.2 Corrective Measure No. 2*

Corrective measure (CM2) was designed, implemented, and subsequently evaluated between 2013 and 2016. A passive leachate collection and groundwater depression trench drain system was designed by Woodard and Curran. The initial concept design was submitted to NYSDEC and approved in September 2013 with the final design submitted in October 2013 and approved by the NYSDEC in October 2013. The approved system was constructed in March and April 2014. Installation was performed by WJL Equities, Inc., Eastchester, under the technical oversight of W&C. The Final Construction Completion Report (Taylors Lane Drainage Improvements) for CM2 was prepared by W&C dated October 2016. A copy of that report is included in Appendix F.

The trench drain system runs the length of the northeast property boundary between the site and residences along Greenhaven Road. The purpose of the trench drain was to create and maintain water table depression along the property boundary to address post-closure leachate outbreaks impacting adjacent off-site properties. The passive gravity drain system connects to the Village of Mamaroneck storm sewer system along Shadow Lane and ultimately discharges to

Magid Pond and the tidal estuary beyond. The leachate drainage trench is covered by a maintenance/drainage easement granted to the Village by the property owners.

Investigation and remedial reports are listed in **Section 8.0 – References.**

## 2.4 Post-Remediation Monitoring

Monitoring of the performance of the remedy and overall reduction in contamination on-site and off-site has been performed twice annually since 2011. The most recent inspection was performed in June 2016.

### 2.4.1 Cap Inspections

In June 2016, Chazen and the NYSDEC visually inspected the landfill, including the site perimeter, interior areas, and the off-site drainage improvement easement area abutting the eastern site boundary and associated storm sewer drain outfall to Magid Pond. No evidence of leachate was observed in the drainage improvement easement area, confirmed by the lack of iron staining on the ground surface, absence of excessive ground moisture, and absence of notable odors. Mr. Jeff Monson, resident of 515 Greenhaven Road located along the northern end of the drainage easement, was interviewed during the inspection. Mr. Monson indicated he had not seen any evidence of leachate at grade on his property or in the immediate area since the drainage improvements were completed. Evidence of leachate (iron staining) was observed at the sewer outfall to Magid Pond.

Other general and specific deficiencies noted during the inspection included:

- Compromised site security (open or insecure access gates; inadequate, broken, or missing fencing in several locations);
- Unlocked monitoring and recovery wells; monitoring well PZ-D was knocked over;
- Damaged fencing surrounding gas vents; damaged or leaning gas vents; overgrown vent enclosures;
- Encroachment of soil piles along northern boundary from an adjoining landscaping/nursery business; and,
- Minor shrubbery growth on the landfill cap.

Please see the Site Inspection/Sampling Report, dated June 30, 2016, included in Appendix H of the FER, which is contained in **Appendix E** of this SMP.

### 2.4.2 Leachate Monitoring

Water samples were collected from two storm sewer locations selected by Chazen with concurrence from the NYSDEC. One sample was collected from the downgradient most catch basin along the eastern property boundary where discharge from the recently installed leachate collection trench enters the city storm sewer. One sample was collected from the catch basin on the west side of Taylor Lane immediately prior to the discharge of the City storm sewer outfall pipe into Magid Pond. The laboratory reported that no VOCs, SVOCs, or PCBs were detected in the leachate samples at concentrations that exceed the method detection limit, except MTBE. MTBE was reported at 1.5 µg/l and 3.7 µg/l in the samples collected from MH-1 and Outfall 1, respectively. The reported concentrations of MTBE were less than the applicable standards.

One pesticide, chlordane (and the isomers alpha and gamma chlordane), was detected in both samples. Chlordane was detected in the collection trench sample at 0.18 µg/l and in the discharge sample at 0.079 µg/l. Both concentrations exceed the standard of 0.05 µg/l for discharge to Class GA waters. Chlordane was not specifically identified in the ROD as a compound of concern associated with the on-site waste. Although elevated levels of "pesticides" were noted in the RIFS and the ROD, they were not included in the long-term monitoring plans for the Site. Consequently, no record is available to evaluate historical trends in chlordane or other pesticide concentrations. The maximum concentration of total pesticides in the on-site groundwater was identified in the ROD at 819 µg/l which is significantly greater than the total concentration observed in the June 2016 leachate sample results at 0.212 µg/l. Additionally, chlordane was also identified in near surface and shallow soil samples collected at upgradient off-site locations so may not be considered a site compound of concern.

Iron, manganese, and sodium were reported in both leachate samples at concentrations that exceeded applicable water quality standards. Additionally, the detection limit for selenium, at 11 µg/l, was slightly higher than the applicable standard of 10 µg/l so there is the opportunity that some samples may contain undetected concentrations of Selenium marginally over the applicable

standard. Selenium was not identified as a contaminant of concern for the site in either the soils or groundwater.

The sodium concentration in the trench drain sample was less than the concentration in the outfall sample and the site and surrounding area is known to be influenced by tidal fluctuations. Low to moderately elevated salinity is to be expected. Additionally, the storm sewer discharges directly to a tidal estuary with substantially higher saline water.

Iron and manganese are two of the regulated metals associated with the waste that were identified in the RI/FS and ROD for the site. The maximum concentration of iron in the groundwater at the time of the RI (1992) was reported at 1,102,000 µg/l compared to the maximum of 7,050 µg/l reported in the outfall sample (2016). The maximum concentration of manganese in the groundwater at the time of the RI (1992) was reported at 12,100 µg/l compared to only 554 µg/l reported in the trench drain sample (2016). These identify reductions in the order of 2 to 4 orders of magnitude for each compound.

It has been previously suggested that naturally occurring high iron is endemic to the area water quality. Although not conclusive, the recently collected data from the trench drain and discharge pipe at Magid Pond supports such a supposition. The concentration of iron in the outfall sample at 7,050 µg/l was greater than the concentration in the collection trench at 4,160 µg/l, suggesting that the waters from upgradient areas (and not associated with the site) have higher iron concentrations than the waters being collected in the site drain.

The concentrations of manganese reported in the trench drain and at the outfall were relatively the same at 554 µg/l and 528 µg/l, respectively. This would indicate that the concentration of manganese is elevated locally and not directly related to the waste.

**Table 3** presents the June 2016 post-drainage improvement leachate sampling results.

### 2.4.3 Post-Remediation Groundwater Monitoring

#### *2.4.3.1 Emerging Contaminant Monitoring*

In August 2018, six wells, one manhole, and QA/QC samples were selected for the sampling evaluation of PFAS and 1,4-dioxane for the Taylor Lane Compost Site. At each location, the PFAS samples were taken and packed in a cooler with ice prior to sampling for the 1,4-

dioxane. The bottles for PFAS were kept in a separate cooler from the 1,4-dioxane amber glass jars.

The following locations were selected for PFAS and 1,4-dioxane sampling evaluation:

- Upgradient wells: Well couplet MW-9S/MW-9D are upgradient wells located in a small, wooded area on Greenhaven Road just before Boston Post Road.
- Downgradient wells: Well couplets MW-4S/ MW-4D and MW-2S/ MW-2D are downgradient wells that were selected for this evaluation. Well couplet MW-4S/MW-4D are located on the edge of the site property near residential property 1406 Shadow Lane. Well couplet MW-2S/MW-2D are located on Taylor Lane.
- Manhole: Manhole #1 (MH-1) is located on Shadow Lane between the landfill and the residential property 1406 Shadow Lane.

Several PFAS were detected in multiple wells including the upgradient wells. 1,4-dioxane was detected in wells MW-2S, MW-4D, MW-4S, and MH-1.

The emerging contaminant sampling completed in August 2018 indicated the presence of perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), and 1,4-dioxane levels in multiple monitoring wells, including the upgradient wells at concentrations that exceed the maximum contaminant levels (MCLs) for these compounds in site groundwater. There is no evidence that the landfill is a source of PFOA/PFOS indicating the potential for an upgradient source. As such, groundwater monitoring for this site shall also include sampling and analysis for PFAS and 1,4-dioxane following the same sampling protocols, analyses and sample locations stipulated in the approved Emerging Contaminant Sampling Work Plan (August 2018), and in accordance with NYSDEC's most recent guidance regarding PFAS sampling, analysis and assessment (NYSDEC PFAS Sampling Guidelines, November 2022). The NYSDEC recommends the sampling and analysis for PFAS and 1,4-dioxane during the first year and every third year thereafter.

**Table 4** presents the August 2018 emerging contaminant groundwater sampling results.

#### *2.4.3.2 Post-Remediation Groundwater Monitoring – VOCs and Metals*

In accordance with the approved O&M Plan (dated 1998 with updates) sample analysis reporting is limited to seven volatile organic compounds (vinyl chloride, 1,2 DCE, MTBE, 1,1,1-

TCA, tert-butyl benzene, and chlorobenzene) and six regulated metals (arsenic, cadmium, copper, lead, mercury, and zinc) identified as indicator parameters for the site. Each of these 13 parameters have exhibited concentrations in the groundwater that exceed Part 703 groundwater standards prior to closure of the site and on one or more occasions since. However, the historic data since site closure in 1998 indicates that these parameters have either demonstrated variability around a declining or stable trend.

Most notably, the concentrations of VOCs have declined steadily in all wells and no single VOC has been reported in any sample at a concentration that exceeds applicable groundwater standards since completion of Corrective Measure #2 in 2014. Trace concentrations of tert-butyl alcohol and tert-butylbenzene were reported in the most recent sampling events, but no trend is apparent in these data.

The most recent landfill monitoring event was performed on November 10, 2021. The groundwater analytical data indicated that the inorganic constituent lead was detected at concentrations above the NYSDEC Part 703 Groundwater Standard of 25.0 ug/l in well MW-1S at 167 ug/l. All other inorganic constituents were non-detect or below NYSDEC Part 703 Groundwater Standards. Tert-butyl alcohol (TBA) was detected at a concentration below the NYSDEC Part 703 groundwater guidance value of 20 ug/l in well MW-2S at a concentration of 15 ug/L. Methyl tert-butyl ether (MTBE) was detected at a concentration below the NYSDEC Part 703 groundwater guidance values of 10 ug/l at well MW-2S at a concentration of 3.0 ug/l. The MTBE results were reported with a J flag (Detected below the Reporting Limit but greater than or equal to the Method Detection Limit; therefore, the result is an estimated concentration). The presence of the petroleum hydrocarbon-related constituents MTBE and TBA may be attributable to the upgradient gas station at the comer of Boston Post Road and Taylor Lane.

A spike in the concentration of lead was observed in three shallow monitoring wells (1S, 2S, and 3S) in February 2011. Prior to the February 2011 sampling event, the concentration of lead had been consistently less than 5 µg/l for three years. The cause of the observed spike has not been confirmed but believed to be related to site disturbances occurring in 2010 as part of Corrective Measure #1. Groundwater analytical data from the most recent sampling event which took place in November 2021 indicated that the inorganic constituent lead was detected at

concentrations above the New York State Department of Conservation (NYSDEC) Part 703 Groundwater Standard of 25.0 ug/l in well MW-1S at 167 ug/l. All other inorganic constituents were non-detect or below NYSDEC Part 703 Groundwater Standards.

**Tables 5a and 5b** present summaries of the groundwater monitoring data for VOCs and metals, respectively. **Table 6a** presents the groundwater sampling field data for the November 2021 monitoring event and **Table 6b** presents a summary of the water quality parameters for all of the groundwater monitoring events since 1997.

### 2.4.4 Post-Remediation Landfill Gas Monitoring

The most recent landfill monitoring event was performed on November 10, 2021. Gas vents GV-1 through GV-8 were monitored for percent combustible gas and total organic vapors. Soil gas monitoring was also conducted at predetermined locations (BH-1 through BH-13) along the perimeter of the landfill in order to detect any migrating gases. A MiniRae PID was utilized to monitor VOCs and a Landtec GEM-500 was utilized to monitor percent methane gas (CH4), carbon dioxide (CO2), and oxygen (O2) at gas vents GV-1 through GV-8 and bar holes BH-1 through BH-13. Both the groundwater and soil gas monitoring were performed in accordance with the Post Closure Operation and Maintenance Plan for the Taylor Lane Compost Site prepared by EMCON/Wehran-New York, Inc. in February 1998.

Volatile organic vapors were not detected (0.0 ppm) in any of the gas vents or perimeter bar hole monitoring locations during the November 10, 2021 sampling event. Methane was detected at GV-4 at a concentration of 1.4 % methane gas and GV-5 at a concentration of 5.5 % methane gas.

**Table 7** presents the landfill gas monitoring results for the November 2021 sampling event.

## 2.5 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site are as follows:

### 2.5.1 Groundwater

RAOs for Protection of Public Health

- Prevent direct contact, inhalation, or ingestion of volatile organic compounds in contaminated groundwater.

RAOs for Environmental Protection

- Prevent discharge of impacted groundwater to surface water.

### 2.5.2 Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

## 2.6 Final Remedy

The Site was remediated substantially in accordance with the Record of Decision (ROD) published by the NYSDEC in December 1993. Based on the findings of the RI/FS and the criteria identified in the Feasibility Study for the evaluation of alternatives, the NYSDEC selected a 6 NYCRR Part 360 landfill cap with a gas venting layer, a low permeability barrier layer, a barrier protection layer, and topsoil, drainage controls, and a contingent groundwater remedy to remediate, close and cap the Mamaroneck Taylor's Lane Composting Site. In addition, the ROD required a deed restriction to limit future use of the site and biannual sampling of monitoring wells to determine if the contingent groundwater remedy was necessary. Corrective Measures were designed and implemented between 2009 and 2016 to manage the potential for off-site migration of leachate onto the adjacent properties during high water table conditions.

The following is a summary of the components of the Remedial Action performed at the site and a description of the steps taken to accomplish the remedial action objectives:

- Construction and maintenance of a cap / cover system in conformance with 6 NYCRR Part 360 to prevent human exposure to remaining contaminated soil/fill and reduce leachate volume by eliminating direct infiltration of precipitation over the landfill mass,
- Construction and maintenance of a perimeter security fence to prevent access and minimize potential human exposure to remaining contaminated soil/fill,
- Imposition of a deed restriction to limit land use to active and passive recreational uses and limit the use of groundwater underlying the property, to prevent exposure to contamination remaining at the site,
- Development and implementation of a Post-Closure Operation and Management Plan for long term management of remaining contamination as required by the deed restriction, which includes plans for: (1) operation and maintenance, (2) monitoring, and (3) reporting, and
- Design and installation of a trench drain to manage the potential for off-site migration of leachate onto the adjacent properties during high water table conditions.

The final remedy for the Site included:

Engineering controls include:

- Construction and maintenance of a cover system. The Construction Plans for final cover system for the landfill included a prepared subgrade layer, a gas venting layer consisting of 12-inches of recycled glass, a 40-mil flexible membrane liner, a 24-inch barrier layer, and a 6-inch layer of topsoil. According to W&C's October 2016 Construction Completion Report, documentation indicated that because sufficient quantities of recycled glass was not available at the time of construction, geotextile overlain by geonet was installed as a gas venting layer on the western side of the site. The 12-inch layer of recycled glass overlain by geotextile was installed as a gas venting layer on the eastern side of the site, as per the Construction Plans.
- Construction and maintenance of a stormwater / leachate management system which consists of an on-site system of diversion swales and channels which facilitate diversion of stormwater into culverts for the landfill and an off-site passive leachate diversion/collection and groundwater depression trench drain system. The leachate collection system runs the length of the northeast property boundary between the site and leachate-impacted residences along Greenhaven Road and Shadow Lane. The purpose of

this trench was to create and maintain water table depression along the property boundary to prevent the formation, migration, and/or discharge of leachate onto the adjacent properties during high water table conditions. This passive gravity drain system connects to the Village of Mamaroneck storm sewer system along Shadow Lane and ultimately discharges to Magid Pond and the tidal estuary beyond.

Institutional controls include:

- Imposition of a Deed Restriction to prohibit the restricted property from ever being used for purposes other than for active and passive recreational use and associated ancillary uses including bathrooms, storage and parking, and prohibit the use of groundwater underlying the property, to prevent exposure to contamination remaining at the site,
- Development and implementation of a Site Management Plan for management of remaining contamination as required by the Deed Restriction, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting; and,
- Periodic certification of the institutional and engineering controls listed above.

The site remedy requires that a deed restriction be placed on the property to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and (3) limit the use and development of the site to active or passive recreational uses only. Adherence to these ICs on the site is required by the Deed Restriction and will be implemented under this SMP. ICs identified in the Deed Restriction may not be discontinued without an amendment to or extinguishment of the Deed Restriction.

The IC boundaries are shown on **Figure 12**. These ICs are:

- The restricted property is limited to active and/or passive recreational use;
- ECs must be operated and maintained as specified in this SMP until, and if, terminated;
- ECs must be inspected at a frequency and in a manner defined in the SMP; and,

- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Westchester 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.

The RAOs for Protection of Public Health have been met by preventing direct contact, inhalation, or ingestion of volatile organic compounds in contaminated groundwater. The RAOs for soil have been met by preventing ingestion/direct contact with contaminated soil and preventing inhalation of, or exposure to, contaminants volatilizing from contaminated soil. The RAOs for Environmental Protection are largely met, including significant reductions in migration of contaminants that could result in groundwater or surface water contamination and substantially limit opportunities for impacts to influence biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

The development and implementation of this Site Management Plan is for long term management of the remaining contamination as required by the Deed Restriction, which includes plans for: (1) Engineering and Institutional Controls, (2) media monitoring, (3) operation, maintenance, and monitoring of the engineering controls, and (4) reporting.

## 2.7 Remaining Contamination

During the Remedial Action, drums which could be removed from the ground were placed in containers on-site for future disposal. The remainder of contaminants were left in place below the low permeability cover system / cap.

The potential site related contaminants identified during the RI and SRI include VOCs, SVOCs, PCBs and metals in various media as further described in the following subsections.

The RI data indicates that the fill has a maximum thickness of 16 feet and contained polychlorinated biphenyls (PCBs), pesticides, heavy metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) at various concentrations throughout the site. RI data indicates that the spatial distribution of VOCs in the fill is sporadic and discontinuous. However, the highest concentrations of total VOCs contained in the fill layer were predominantly

located near MW-11. In addition, the maximum concentration of naphthalene (19,000 ug/kg), PCBs (120,000 ug/kg) and TPH (26,000 ug/kg) was detected in monitoring well soil boring MW-11.

**Figures 5 through 11** present RI soil sampling results.

## 3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

### 3.1 General

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

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Deed Restriction;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in **Appendix G)** for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and

- Other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

## 3.2 Institutional Controls

### 3.2.1 Description of Institutional Controls

A series of ICs is required by the ROD to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and (3) limit the use and development of the site to active or passive recreational uses only. Adherence to these ICs on the site is required by the Deed Restriction and will be implemented under this SMP. ICs identified in the Deed Restriction may not be discontinued without an amendment to or extinguishment of the Deed Restriction. The IC boundaries are shown on **Figure 12.** These ICs are:

- The property may be used for active and passive recreational use and associated ancillary uses including bathrooms, storage and parking,
- All ECs must be operated and maintained as specified in this SMP,
- All ECs must be inspected at a frequency and in a manner defined in the SMP,
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Westchester County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department,
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP,
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP,

- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP,
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP,
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP,
- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Deed Restriction,
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on **Figure 12**, and any potential impacts that are identified must be monitored or mitigated, and
- Vegetable gardens and farming on the site are prohibited.

### 3.2.2 Excavation Work Plan

The Excavation Work Plan (EWP) provided in **Appendix G** outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of 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 associated Community Air Monitoring Plan (CAMP) prepared for the site and provided in **Appendix H.** Any disturbance of the site's cover system must be overseen by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (PE) who is licensed and registered in New York

State, or a qualified person who directly reports to a PE who is licensed and registered in New York State.

As-Built Drawings are included in **Appendix I**.

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 G-1** of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Inspections, Reporting and Certifications Plan (see **Section 7.0**).

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

## 3.3 Engineering Controls

### 3.3.1 Low Permeability Cover System / Cap

Exposure to remaining contamination at the site is prevented by a cover system placed over the site. This cover system included a prepared subgrade layer, a gas venting layer consisting of 12-inches of recycled glass, a 40-mil flexible membrane liner, a 24-inch barrier layer, and a 6-inch layer of topsoil. According to W&C's October 2016 Construction Completion Report, documentation indicated that because sufficient quantities of recycled glass was not available at the time of construction, geotextile overlain by geonet was installed as a gas venting layer on the western side of the site. The 12-inch layer of recycled glass overlain by geotextile was installed as a gas venting layer on the eastern side of the site, as per the Construction Plans. 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 gasses to be emitted to the air for dispersion instead of potentially traveling horizontally outside the limits of the landfill.

The closure design and construction considerations have been presented in detail in the following documents:

- Final Engineering Design Report for Closure of the Taylor's Lane Compost Site, prepared by Wehran-New York, Inc., March 1995, revised May 1995.
- Final Bid Documents and Technical Specifications for the Closure of the Taylor's Lane Compost Site, prepared by Wehran-New York, Inc., March 1995, revised May 1995.
- Construction Plans for the Closure of the Taylor's Lane Compost Site, prepared by Wehran-New York, Inc., March 1995, revised May 1995.

**Figures 13 and 14** present the location of the ECs for the site.

### 3.3.2 Stormwater / Leachate Management System

#### *3.3.2.1 On-site Stormwater Management*

According to W&C's October 2016 Construction Completion Report, landfill closure included the installation of an on-site stormwater management system that consists of a system of diversion swales and culverts. According to the construction plans, the final landfill grades were designed to provide diversion of stormwater runoff though swales / channels towards the culverts. The channels were formed by contouring the final cover to collect runoff and facilitate diversion of stormwater into the culverts.

#### *3.3.2.2 Off-site Stormwater / Leachate Management*

According to W&C's October 2016 Construction Completion Report, off-site closure activities included the installation of a French drain in the vicinity of two residential properties. The drain consisted of 3-foot-wide geo-composite drain material covered by 1-foot of topsoil. According to EMCON, this initial French drain system installed along the northeastern property

boundary in the vicinity of the private residences was inadequate at reducing wet conditions and required additional improvements.

Subsequent drainage improvement work was completed in April 2014 as a corrective measure to address leachate outbreaks impacting adjacent properties on Greenhaven Road and Shadow Lane and included the installation of a trench drain below the French drain. The passive leachate diversion/collection and groundwater depression trench drain system runs the length of the northeast property boundary between the site and leachate-impacted residences along Greenhaven Road and Shadow Lane. The purpose of this trench was to create and maintain water table depression along the property boundary to prevent the formation, migration, and/or discharge of leachate onto the adjacent properties during high water table conditions. This trench drain was constructed with perforated pipe surrounded by crushed stone and filter fabric. This passive gravity drain system connects to the Village of Mamaroneck storm sewer system along Shadow Lane and ultimately discharges to Magid Pond and the tidal estuary beyond.

Procedures for the inspection and of this stormwater / leachate management system are provided in the Monitoring and Sampling Plan included in **Section 4.0** of this SMP. Procedures for operating and maintaining the stormwater / leachate management system are documented in the Operation and Maintenance Plan (**Section 5.0** 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. As-Built Drawings are included in **Appendix I. Figures 13 and 14** present the location of the ECs for the site.

### 3.3.3 Criteria For Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10.

#### *3.3.3.1 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 in accordance with this SMP in perpetuity.

#### *3.3.3.2 Stormwater / Leachate Management System*

The stormwater / leachate management system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity.

## 3.4 Inspections and Notifications

### 3.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the Monitoring and Sampling Plan schedule **(Section 4.0).** A comprehensive site-wide inspection will be conducted annually and documentation of the inspection(s) included in the Periodic Review Reports for the Site. The inspections will document current conditions and used to assess if:

- Engineering Controls continue to perform as designed;
- Do these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Deed Restriction;
- 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 Monitoring and Sampling Plan of this SMP (**Section 4.0)**. The reporting requirements are outlined in the Periodic Review Reporting section of this SMP (**Section 7.0**).

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 professional engineer as determined by NYSDEC.

### 3.4.2 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), 6 NYCRR Part 375, and/or Environmental Conservation Law.
- At least 15-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 foundation, structures or Engineering Controls that reduces or has the potential to reduce the effectiveness of an 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 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.

### 3.4.3 Contingency Plan

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

### 3.4.4 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 8** below). Prompt contact should also be made to the Mayor and to the Building Department at the Village of Mamaroneck (refer to **Table 9** below). These emergency contact lists must be maintained in an easily accessible location at the Office of the Mayor and Building Department at the Village of Mamaroneck.

**Table 8 - Emergency Contacts**

| | |
|---|---|
| Medical, Fire, and Police: | 911 |
| One Call Center: | (800) 272-4480<br>(3-day notice required for utility mark out) |
| Poison Control Center: | (800) 222-1222 |
| Pollution Toxic Chemical Oil Spills: | (800) 424-8802 |
| NYSDEC Spills Hotline | (800) 457-7362 |

**Table 9 – Site Contacts**

| | |
|---|---|
| Clerk-Treasurer, Village of Mamaroneck | (914) 777-7722 |
| Village Manager, Village of Mamaroneck | (914) 777-7703 |
| Richard Kampf<br>LaBella Associates, NYC Regional Manager, Director | (917) 280-6364 |

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

### 3.4.5 Map And Directions To Nearest Health Facility

Site Location: Taylor's Lane, Mamaroneck, NY 10543

Nearest Hospital Name: Mount Sinai Medical Center

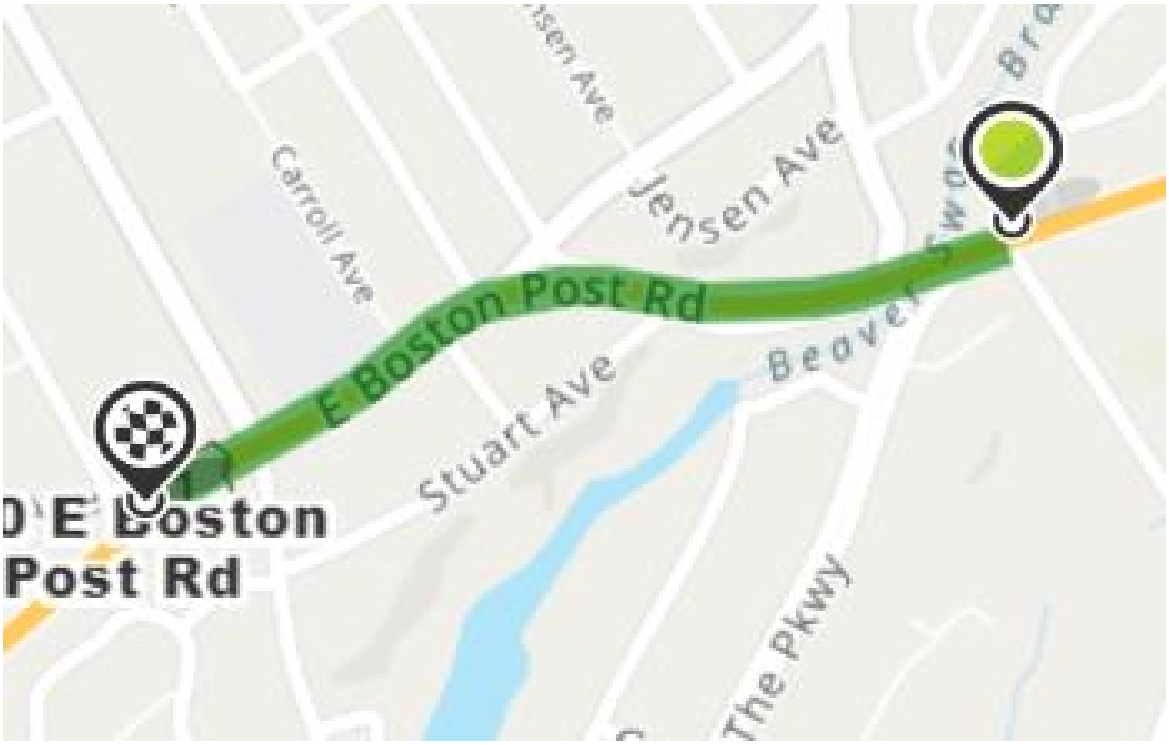
Hospital Location: 620 E Boston Post Rd, Mamaroneck, NY 10543

Telephone: (914) 885-2525

Directions to the Hospital:

1. Start out going **northwest** on Taylors Ln toward E Boston Post Rd/US-1 S/US-1 N.
   Then 0.00 miles
2. Turn **left** onto E Boston Post Rd/US-1 S.
   Then 0.50 miles
3. 620 E BOSTON POST RD is on the **right**.

**Map Showing Route from the site to the Hospital:**




### 3.4.6 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 in **Table 8**. The list will also be posted prominently at the offices of the Village of Mamaroneck Town Clerk-Treasurer's office 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 NYS Route 1 to the north.

# 4.0 MONITORING AND SAMPLING PLAN

## 4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in Section 4.4, Monitoring Quality Assurance / Quality Control.

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

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

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

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in **Section 7.0** of this SMP.

## 4.2 Site – Wide Inspection

Site-wide inspections will be performed at a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in **Appendix J** – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection, and;
- Confirm that site records are up to date.

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

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Deed Restriction;
- Achievement of remedial performance criteria, and;
- If site records are complete and up to date.

Reporting requirements are outlined in **Section 7.0** of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential

to reduce the effectiveness of ECs in place at the site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Any failure of or significant damage to the landfill cap/cover system shall be inspected by a NYS registered professional engineer experienced in landfill design/construction. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

Site inspections shall include the following: landfill cap, all site monitoring wells and piezometers, all gas wells/vents and enclosures, perimeter fence and gate(s), vegetation on cap, leachate drainage improvement area and outfall to Magid Pond. Inspections will be performed by individuals familiar with multi-layered cover systems to determine the need to repair the final cover and vegetation. The cover system will be inspected to observe for erosion, damage to vegetation, stability, and settlement. The cover will 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 will be inspected for stability and insect screens shall be checked for blockages. The monitoring wells will also be inspected for any damage and their condition recorded. 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.

### 4.3 Media Monitoring and Sampling

Monitoring of the performance of the remedy and overall reduction in contamination on-site and off-site has been performed twice annually since 2011. Going forward, inspections and groundwater and gas vent monitoring will be performed annually on a reverse sliding-quarter basis (every 3 quarters) beginning with the 4th quarter of 2023 (Q4 2023), followed by the 3rd quarter of 2024 (Q3 2024), 2nd quarter of 2025 (Q2 2025), 1st quarter of 2026 (Q1 2026), and starting the cycle once again in the 4th quarter of 2027 (Q4 2027), repeating until the sampling frequency changes or is no longer required by the NYSDEC.

Samples shall be collected from the monitoring wells, the outfall of the leachate collection drain prior to discharge to the Village storm sewer system and the outfall of the storm sewer system on a routine basis. Sampling locations, required analytical parameters, and schedule are provided in **Table 10** – Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

**Table 10 – Sampling Requirements and Schedule**

| **Sampling Location** | **Analytical Parameters** | | | | | **Schedule** |
|---|---|---|---|---|---|---|
| | TCL VOCs incl TBA (EPA Method 8260) | TAL Metals plus Mercury (EPA Methods 6010/ 7470) | TCL Pesticides (EPA Method 8081) | PFAS (EPA Method 1633) and 1,4-dioxane (EPA Method 8270 SIM) | % lower explosive limit (LEL) for methane and parts per million (ppm) of hydrogen sulfide, | |
| Monitoring Wells MW-2S, MW-2D, MW-4S, MW-4D, MW-9S, MW-9D, MW-15D<br>Leachate collection system outfall<br>Storm sewer system outfall | X | X | X | X | | Annually, beginning with Q4 2023, followed by Q3 2024, Q2 2025, Q1 2026, and Q4 2027, repeating until the sampling frequency changes or is no longer required by the NYSDEC.<br>Sampling for PFAS and 1,4-dioxane during the first year (Q4 2023) and every third year thereafter. |
| Gas Vents GV-1 through GV-8 | | | | | X | Annually, coinciding with water sampling frequency |

Detailed sample collection and analytical procedures and protocols are provided in the following sections.

### 4.3.1 Groundwater Monitoring

#### *4.3.1.1 Monitoring Well Network and Laboratory Analysis*

Samples shall be collected from the monitoring wells and gas vents on a routine basis. Sampling location, required analytical parameters, and schedule are provided in **Table 10** - Sampling Requirements and Schedule. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Groundwater monitoring will be performed to assess the performance of the remedy. The groundwater sampling will be performed annually on a reverse sliding-quarter scale (every 3 quarters) beginning with the 4th quarter of 2023 (Q4 2023), followed by the 3rd quarter of 2024 (Q3 2024), 2nd quarter of 2025 (Q2 2025), 1st quarter of 2026 (Q1 2026), and starting the cycle once again in the 4th quarter of 2027(Q4 2027), repeating until the sampling frequency changes or is no longer required by the NYSDEC. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The network of monitoring wells has been installed to monitor upgradient, on-site, and downgradient groundwater conditions at the site as presented in **Figure 2**. The monitoring program will account for seasonal variations in groundwater quality, provide coverage to differentiate between potentially changing conditions associated with the site and background conditions, and assess the impacts of leachate from the site on the storm sewer outfall to Magid Pond.

Groundwater sampling will be discontinued at monitoring wells MW-1S, MW-1D, MW-3S and MW-3D. Groundwater sampling will continue at MW-2S and 2D to monitor the downgradient western property boundary. Groundwater sampling will also be performed at MW-4S and MW-4D to monitor the downgradient eastern property boundary, MW-15D to monitor groundwater quality in the landfill, and MW-9S and MW- 9D to monitor groundwater conditions upgradient of the landfill.

Groundwater samples will be analyzed for TCL VOCs (Target Compound List Volatile Organic Compounds), including tert-butyl-alcohol (TBA) via USEPA Method 8260; TCL Pesticides via USEPA Method 8081; and TAL (Target Analyte List) Metals plus Mercury via USEPA Methods 6010/7470.

The sample analyses and target compound/analyte lists specified here can be re-evaluated following at least three sampling events.

Groundwater samples will be analyzed for PFAS and 1,4-dioxane during the first year (Q4 2023) and every third year thereafter following the same sampling protocols and sample locations as stipulated in the approved Emerging Contaminant Sampling Work Plan (August 2018). Groundwater samples will be analyzed for PFAS via USEPA Method 1633 and 1,4-dioxane via USEPA Method 8270 SIM. Field sampling for PFAS will follow the appropriate procedures provided in NYSDEC's most recent guidance regarding PFAS sampling, analysis and assessment (NYSDEC PFAS Sampling Guidelines, April 2023).

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 A data deliverable package for the routine parameters sampling events. Refer to **Section 4.4**, Monitoring Quality Assurance / Quality Control, for analytical methods, holding times and quality assurance/quality control procedures.

The groundwater monitoring program, including the number of monitoring wells that are sampled, will be re-evaluated, after three annual sampling events and reduced as approved by the NYSDEC. The groundwater monitoring program may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

Deliverables for the groundwater monitoring program are specified in **Section 7.0.**

#### *4.3.1.2 Monitoring and Sampling Protocol*

All sampling activities will be recorded in a field book and associated sampling log as provided in **Appendix J** - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the following sections.

##### 4.3.1.2.1 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 4.4** 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, conductivity, oxidation-reduction potential (ORP) and turbidity. All pertinent groundwater sampling information will be recorded on a Groundwater Services Field Log form (refer **Appendix J** 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:

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

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 11** 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.

#### 4.3.1.2.2 Water Level Measurements

Prior to sampling and purging, static water heights will be measured using a water level indicator to determine the standing water column height. 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. A groundwater flow contour map will be generated for each monitoring event.

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.

4.3.1.2.3 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 interval 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 collection, handling, and shipping of PFAS and 1,4-dioxane samples will be performed consistent with NYSDEC's most recent guidance regarding PFAS sampling, analysis and assessment (NYSDEC PFAS Sampling Guidelines, April 2023).

The purge water from the monitoring wells will be discharged to the ground surrounding the well and allowed to infiltrate into 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 4.3.1.6** of this SMP.

4.3.1.2.4 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 collection, handling, and shipping of PFAS and 1,4-dioxane samples will be performed consistent with the NYSDEC's most recent guidance regarding PFAS sampling, analysis and assessment (NYSDEC PFAS Sampling Guidelines, April 2023).

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, and then in decreasing order of the volatility of the parameters being analyzed.

In order to ensure 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.

<u>General Sampling:</u>

- Don't remove caps until the actual sampling time and only long enough to fill the container.
- Identify every container by filling out the label with all the required data.
- Fill all containers completely without overfilling.
- 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.
- 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.
- Complete the Groundwater Services Field Log and Chain of Custody Record forms.
- 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:

- 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.
- 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.
- Fill sample container slowly to minimize aeration of the sample, until a curved meniscus is observed over the bottle rim.

- 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.
- 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.
- 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.
- 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 4.3.1.6 of this SMP.
- The collection, handling, and shipping of PFAS and 1,4-dioxane samples will be performed consistent with the NYSDEC's most recent guidance regarding PFAS sampling, analysis and assessment (NYSDEC PFAS Sampling Guidelines, April 2023).

4.3.1.2.5 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.

4.3.1.2.6 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. The collection, handling, and shipping of PFAS and 1,4-dioxane samples will be performed consistent with the NYSDEC's most recent guidance regarding PFAS sampling, analysis and assessment (NYSDEC PFAS Sampling Guidelines, April 2023).

#### *4.3.1.3 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:

- Remove any excess material remaining on the equipment, as applicable.
- 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.
- Rinse the equipment with copious amounts of tap water.
- Rinse the equipment with deionized or distilled water.
- Place clean equipment on clean polyethylene sheeting or wrap in aluminum foil if the equipment will not be immediately used for sampling.
- New disposable gloves will be worn when cleaning and handling the equipment to avoid contamination.
- 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.

#### *4.3.1.4 Monitoring Well Repairs, Replacement, and Decommissioning*

If biofouling or silt accumulation occurs in the 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. 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 4.3.1.6** of this SMP.

#### *4.3.1.5 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 4.3.1.6.** 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 4.3.1.6** of this SMP.

#### *4.3.1.6 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 indicated 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 into 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 6 NYCRR 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 and identified in the periodic review report.

### 4.3.2 Stormwater / Leachate Management System Monitoring

The surface water drainage system composed of on-site diversion swales and culverts and an off-site passive leachate collection system will be inspected on an annual basis. Inspections will be performed by individuals familiar with multi-layered cover systems.

The outfall of the leachate collection drain will be sampled prior to discharge to the Village storm sewer system and the outfall of the storm sewer system will be sampled prior to discharge to Magid Pond and analyzed for TCL VOCs (Target Compound List Volatile Organic Compounds), including tert-butyl-alcohol (TBA) via USEPA Method 8260; TCL Pesticides via USEPA Method 8081; and TAL (Target Analyte List) Metals via USEPA Method 6010. Leachate collection drain samples will also be

analyzed for PFAS via USEPA Method 1633; and 1,4-dioxane via USEPA Method 8270 SIM beginning with Q4 2023, and every third year thereafter.

The sample analyses and target compound/analyte lists specified here can be re-evaluated following at least three sampling events.

The laboratory analyses will be performed by a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory. The laboratory will prepare an ASP Category A data deliverable package for the routine parameters sampling events. Refer to **Section 4.4**, Monitoring Quality Assurance / Quality Control, for analytical methods, holding times and quality assurance/quality control procedures.

### 4.3.3 Landfill Gas Monitoring

Landfill 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. Monitoring frequency adjustments may need to be made in the future depending on any changes in the observed monitoring levels, or use of the site.

Landfill gas monitoring will be performed annually at gas vents GV-1 through GV-8 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. **Figure 2** presents the locations of gas vent sampling locations.

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. At each point, the levels of explosive gasses (% LEL,) hydrogen sulfide, VOCs, and methane (CH4) will be measured and recorded on an Explosive Gas Sampling Form (refer to **Appendix J** for blank form).

Landfill gas concentrations will also be measured below grade by advancing a slam bar or equivalent to a depth of approximately 2 feet below grade. Slam bar monitoring will be limited to gas vent locations where any measurable levels of VOCs (PID) or methane (CH4) are found. 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.

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 the LEL in the subsurface or ambient air at the property boundary, the results will be reported to the NYSDEC within three 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 6 NYCRR 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.

## 4.4 Monitoring Quality Assurance / Quality Control

### 4.4.1 General

All sampling and analyses will be performed following the quality assurance / quality control procedures described in this **Section 4.4** 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 375 and NYSDEC ASP requirements.
- In the event NYSDEC / NYSDOH is making decisions based on the sampling data, 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).

### 4.4.2 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, surface water and sediment 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 during sampling activities for every twenty 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 4.4.**

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.

### 4.4.3 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 for groundwater, surface water and equipment blank water sample (when applicable) to be analyzed are summarized in **Table 11.**

**Table 11**

**Analytical Requirements for Containers and Preservatives for Groundwater Samples**

| PARAMETER | CONTAINER | TOP | PRESERVATIVE | COMMENTS |
|---|---|---|---|---|
| TCL VOCs, including TBA, via USEPA Method 8260 (full list) | 2-40 ml Glass Vials | Teflon Lined Septum | Cool, 4°C HCL to pH <2 (Preserved) | None |
| TAL Metals, except Mercury, via USEPA Method 6010 | 250 ml or 500 ml Plastic or Glass | Poly | $HNO_3$ to pH <2 | None |
| Mercury via USEPA Method 7470A | 250 ml or 500 ml Plastic or Glass | Poly | $HNO_3$ to pH <2 | None |
| TCL Pesticides via USEPA Method 8081 | 120 ml Glass | | None | None |
| PFAS via USEPA Method 1633 | 500ml Plastic | | None | None |
| 1,4-dioxane via USEPA Method 8270 SIM | 2-250 ml Glass | | None | None |

### 4.4.4 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 and surface water samples. The following paragraphs describe how these samples are prepared and collected.

Equipment Blank: After the equipment has been decontaminated and is ready for sampling, pour laboratory provided deionized or distilled water over the equipment and then into the sample container(s). 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.

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, surface water or sediment 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 or surface 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.

In addition to the above, field sampling for PFAS will follow the appropriate procedures provided in NYSDEC's "Guidelines for Sampling and Analysis of PFAS" for soil, sediment and solids, groundwater, and surface water. QA/QC for PFAS and 1,4-Dioxane samples will include the following:

- Samples will immediately be placed in a cooler maintained at 4±2°Celsius using ice
- Gloves will be changed between sample and blank collections
- One field duplicate will be collected for every sample batch, with a minimum of 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- One MS/MSD sample will be collected for every batch, with a minimum of 1 MS/MSD per 20 samples. The MS/MSD will consist of an additional two samples at a given location and identified on the COC
- Category B data deliverable and an electronic data deliverable will be requested.

### 4.4.5 Laboratory Reporting and Data Validation

The laboratory will prepare ASP Category A data deliverable packages for the laboratory analyses of the groundwater/surface water/leachate collected during the sampling events for the routine parameters. The laboratory will prepare ASP Category B data deliverable packages for the laboratory analyses of the aqueous samples collected during the sampling events for the routine parameters when necessary to support decision making regarding changes to sample precedures. 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 6 NYCRR 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.

In the event laboratory data is subject to a DUSR, the EDD package submitted to NYSDEC EIMS for uploading to EQuIS will contain the validated data.

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. 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.

## 4.5 Monitoring Reporting Requirements

Forms and any other information generated during regular monitoring events and inspections will be kept on file at the Village of Mamaroneck Town Clerk-Treasurer's Office. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be subject to approval by the NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Inspections, Reporting and Certifications Plan (**Section 7.0**) of this SMP.

All monitoring results will be reported to the NYSDEC on a periodic basis in the Periodic Review Report (i.e., Post-Closure Monitoring Report). A letter report will also be prepared and submitted to 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, surface water, leachate, soil, sediment, landfill gas, etc.);

- Copies of all field forms completed (e.g., well sampling logs, surface water 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, surface water, leachate, soil, sediment, landfill gas, etc.); and,
- Tabulated results, a copy of the 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 is summarized in **Table 12** below.

**Table 12 - Schedule of Monitoring / Inspection Reports**

| Task | Reporting Frequency* |
|---|---|
| Groundwater/Leachate/Surface Water Sampling | Annually (letter report) and summarized in PRR |
| Landfill Gas Monitoring | Annually (letter report) and summarized in PRR |
| Annual Site-Wide Inspections | Every three (3) years, or as otherwise determined by the NYSDEC (Periodic Review Report) |
| Periodic Review Report | Every three (3) years, or as otherwise determined by the NYSDEC |

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

# 5.0 OPERATION AND MAINTENANCE PLAN

## 5.1 General

This Operation and Maintenance Plan provides a brief description of the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site. This Operation and Maintenance Plan:

- Includes the procedures necessary to allow individuals unfamiliar with the site to monitor and maintain the cover / cap and stormwater / leachate management system;
- Will be updated periodically to reflect changes in site conditions or the manner in which the cover / cap and stormwater / leachate management systems are monitored and maintained.

## 5.2 Engineering Control Performance Criteria

### 5.2.1 Low Permeability Cover System/Cap Description

The cover system included a prepared subgrade layer, a gas venting layer consisting of 12-inches of recycled glass, a 40-mil flexible membrane liner, a 24-inch barrier layer, and a 6-inch layer of topsoil. According to the Woodard and Curran's October 2016 Construction Completion

Report, documentation indicated that because sufficient quantities of recycled glass was not available at the time of construction, geotextile overlain by geonet was installed as a gas venting layer on the western side of the site. The 12-inch layer of recycled glass overlain by geotextile was installed as a gas venting layer on the eastern side of the site, as per the Construction Plans.

### 5.2.2 Stormwater / Leachate Management System Description

The primary on-site stormwater / leachate management system for the landfill consists of a passive leachate diversion/collection and groundwater depression trench drain system runs the length of the northeast property boundary between the site and leachate-impacted residences along Greenhaven Road and Shadow Lane. The purpose of this trench was to create and maintain water table depression along the property boundary to prevent the formation, migration, and/or discharge of leachate onto the adjacent properties during high water table conditions. This passive gravity drain system connects to the Village of Mamaroneck storm sewer system along Shadow Lane and ultimately discharges to Magid Pond and the tidal estuary beyond.

## 5.3 System Monitoring and Routine Maintenance

### 5.3.1 Low Permeability Cover System / Cap

The integrity of the low permeability cover system/cap, including cover materials, vegetative cover, slopes, groundwater monitoring wells, and gas venting structures shall be maintained in perpetuity unless approval is given by the NYSDEC to eliminate some or all of the post closure maintenance requirements.

Repairs will be performed as necessary using appropriate lightweight equipment and/or tools, to ensure the integrity of the landfill's final cover. The vegetation and topsoil components of the final cover may require maintenance over the post-closure period.

Vegetative maintenance will be performed as required, in response to the routine site inspections. Mowing will be performed as required to prevent the establishment of deep-rooted vegetation and prior to inspections. Areas that do not have a good vegetative cover shall be seeded and mulched. The site will be maintained for active and passive recreational use and associated ancillary uses including bathrooms, storage and parking.

Any repairs needed should be completed as soon as practicable 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 (burrows), a licensed pest control company should be contacted to remove the nuisance animal. Any obstructions found within the surface water drainage swales shall be removed. Any obstruction or damage to surface water drainage swales shall be repaired. The protective structures around the gas vents must be repaired to protect the gas vents from vandalism. Any damage to a monitoring well, gas venting structure, fence or other structure shall be repaired, or the structure replaced.

### 5.3.2 Site Security Fencing

The boundary security fence surrounding the site shall be completed, maintained, and inspected going forward. The operations of the north-adjacent nursery / garden center, including equipment and a soil pile, is presently encroaching onto the Site (Lot 42). This matter will be resolved prior to completing the perimeter fence installation. There will be two access gates which will be secured with combination locks.

### 5.3.3 Stormwater / Leachate Management System

The stormwater / leachate management system needs to undergo regular inspection and maintenance in order to function properly and at design capacity. The outfall of the leachate collection drain prior to discharge to the Village storm sewer system and the outfall of the storm sewer system prior to discharge to Magid Pond should be visually inspected annually to confirm that there is no accumulation of materials causing a blockage of flow. Any significant accumulation of silt, sediments, or litter in the drainage system that may affect the performance of the system shall be removed. Repair, including cleaning, revegetation and regrading, will be performed as necessary by using appropriate lightweight equipment and/or tools. Maintenance may be required until the firm establishment of drainage system vegetation.

A Maintenance Inspection Form (refer to **Appendix J** for blank form) shall be completed to document inspection and maintenance of the stormwater / leachate management system. This form

provides a summary of the inspection requirements, 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.

A blank Maintenance Inspection Form for Stormwater / Leachate Management System is included in **Appendix J.**

## 5.4 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 / leachate management system has been reported or an emergency occurs that is deemed likely to affect the operation of the systems.

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

### 5.4.1 Monitoring Schedule For Low Permeability Cover System / Cap

Inspections of the landfill cover system shall be conducted annually during water quality and landfill gas monitoring events, and after major storm events. Inspection observations shall be recorded on the Site-Wide Inspection Form (refer to **Appendix J** 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.

### 5.4.2 Monitoring Schedule For Stormwater / Leachate Management System

In general, the frequency of inspection of each stormwater / leachate management system component shall occur annually and after a major storm event, unless otherwise noted. Major storm events are considered to be those that result in more than 2.8 inches of rain falling within a single 24-hour period (a 1-year storm event) pursuant to the Westchester County Stormwater Management Planning Manual.

## 5.5 Monitoring and Maintenance Reporting Requirements

Maintenance reports and any other information generated during regular operations at the site shall be kept on-file at the Village of Mamaroneck Town Clerk-Treasurer'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 7.0** of this SMP.

### 5.5.1 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;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

### 5.5.2 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).

# 6.0 PERIODIC ASSESSMENTS/EVALUATIONS

## 6.1 Climate Change Vulnerability Assessment

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

This section provides a summary of vulnerability assessments that will be conducted for the site during periodic assessments, and briefly summarizes the vulnerability of the site and/or engineering controls to severe storms/weather events and associated flooding. These assessments should include, but not be limited to, a discussion of potential vulnerabilities such as the following:

- Flood Plain: Identify whether the site is located in a flood plain, low-lying or low-groundwater recharge area.
- Site Drainage and Storm Water Management: Identify areas of the site which may flood during severe rain events due to insufficient groundwater recharge capabilities or inadequate storm water management systems.
- Erosion: Identify any evidence of erosion at the site or areas of the site which may be susceptible to erosion during periods of severe rain events.
- High Wind: Identify areas of the site and/or remedial system which may be susceptible to damage from the wind itself or falling objects, such as trees or utility structures during periods of high wind.

## 6.2 Remedial System Optimization

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

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

- A new and applicable remedial technology becomes available.

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

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

# 7.0 INSPECTIONS, REPORTING, AND CERTIFICATIONS PLAN

## 7.1 Site Inspections

### 7.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in **Section 4.0** Site Monitoring Plan and **Section 5.0** Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection (**Section 4.2**) will be conducted annually. Inspections of remedial components will also be conducted whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

### 7.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system (refer to **Appendix J** for blank Maintenance Inspection Form Stormwater / Leachate Management System). Additionally, a general site-wide inspection form will be completed during the site-wide inspection (refer to **Appendix J** 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 to the NYSDEC in accordance with the requirements of **Table 12** and summarized in the Periodic Review Report.

### 7.1.3 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;
- Site management 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.

## 7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the NYSDEC beginning six (6) months after the Site Management Plan is approved. After submittal of the initial Periodic Review Report, PRRs shall be submitted every third year thereafter to the NYSDEC or at another frequency as may be required by the NYSDEC. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in **Appendix A** – Deed Restriction. The report will be prepared in accordance with the NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment, and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.

- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.

- Identification of any wastes generated during the reporting period, along with waste characterization data, manifests, and disposal documentation.

- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.

- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends and a groundwater elevation contour map for each gauging event.

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. The data shall be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

- A site evaluation, which includes the following:

  - The compliance of the remedy with the requirements of the site-specific ROD;

  - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;

  - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;

  - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan;

  - Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the ROD; and

  - The overall performance and effectiveness of the remedy.

## 7.3 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

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

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the deed restriction,*
- *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, Daniel Noll, P.E. of LaBella Associates, D.P.C., am certifying as Owner's/Remedial Party's Designated Site Representative for the site.*

*I certify that the New York State Education Department has granted a Certificate of Authorization to provide Professional Engineering services to the firm that prepared this Periodic Review Report.*

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

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

### 7.4 Corrective Measures Work Plan

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

### 7.5 Remedial Site Optimization Report

If an RSO is to be performed (see **Section 6.2**), upon completion of an RSO, an RSO report must be submitted to the NYSDEC project manager for approval. A general outline for the RSO report is provided in **Appendix K**. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC project manager and the NYSDOH project manager.

## 8.0 REFERENCES

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New York State Department of Environmental Conservation.1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

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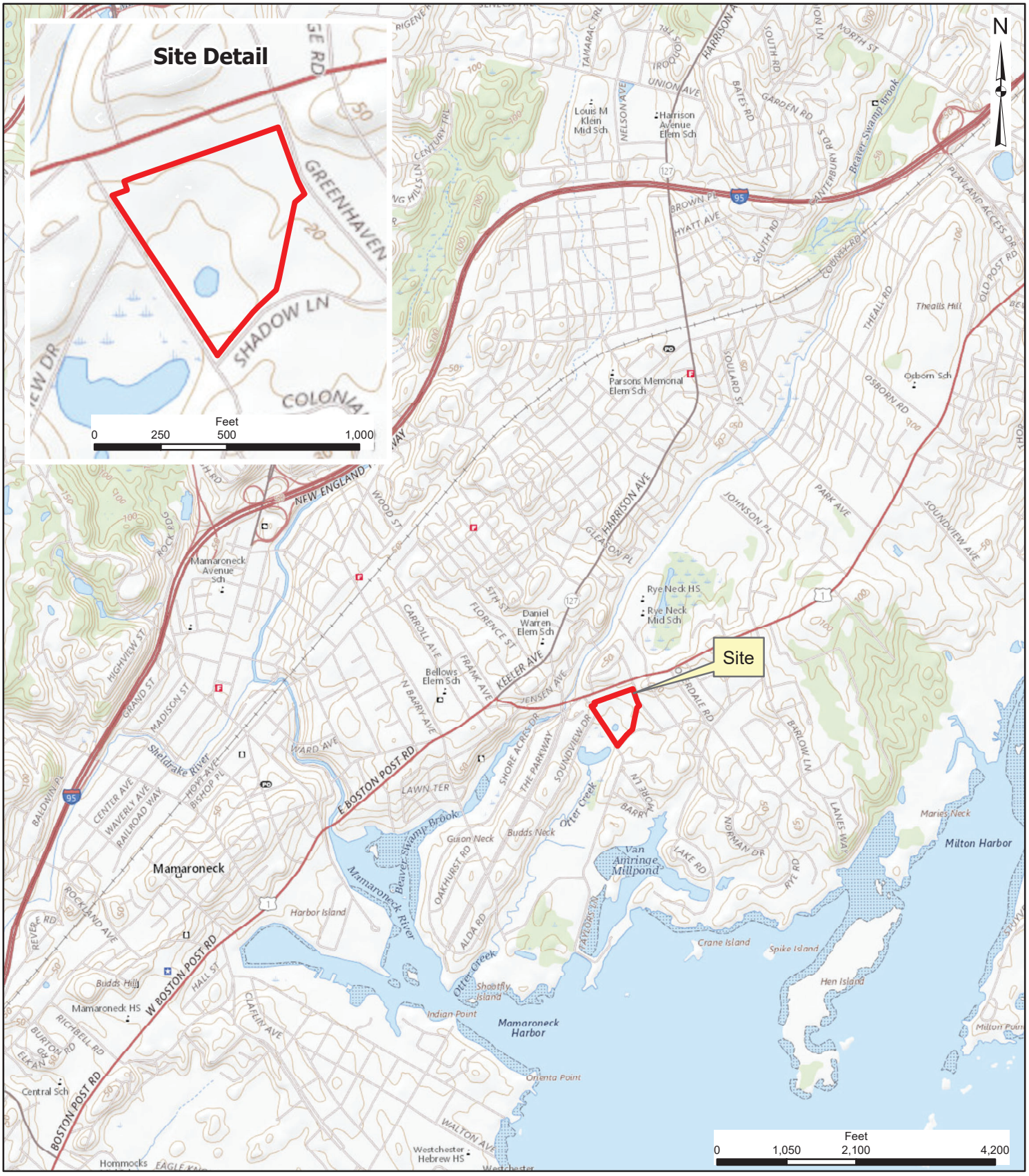
# FIGURES





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***Taylors Lane Landfill Site***

# Figure 1: Site Location Map

Taylors Lane
Village of Mamaroneck, Town of Rye
Westchester County, NY

Source: Westchester County 2015 Tax Parcel Dataset; NYS Department of Transportation 2008 Roads Dataset

| | |
|---|---|
| Drawn: | MO |
| Date: | 8/6/2020 |
| Scale: | 1 inch equals 2,000 feet |
| Project: | 41629 |
| Figure: | 1 |

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*Taylors Lane Landfill Site*

# Figure 2: Site Layout Map

Taylors Lane
Village of Mamaroneck, Town of Rye
Westchester County, NY

Source: Westchester County 2015 Tax Parcel Dataset; NYS Department of Transportation 2008 Roads Dataset

| | |
|---|---|
| Drawn: | MO/SF |
| Date: | 9/29/2020 |
| Scale: | 1 inch equals 100 feet |
| Project: | 41629 |
| Figure: | 2 |

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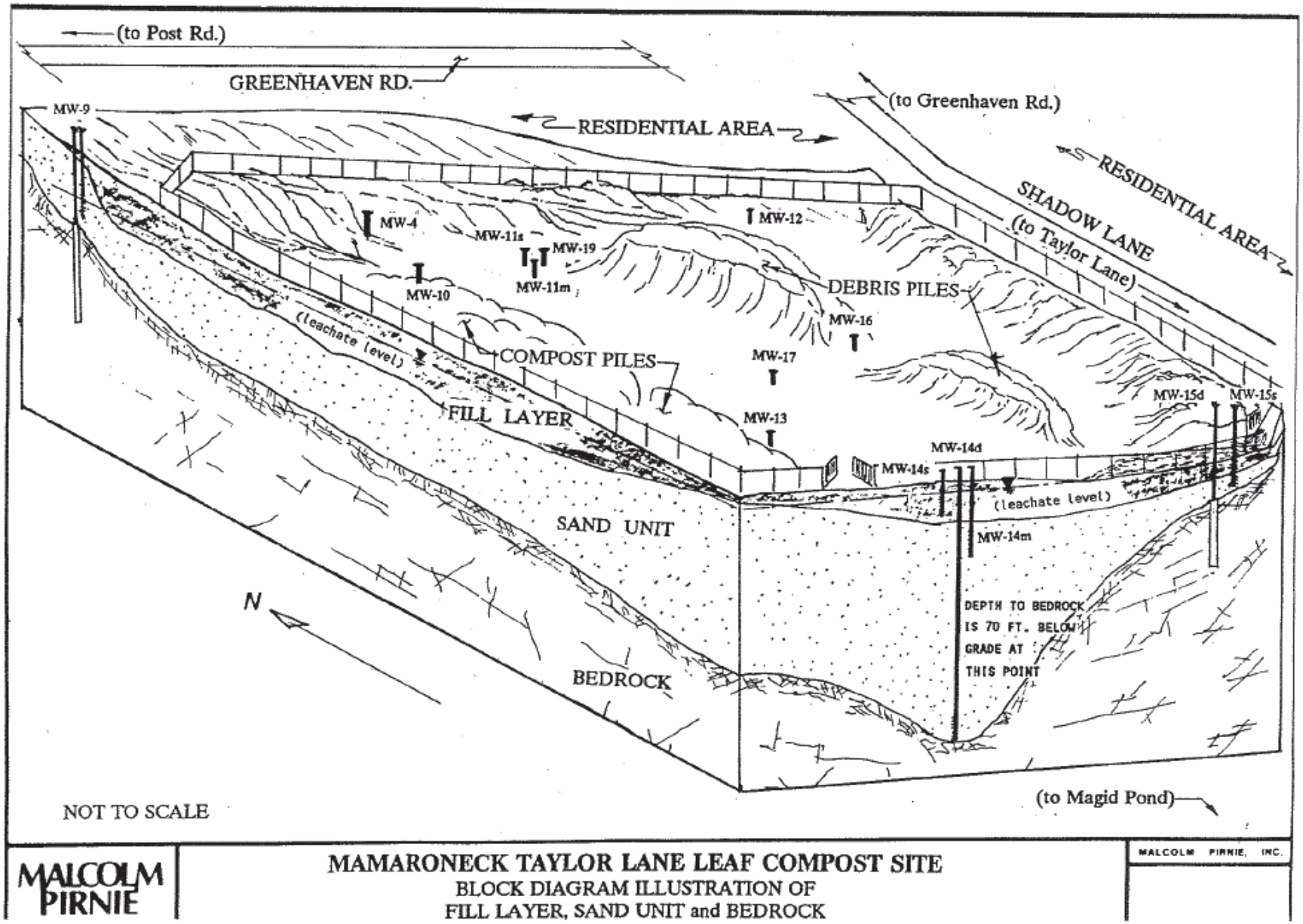
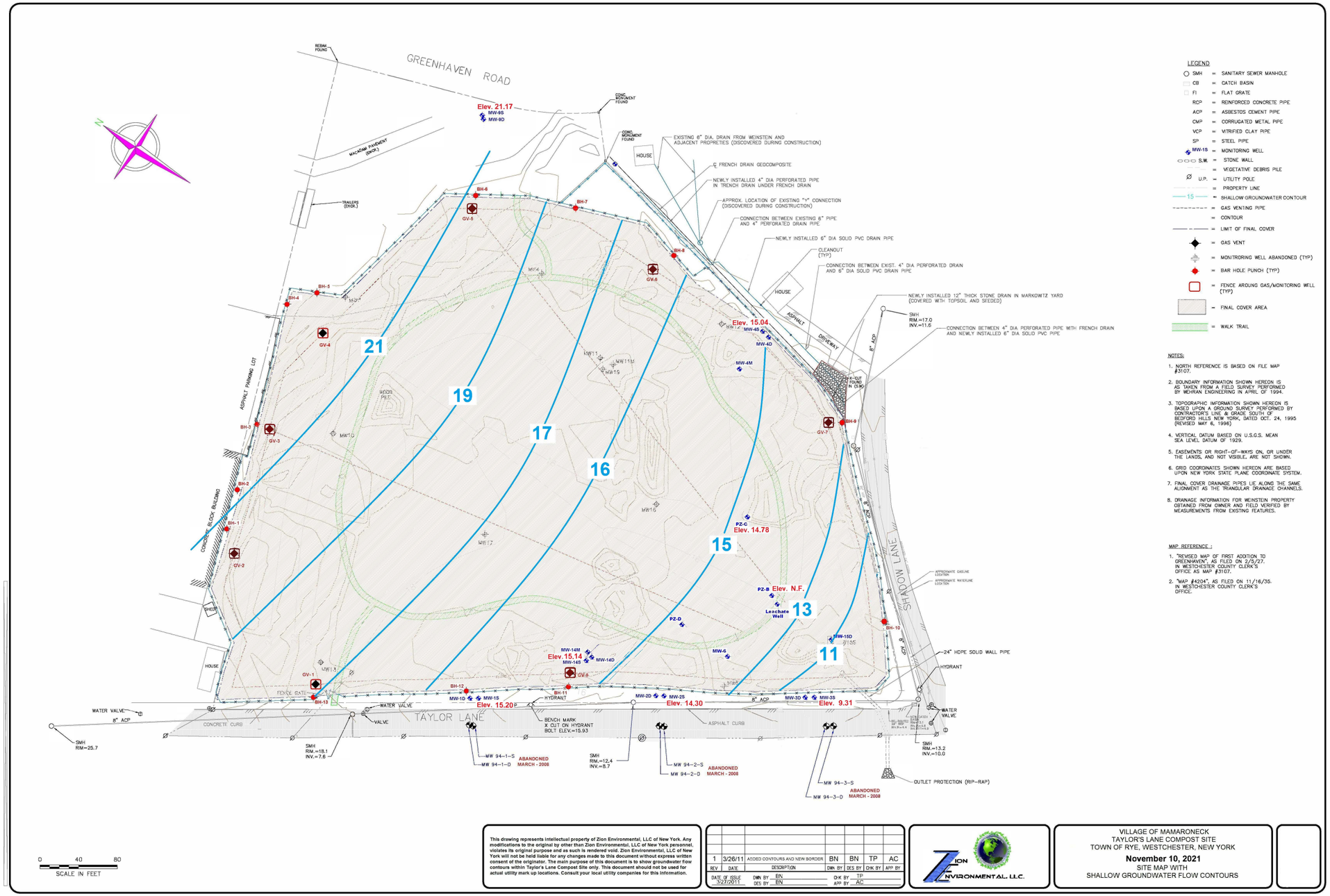

(to Post Rd.)
GREENHAVEN RD.
MW-9
RESIDENTIAL AREA
(to Greenhaven Rd.)
RESIDENTIAL AREA
SHADOW LANE
(to Taylor Lane)
MW-4
MW-11s
MW-19
MW-12
MW-10
MW-11m
DEBRIS PILES
MW-16
(leachate level)
COMPOST PILES
MW-17
FILL LAYER
MW-15d
MW-15s
MW-13
MW-14d
MW-14s
(leachate level)
SAND UNIT
MW-14m
N
DEPTH TO BEDROCK IS 70 FT. BELOW GRADE AT THIS POINT
BEDROCK
NOT TO SCALE
(to Magid Pond)
MALCOLM PIRNIE
MAMARONECK TAYLOR LANE LEAF COMPOST SITE
BLOCK DIAGRAM ILLUSTRATION OF
FILL LAYER, SAND UNIT and BEDROCK
MALCOLM PIRNIE, INC.




**FORMER TAYLOR'S LANE COMPOSTING SITE - NYS DEC Site No. 360021**

Village of Mamaroneck, Westchester County, New York

Site Management Plan: Figure 4 – Groundwater Contour Map

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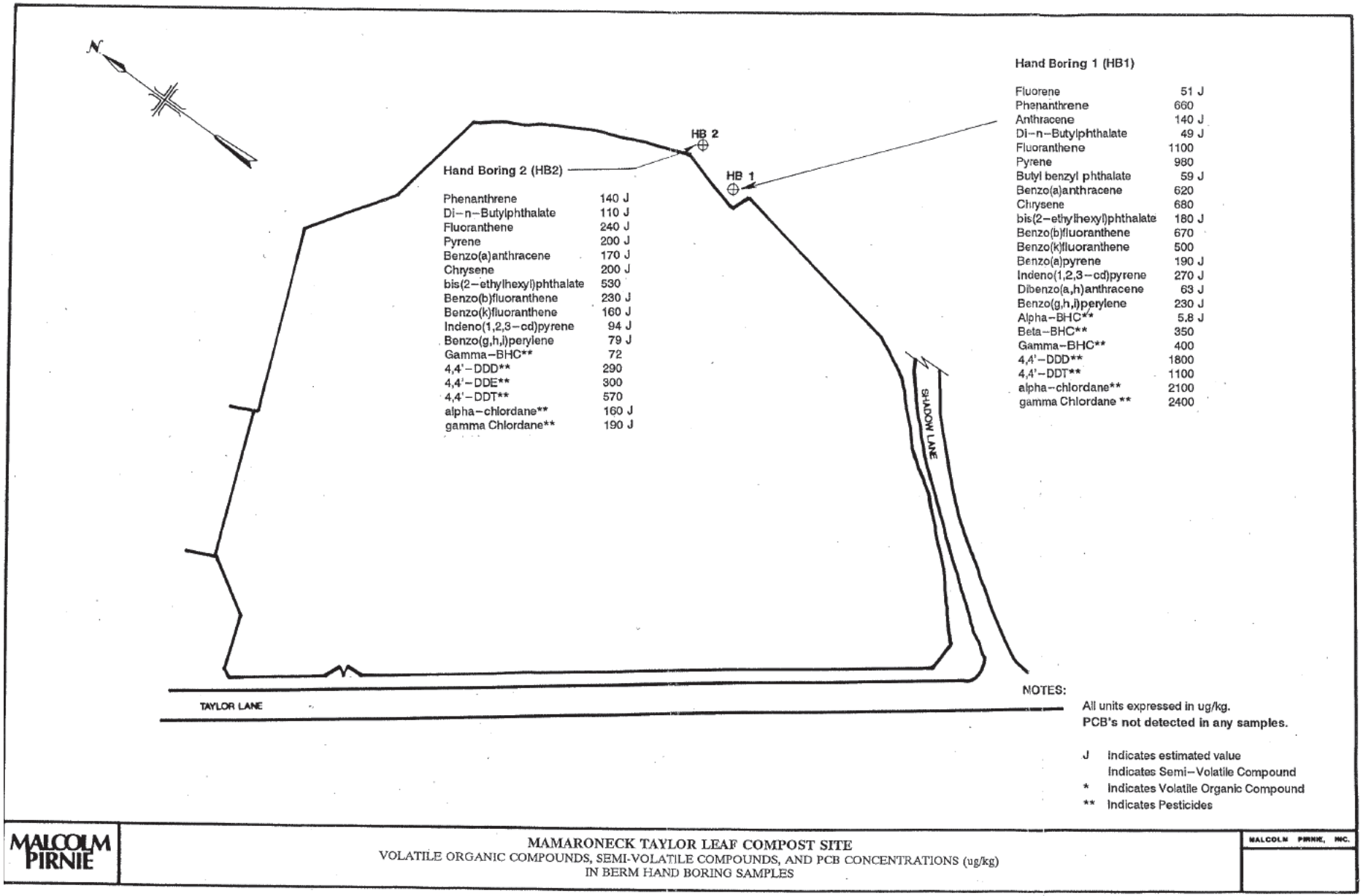


**FORMER TAYLOR'S LANE COMPOSTING SITE - NYS DEC Site No. 360021**

Village of Mamaroneck, Westchester County, New York

Site Management Plan: Figure 5 – RI Berm Sample Results (VOCs, SVOCs, and PCBs)

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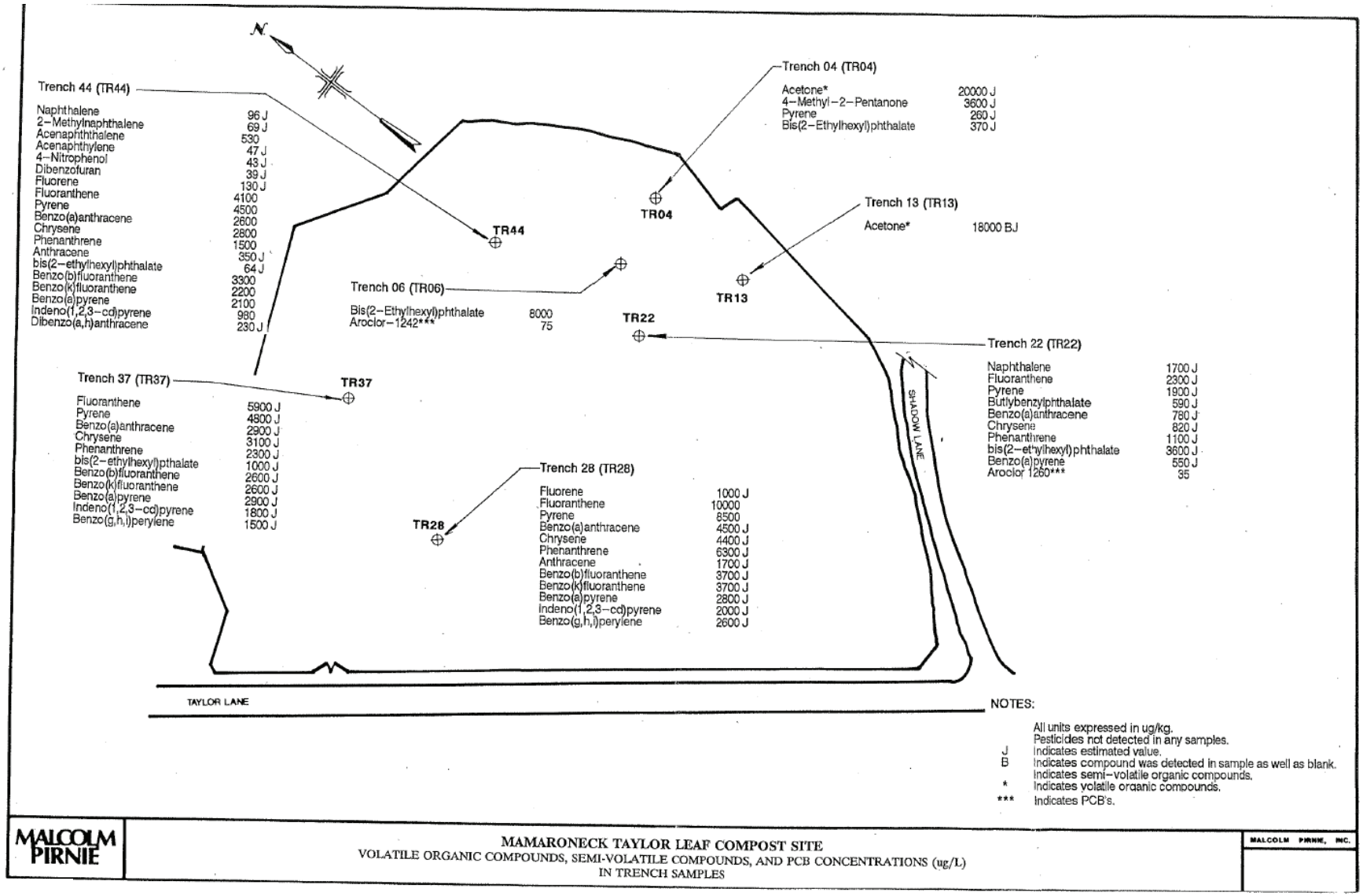


**FORMER TAYLOR'S LANE COMPOSTING SITE - NYS DEC Site No. 360021**

Village of Mamaroneck, Westchester County, New York

Site Management Plan: Figure 6 – RI Trench Sample Results (VOCs, SVOCs, and PCBs)

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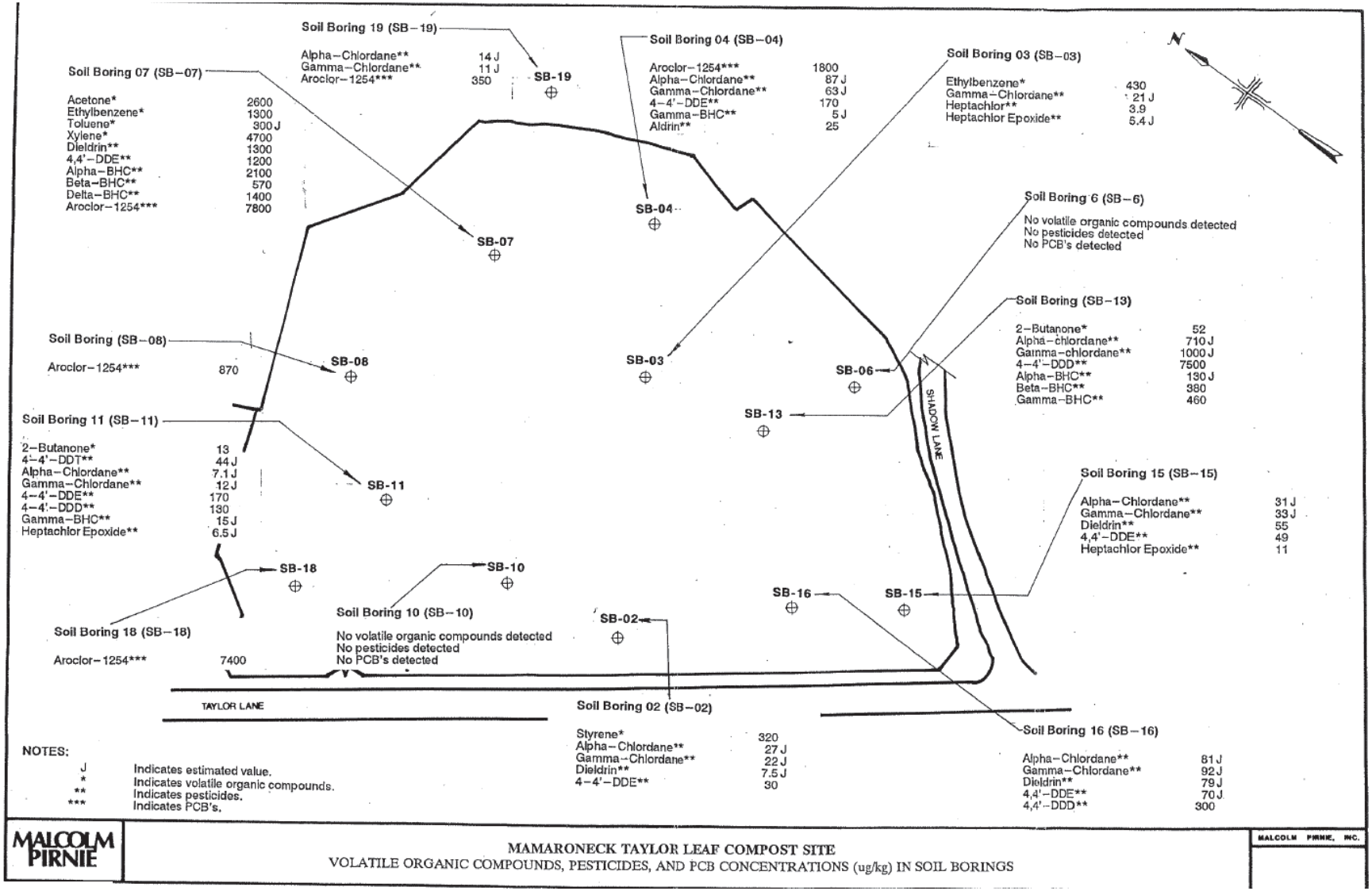


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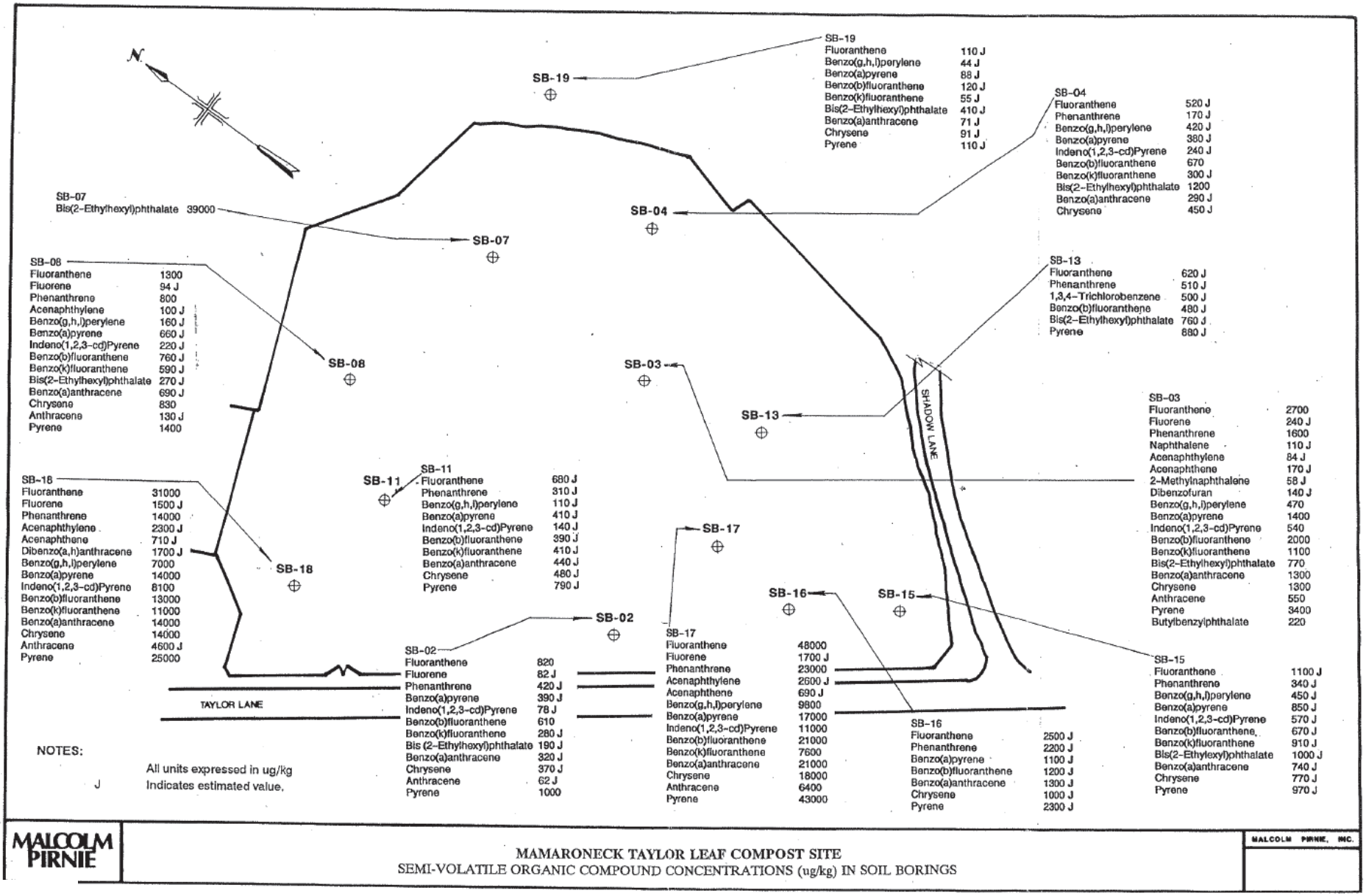
**FORMER TAYLOR'S LANE COMPOSTING SITE - NYS DEC Site No. 360021**

Village of Mamaroneck, Westchester County, New York

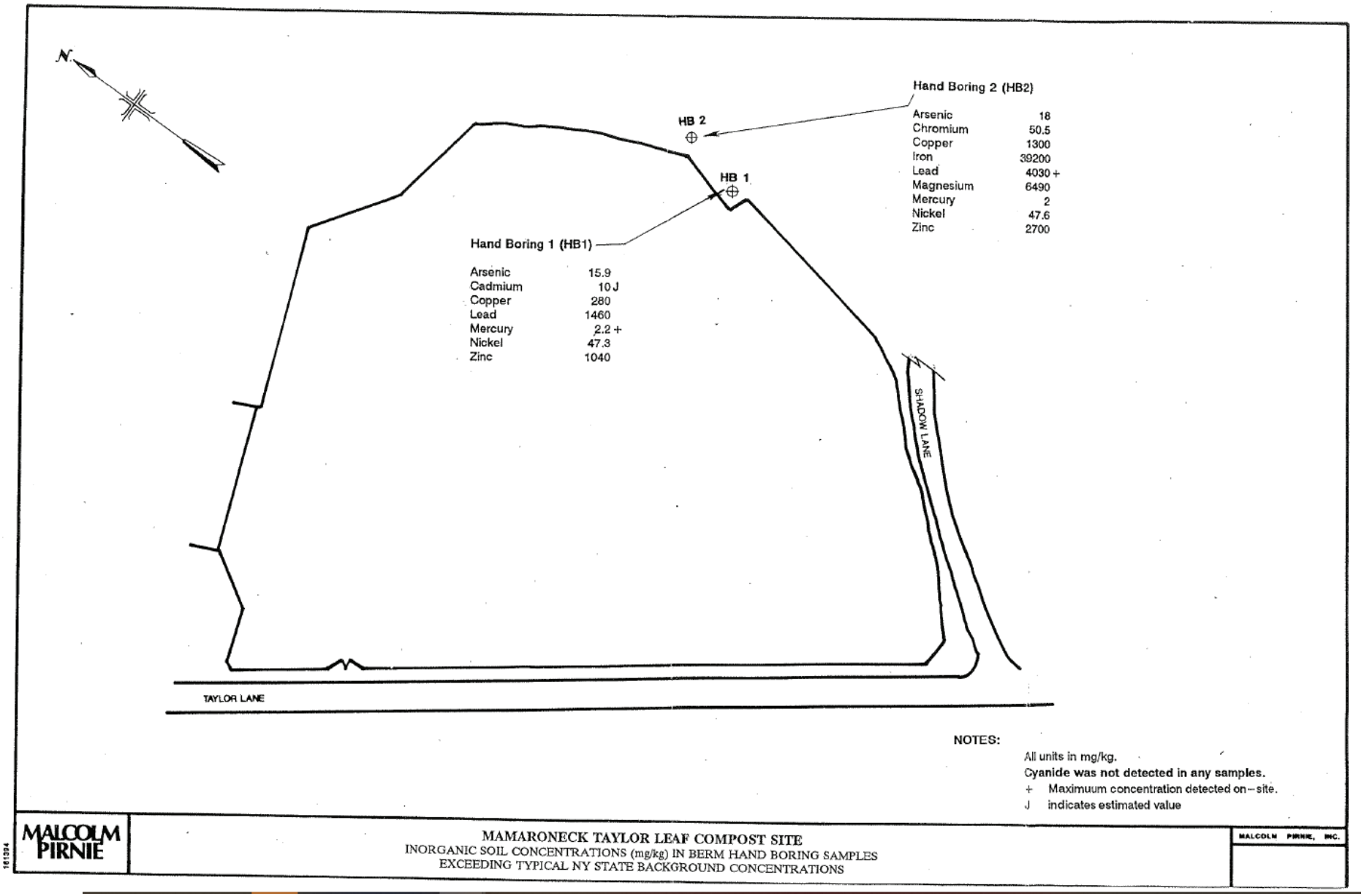
Site Management Plan: Figure 7 – RI Soil Boring Sample Results (VOCs, Pesticides, and PCBs)




**FORMER TAYLOR'S LANE COMPOSTING SITE - NYS DEC Site No. 360021**

Village of Mamaroneck, Westchester County, New York

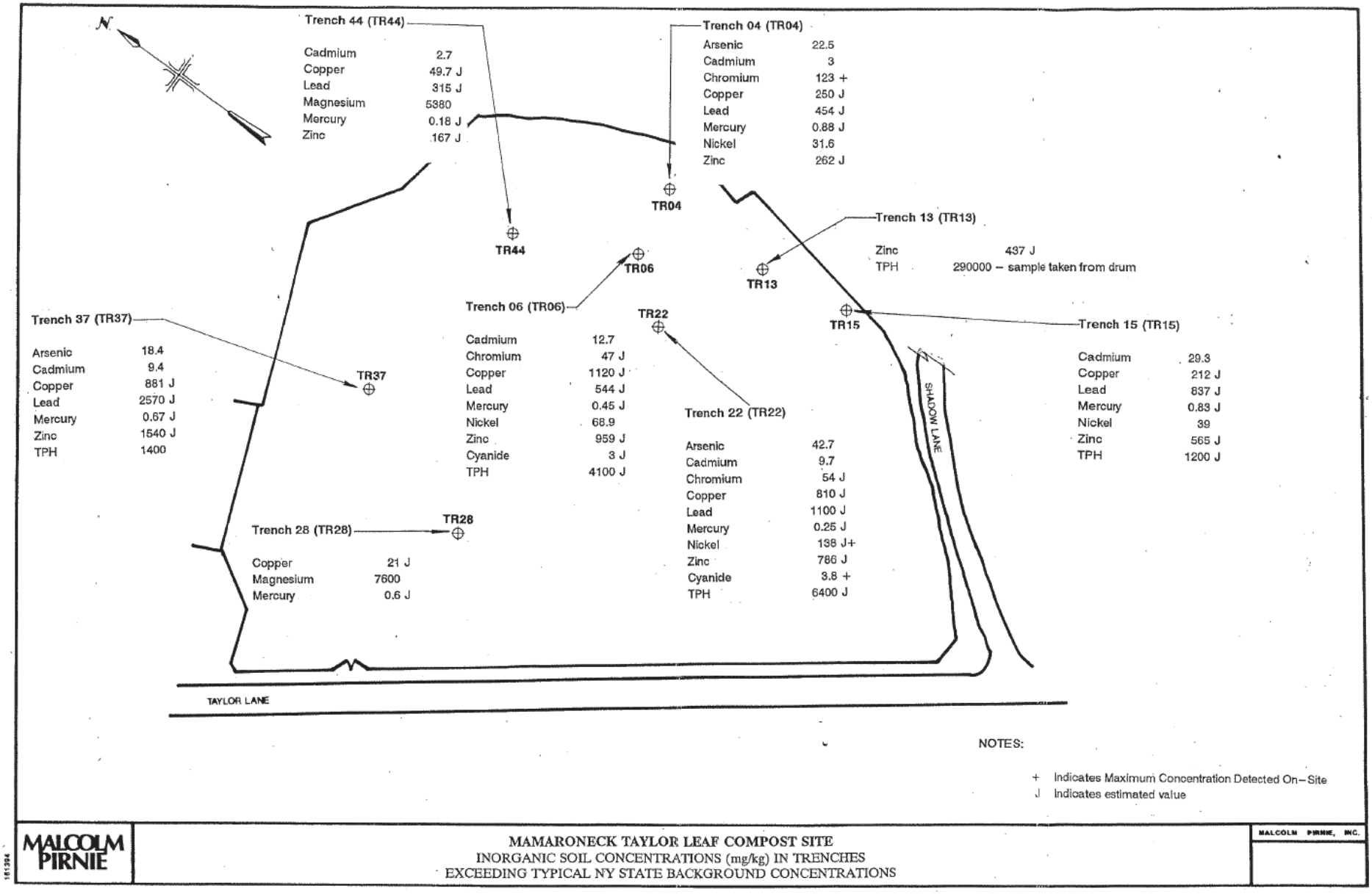
Site Management Plan: Figure 8 – RI Soil Boring Sample Results (SVOCs)




**FORMER TAYLOR'S LANE COMPOSTING SITE - NYS DEC Site No. 360021**

Village of Mamaroneck, Westchester County, New York

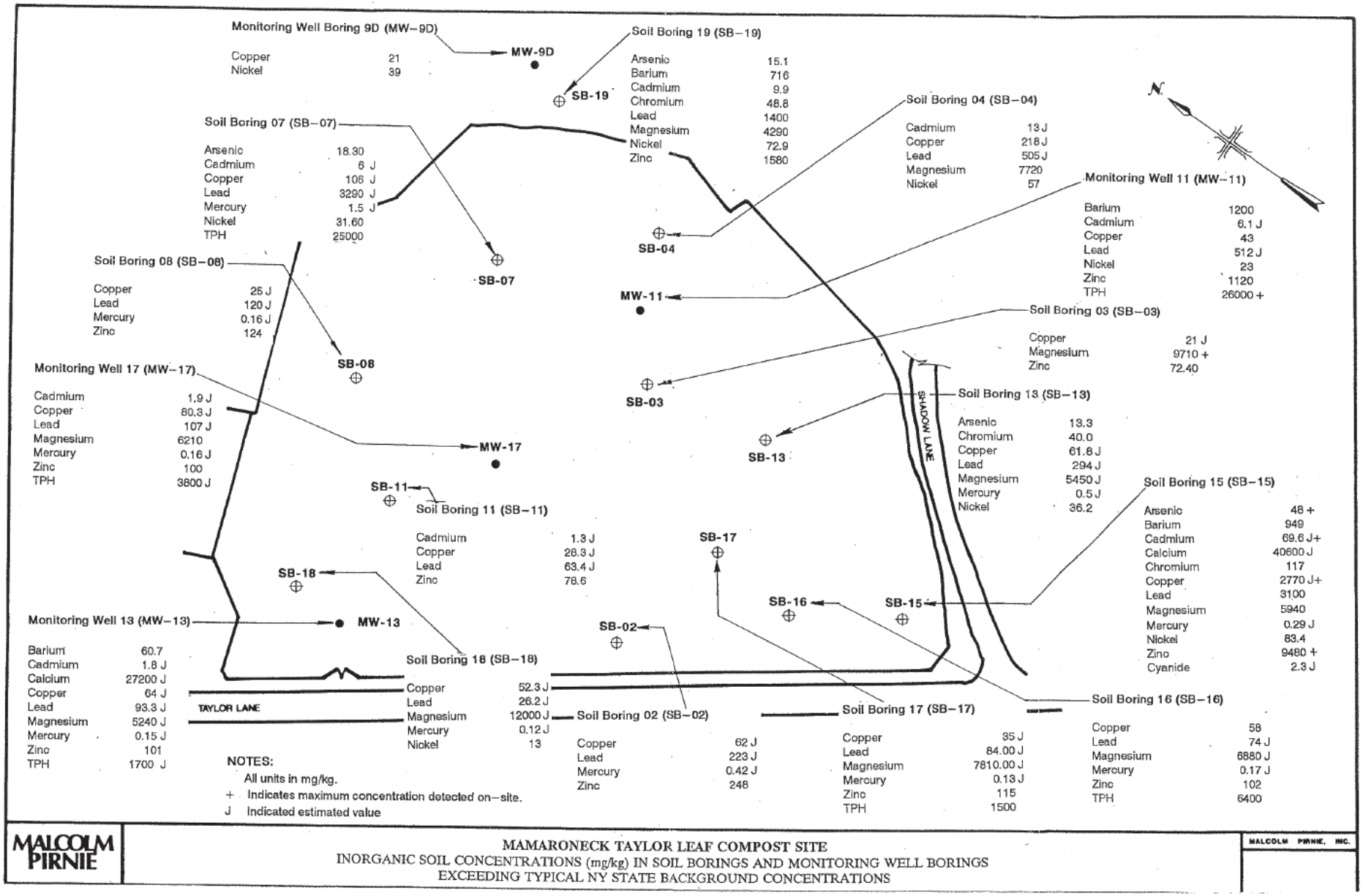
Site Management Plan: Figure 9 – RI Berm Sample Results (Metals)




**FORMER TAYLOR'S LANE COMPOSTING SITE - NYS DEC Site No. 360021**

Village of Mamaroneck, Westchester County, New York

Site Management Plan: Figure 10 – RI Trench Sample Results (Metals)




**FORMER TAYLOR'S LANE COMPOSTING SITE - NYS DEC Site No. 360021**

Village of Mamaroneck, Westchester County, New York

Site Management Plan: Figure 11 – RI Soil Boring Sample Results (Metals)

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*Taylors Lane Landfill Site*

# Figure 12: Institutional Control Boundaries

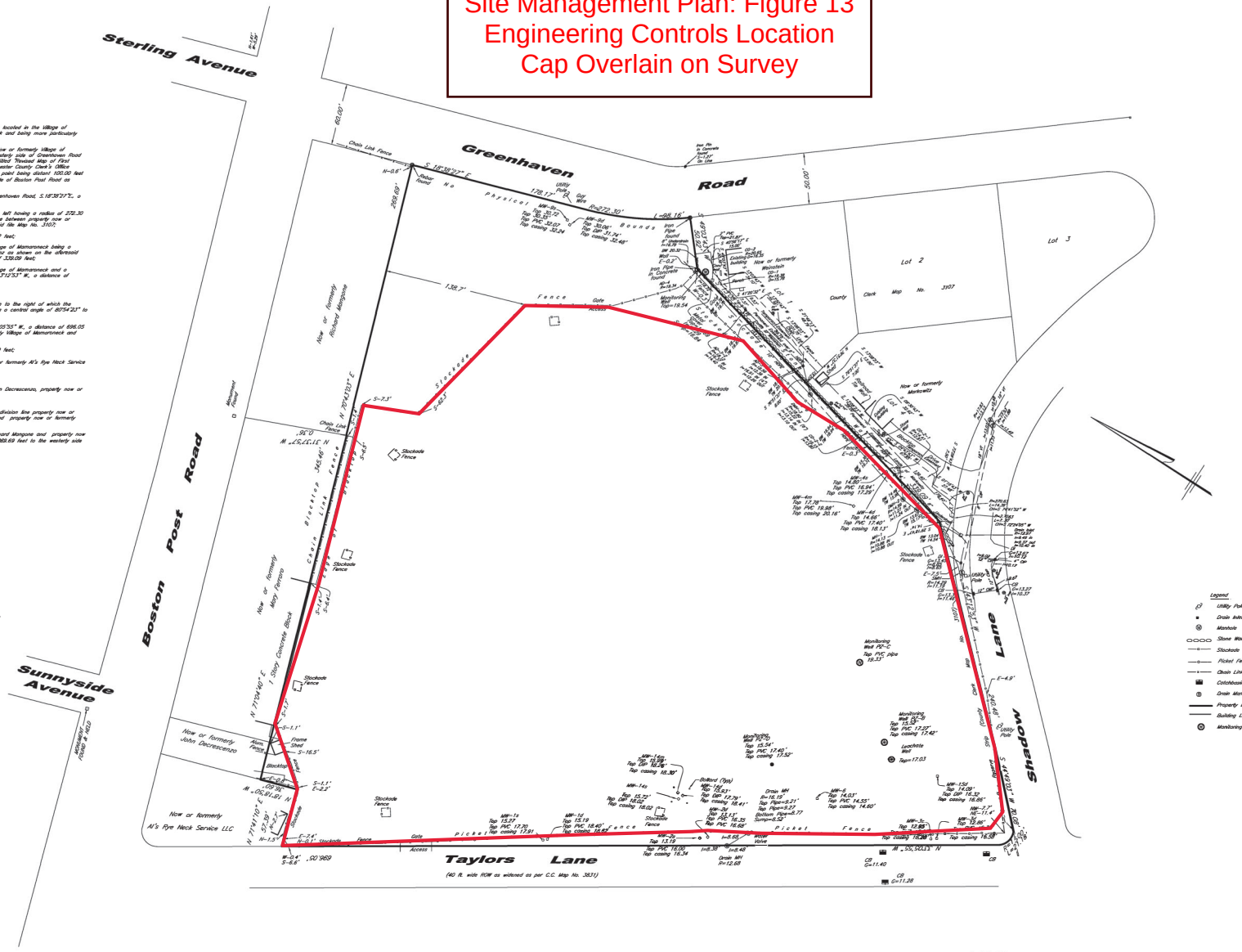
Taylors Lane
Village of Mamaroneck, Town of Rye
Westchester County, NY

Source: Westchester County 2015 Tax Parcel Dataset; NYS Department of Transportation 2008 Roads Dataset

| | |
|---|---|
| Drawn: | MO/SF |
| Date: | 10/1/2020 / 8/1/22 |
| Scale: | 1 inch equals 100 feet |
| Project: | 41629 |
| Figure: | 2 |

Document Path: B:\Chazen\Projects\41600-41699\41629-00 Mamaroneck VOM\GIS\Maps\Fig12-ICBoundaries2022Update.mxd

# Site Management Plan: Figure 13
# Engineering Controls Location
# Cap Overlain on Survey




Survey of Property
of
Taylors Lane Landfill Site—DEC Site No. 360021
prepared for
**Village of Mamaroneck**
in the Village of
**Mamaroneck**
Town of Rye
Westchester County, N.Y.
Scale 1"=40' Dec. 6, 2010

GRAPHIC SCALE
( IN FEET )
1 inch = 40 ft.

William H. Frea Jr., L.S. Senior Vice President
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*Former Taylor's Lane Composting Site*
*NYS DEC Site No. 360021*

# Site Management Plan: Figure 14
# Engineering Controls Location
# Cap Overlain on Aerial Photo

Village of Mamaroneck, Westchester County, New York

| | |
|---|---|
| Drawn: | MO |
| Date: | 6/22/21 |
| Scale: | 1 inch equals 150 feet |
| Project: | 41629.00 |
| Figure: | 14 |

Document Path: Z:\projects\41600-41699\41629-00 Mamaroneck VOM\GIS\Maps\Fig14_Aerial_Cap.mxd

# TABLES

Table 2
Magid Pond Comparative Data Analaysis
Taylor's Lane Compost Site
Village of Mamaroneck

| | MAGIC POND SEDIMENT RANGE | OTTER CREEK SEDIMENT RANGE | FRYER MANOR MARSH SEDIMENT RANGE (1) | PREMIUM RIVER SEDIMENT RANGE (1) | GARDENS LAKE SEDIMENT RANGE (1,2) | NEW YORK SEDIMENT CRITERIA (4) |
|---|---|---|---|---|---|---|
| PESTICIDES | (μg/kg) | (μg/kg) | (μg/kg) | (μg/kg) | (μg/kg) | (μg/kg) |
| | | | | | | |
| 4,4'-DDE | 96-190 | 83-110 | 230-780 | <0.05 - <164 | <380-1100 | 1,300/ 21.5 (5) |
| 4,4'-DDD | 120-260 | 77-110 | 160-280 | <0.2- <307 | <380-1100 | 1,300/ 21.5 (5) |
| 4,4'- DDT | 140-310 | 77 | 160-250 | <0.15- <7,452 | <380-1100 | 1,300/ 21.5 (5) |
| aldrin | 33-97 | 14-18 | <80- <121.2 | <0.10- <559 | <290-330 | 218.4/ 20.02 (5) |
| alpha-BHC | ND | 6.7 | <80- <121.2 | <0.05- <394 | <290-330 | - |
| alpha-chlordane | 35-84 | 25-26 | 180- <800 | <0.05- <2,642 (3) | <2900- <3500 (3) | 0.156 |
| endosulfan sulfate | ND | 86 | <160 - <742.4 | <0.05-15.7 - <329 | <580- <1200 | 0.78 |
| gamma-chlordane | 34-120 | 29-47 | 140 -<800 | <0.05- <2,642 (3) | <2900- <550 (3) | 0.156 |
| | | | | | | |
| INORGANICS | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| | | | | | | |
| alumimum | 4590-20,200 | 11,600-20,800 | - | - | 12,578 | - |
| arsenic | 6.0-19.7 | 4.4-13.3 | - | 4.8-13.8 | 25 | 5 |
| barium | 150-368 | 58.2-190 | - | - | - | - |
| beryillim | ND | 0.48 | - | - | <0.3 | - |
| cadmium | 3.7-7.2 | 2.6-4.6 | - | 3.5-4.7 | 1.5 | 0.8 |
| calcium | 12,200-27,300 | 1400-79,300 | - | - | - | - |
| chromium | 17.3-62.9 | 37.2-53.8 | - | 7.6-59.2 | 26.6 | 26 |
| cobalt | 6.5 | 5.7-15.1 | - | - | - | - |
| copper | 16.9-180.0 | 53.4-111 | - | 45.0-243.8 | 65.12 | 19 |
| iron | 20,300-85,900 | 30,500-40,800 | - | - | 15,316 | 2.40% |
| lead | 35.1-406.0 | 43-161 | - | 35.8-863.7 | 151.1 | 27 |
| magnesium | 3130-10,100 | 260-9000 | - | - | - | - |
| manganese | 459-2370 | 261-424 | - | - | 465 | 428 |
| mercery | 0.32-0.93 | 0.24-1.2 | - | 2.55 | 0.5 | 0.11 |
| nickel | 12.8-58.7 | 19.2-29.3 | - | 35.9-53.4 | 17.8 | 22 |
| potassium | 616-2990 | 3760-9860 | | - | 1.47% | - |
| selenikum | 2.4-7.9 | ND | - | - | 1.3 | - |
| silver | ND | ND | - | - | <0.6 | - |
| sodium | 1010-8460 | 948-13,000 | - | - | - | - |
| vanadikum | 27.8-99.0 | 37.5-67.4 | - | - | - | - |
| zinc | 95.9-417 | 89.7-261 | - | 74.2-1,120 | 163.7 | 85 |

(1) For Pesticides, detection limits varied; "<" indicates value below detection limit
(2) Inorganic values represent a composite of site samples
(3) Values for total chloroform
(4) Criteria based on NYDEC Guidance Document (1989) used as guidance
by the Division of Fish and Wildlife and is neither a standard nor a policy of the Department

(5) Aquatic toxicity based criteria / Wildlife resource based criterion
- = Data Not Available
ND - Not Detected

**Table 3**
**Post-Drainage Improvement Leachate Sampling Results**
**June 30, 2016**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Sample ID | NYSDEC TOGS 1.1.1 Groundwater Standard | MH-1 | | OUTFALL | | FD-1 (OUTFALL field duplicate) | |
|---|---|---|---|---|---|---|---|
| Location | | Catch Basin near MH-1 | | Culvert Discharge to Magid Pond | | Culvert Discharge to Magid Pond | |
| Sampling Date | | 6/30/2016 | | 6/30/2016 | | 6/30/2016 | |
| Compound | | Result | Q | Result | Q | Result | Q |
| Volatile Organics, 8260 List - Low Level | ug/L | ug/L | | ug/L | | ug/L | |
| 1,1,1,2-Tetrachloroethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,1,1-Trichloroethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,1,2,2-Tetrachloroethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,1,2-Trichloroethane | 1 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,1-Dichloroethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,1-Dichloroethylene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,1-Dichloropropylene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,2,3-Trichlorobenzene | 5 | 0.20 | U | 0.20 | U | 0.47 | JB |
| 1,2,3-Trichloropropane | 0.04 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,2,4,5-Tetramethylbenzene | ~ | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,2,4-Trichlorobenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,2,4-Trimethylbenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,2-Dibromo-3-chloropropane | 0.04 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,2-Dibromoethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,2-Dichlorobenzene | 3 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,2-Dichloroethane | 0.6 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,2-Dichloropropane | 1 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,3,5-Trimethylbenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,3-Dichlorobenzene | 3 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,3-Dichloropropane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 1,4-Dichlorobenzene | 3 | 0.20 | U | 0.20 | U | 0.20 | U |
| 2,2-Dichloropropane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 2-Butanone | 50 | 0.20 | U | 0.20 | U | 0.20 | U |
| 2-Chlorotoluene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 2-Hexanone | 50 | 0.20 | U | 0.20 | U | 0.20 | U |
| 4-Chlorotoluene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| 4-Methyl-2-pentanone | ~ | 0.20 | U | 0.20 | U | 0.20 | U |
| Acetone | 50 | 1 | U | 1 | U | 1.90 | JB |
| Benzene | 1 | 0.20 | U | 0.20 | U | 0.20 | U |
| Bromobenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Bromochloromethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Bromodichloromethane | 50 | 0.20 | U | 0.20 | U | 0.20 | U |
| Bromoform | 50 | 0.20 | U | 0.20 | U | 0.20 | U |
| Bromomethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Carbon disulfide | ~ | 0.20 | U | 0.20 | U | 0.20 | U |
| Carbon tetrachloride | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Chlorobenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Chloroethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Chloroform | 7 | 0.20 | U | 0.20 | U | 0.20 | U |
| Chloromethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| cis-1,2-Dichloroethylene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| cis-1,3-Dichloropropylene | 0.4 | 0.20 | U | 0.20 | U | 0.20 | U |
| Dibromochloromethane | 50 | 0.20 | U | 0.20 | U | 0.20 | U |
| Dibromomethane | ~ | 0.20 | U | 0.20 | U | 0.20 | U |
| Dichlorodifluoromethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Ethyl Benzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |

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| Sample ID | NYSDEC TOGS 1.1.1 Groundwater Standard | MH-1 | | OUTFALL | | FD-1 (OUTFALL field duplicate) | |
|---|---|---|---|---|---|---|---|
| Location | | Catch Basin near MH-1 | | Culvert Discharge to Magid Pond | | Culvert Discharge to Magid Pond | |
| Sampling Date | | 6/30/2016 | | 6/30/2016 | | 6/30/2016 | |
| Compound | | Result | Q | Result | Q | Result | Q |
| Hexachlorobutadiene | 0.5 | 0.20 | U | 0.20 | U | 0.22 | JB |
| Isopropylbenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Methyl tert-butyl ether (MTBE) | 10 | 1.50 | | 3.70 | | 3.50 | |
| Methylene chloride | 5 | 1 | U | 1 | U | 1 | U |
| Naphthalene | 10 | 1 | U | 1 | U | 1 | U |
| n-Butylbenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| n-Propylbenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| o-Xylene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| p- & m- Xylenes | 5 | 0.50 | U | 0.50 | U | 0.50 | U |
| p-Diethylbenzene | ~ | 0.20 | U | 0.20 | U | 0.20 | U |
| p-Ethyltoluene | ~ | 0.20 | U | 0.20 | U | 0.20 | U |
| p-Isopropyltoluene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| sec-Butylbenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Styrene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| tert-Butylbenzene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Tetrachloroethylene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Toluene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| trans-1,2-Dichloroethylene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| trans-1,3-Dichloropropylene | 0.4 | 0.20 | U | 0.20 | U | 0.20 | U |
| Trichloroethylene | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Trichlorofluoromethane | 5 | 0.20 | U | 0.20 | U | 0.20 | U |
| Vinyl Chloride | 2 | 0.20 | U | 0.20 | U | 0.20 | U |
| Xylenes, Total | 5 | 0.60 | U | 0.60 | U | 0.60 | U |
| Semi-Volatiles, 8270 List - low level | ug/L | ug/L | | ug/L | | ug/L | |
| 1,2,4-Trichlorobenzene | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| 1,2-Dichlorobenzene | 3 | 2.56 | U | 2.56 | U | 2.56 | U |
| 1,3-Dichlorobenzene | 3 | 2.56 | U | 2.56 | U | 2.56 | U |
| 1,4-Dichlorobenzene | 3 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2,4,5-Trichlorophenol | 1 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2,4,6-Trichlorophenol | 1 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2,4-Dichlorophenol | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2,4-Dimethylphenol | 50 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2,4-Dinitrophenol | 10 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2,4-Dinitrotoluene | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2,6-Dinitrotoluene | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2-Chloronaphthalene | 10 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2-Chlorophenol | 1 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2-Methylnaphthalene | ~ | 2.56 | U | 2.56 | U | 2.56 | U |
| 2-Methylphenol | 1 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2-Nitroaniline | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| 2-Nitrophenol | 1 | 2.56 | U | 2.56 | U | 2.56 | U |
| 3- & 4-Methylphenols | ~ | 2.56 | U | 2.56 | U | 2.56 | U |
| 3,3'-Dichlorobenzidine | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| 3-Nitroaniline | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| 4,6-Dinitro-2-methylphenol | ~ | 2.56 | U | 2.56 | U | 2.56 | U |
| 4-Bromophenyl phenyl ether | ~ | 2.56 | U | 2.56 | U | 2.56 | U |
| 4-Chloro-3-methylphenol | 1 | 2.56 | U | 2.56 | U | 2.56 | U |
| 4-Chloroaniline | 5 | 2.56 | U | 2.56 | U | 2.56 | U |

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| Sample ID | NYSDEC TOGS 1.1.1 Groundwater Standard | MH-1 | | OUTFALL | | FD-1 (OUTFALL field duplicate) | |
|---|---|---|---|---|---|---|---|
| Location | | Catch Basin near MH-1 | | Culvert Discharge to Magid Pond | | Culvert Discharge to Magid Pond | |
| Sampling Date | | 6/30/2016 | | 6/30/2016 | | 6/30/2016 | |
| Compound | | Result | Q | Result | Q | Result | Q |
| 4-Chlorophenyl phenyl ether | ~ | 2.56 | U | 2.56 | U | 2.56 | U |
| 4-Nitroaniline | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| 4-Nitrophenol | 1 | 2.56 | U | 2.56 | U | 2.56 | U |
| Acenaphthene | 20 | 0.051 | U | 0.051 | U | 0.051 | U |
| Acenaphthylene | ~ | 0.051 | U | 0.051 | U | 0.051 | U |
| Aniline | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| Anthracene | 50 | 0.051 | U | 0.051 | U | 0.051 | U |
| Benzo(a)anthracene | 0.002 | 0.051 | U | 0.051 | U | 0.051 | U |
| Benzo(a)pyrene | 0.002 | 0.051 | U | 0.051 | U | 0.051 | U |
| Benzo(b)fluoranthene | 0.002 | 0.051 | U | 0.051 | U | 0.051 | U |
| Benzo(g,h,i)perylene | ~ | 0.051 | U | 0.051 | U | 0.051 | U |
| Benzo(k)fluoranthene | 0.002 | 0.051 | U | 0.051 | U | 0.051 | U |
| Benzyl alcohol | ~ | 2.56 | U | 2.56 | U | 2.56 | U |
| Benzyl butyl phthalate | 50 | 2.56 | U | 2.56 | U | 2.56 | U |
| Bis(2-chloroethoxy)methane | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| Bis(2-chloroethyl)ether | 1 | 2.56 | U | 2.56 | U | 2.56 | U |
| Bis(2-chloroisopropyl)ether | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| Bis(2-ethylhexyl)phthalate | 5 | 0.51 | U | 0.51 | U | 0.51 | U |
| Chrysene | 0.002 | 0.051 | U | 0.051 | U | 0.051 | U |
| Dibenzo(a,h)anthracene | ~ | 0.051 | U | 0.051 | U | 0.051 | U |
| Dibenzofuran | ~ | 2.56 | U | 2.56 | U | 2.56 | U |
| Diethyl phthalate | 50 | 2.56 | U | 2.56 | U | 2.56 | U |
| Dimethyl phthalate | 50 | 2.56 | U | 2.56 | U | 2.56 | U |
| Di-n-butyl phthalate | 50 | 2.56 | U | 2.56 | U | 2.56 | U |
| Di-n-octyl phthalate | 50 | 2.56 | U | 2.56 | U | 2.56 | U |
| Fluoranthene | 50 | 0.051 | U | 0.051 | U | 0.051 | U |
| Fluorene | 50 | 0.051 | U | 0.051 | U | 0.051 | U |
| Hexachlorobenzene | 0.04 | 0.021 | U | 0.021 | U | 0.021 | U |
| Hexachlorobutadiene | 0.5 | 0.51 | U | 0.51 | U | 0.51 | U |
| Hexachlorocyclopentadiene | 5 | 2.56 | U | 2.56 | U | 2.56 | U |
| Hexachloroethane | 5 | 0.51 | U | 0.51 | U | 0.51 | U |
| Indeno(1,2,3-cd)pyrene | 0.002 | 0.051 | U | 0.051 | U | 0.051 | U |
| Isophorone | 50 | 2.56 | U | 2.56 | U | 2.56 | U |
| Naphthalene | 10 | 0.051 | U | 0.051 | U | 0.051 | U |
| Nitrobenzene | 0.4 | 0.26 | U | 0.26 | U | 0.26 | U |
| N-Nitrosodimethylamine | ~ | 0.51 | U | 0.51 | U | 0.51 | U |
| N-nitroso-di-n-propylamine | ~ | 2.56 | U | 2.56 | U | 2.56 | U |
| N-Nitrosodiphenylamine | 50 | 2.56 | U | 2.56 | U | 2.56 | U |
| Pentachlorophenol | 1 | 0.26 | U | 0.26 | U | 0.26 | U |
| Phenanthrene | 50 | 0.051 | U | 0.051 | U | 0.051 | U |
| Phenol | 1 | 2.56 | U | 2.56 | U | 2.56 | U |
| Pyrene | 50 | 0.051 | U | 0.051 | U | 0.051 | U |
| Pyridine | 50 | 2.56 | U | 2.56 | U | 2.56 | U |
| Pesticides, 8081 target list | ug/L | ug/L | | ug/L | | ug/L | |
| 4,4'-DDD | 0.3 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| 4,4'-DDE | 0.2 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| 4,4'-DDT | 0.2 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Aldrin | ~ | 0.0041 | U | 0.0041 | U | 0.0041 | U |

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**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Sample ID | NYSDEC TOGS 1.1.1 Groundwater Standard | MH-1 | | OUTFALL | | FD-1 (OUTFALL field duplicate) | |
|---|---|---|---|---|---|---|---|
| Location | | Catch Basin near MH-1 | | Culvert Discharge to Magid Pond | | Culvert Discharge to Magid Pond | |
| Sampling Date | | 6/30/2016 | | 6/30/2016 | | 6/30/2016 | |
| Compound | | Result | Q | Result | Q | Result | Q |
| alpha-BHC | 0.01 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| alpha-Chlordane | ~ | 0.018 | | 0.0071 | | 0.0073 | |
| beta-BHC | 0.04 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Chlordane, total | 0.05 | **0.18** | | **0.079** | | **0.079** | |
| delta-BHC | 0.04 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Dieldrin | 0.004 | 0.0021 | U | 0.0021 | U | 0.0021 | U |
| Endosulfan I | ~ | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Endosulfan II | ~ | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Endosulfan sulfate | ~ | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Endrin | ~ | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Endrin aldehyde | 5 | 0.010 | U | 0.010 | U | 0.010 | U |
| Endrin ketone | 5 | 0.010 | U | 0.010 | U | 0.010 | U |
| gamma-BHC (Lindane) | 0.05 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| gamma-Chlordane | ~ | 0.012 | | 0.010 | U | 0.010 | U |
| Heptachlor | 0.04 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Heptachlor epoxide | 0.03 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Methoxychlor | 35 | 0.0041 | U | 0.0041 | U | 0.0041 | U |
| Toxaphene | 0.06 | 0.10 | U | 0.10 | U | 0.10 | U |
| Metals, Target Analyte | ug/L | ug/L | | ug/L | | ug/L | |
| Aluminum | ~ | 56 | U | 56 | U | 56 | U |
| Antimony | 3 | 6 | U | 6 | U | 6 | U |
| Arsenic | 25 | 6 | | 4 | U | 4 | U |
| Barium | 1000 | 353 | | 529 | | 540 | |
| Beryllium | 3 | 1 | U | 1 | U | 1 | U |
| Cadmium | 5 | 3 | U | 3 | U | 3 | U |
| Calcium | ~ | 72,000 | | 73,900 | | 75,900 | |
| Chromium | 50 | 6 | U | 6 | U | 6 | U |
| Cobalt | ~ | 6 | U | 6 | U | 6 | U |
| Copper | 200 | 7 | | 5 | | 5 | |
| Iron | 300 | **4,160** | | **7,050** | | **7,280** | |
| Lead | 25 | 3 | U | 3 | U | 3 | U |
| Magnesium | 35000 | 30,800 | | 30,200 | | 30,900 | |
| Manganese | 300 | **554** | | **528** | | **536** | |
| Nickel | 100 | 6 | U | 6 | U | 6 | U |
| Potassium | ~ | 5,920 | | 7,370 | | 7,560 | |
| Selenium | 10 | 11 | U | 11 | U | 11 | U |
| Silver | 50 | 6 | U | 6 | U | 6 | U |
| Sodium | 20000 | **96,000** | | **102,000** | | **106,000** | |
| Thallium | ~ | 6 | U | 6 | U | 6 | U |
| Vanadium | ~ | 11 | U | 11 | U | 11 | U |
| Zinc | 2000 | 22 | | 16 | | 18 | |
| Mercury by 7473 | ug/L | ug/L | | ug/L | | ug/L | |
| Mercury | 0.7 | 0.20 | U | 0.20 | U | 0.20 | U |
| Cyanide, Total | ug/L | ug/L | | ug/L | | ug/L | |
| Cyanide, total | 200 | 10 | U | 10 | U | 10 | U |
| Polychlorinated Biphenyls (PCB) | ug/L | ug/L | | ug/L | | ug/L | |
| Aroclor 1016 | ~ | 0.051 | U | 0.051 | U | 0.051 | U |

**Table 3**
**Post-Drainage Improvement Leachate Sampling Results**
**June 30, 2016**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Sample ID | NYSDEC TOGS 1.1.1 Groundwater Standard | MH-1 | | OUTFALL | | FD-1 (OUTFALL field duplicate) | |
|---|---|---|---|---|---|---|---|
| Location | | Catch Basin near MH-1 | | Culvert Discharge to Magid Pond | | Culvert Discharge to Magid Pond | |
| Sampling Date | | 6/30/2016 | | 6/30/2016 | | 6/30/2016 | |
| Compound | | Result | Q | Result | Q | Result | Q |
| Aroclor 1221 | ~ | 0.051 | U | 0.051 | U | 0.051 | U |
| Aroclor 1232 | ~ | 0.051 | U | 0.051 | U | 0.051 | U |
| Aroclor 1242 | ~ | 0.051 | U | 0.051 | U | 0.051 | U |
| Aroclor 1248 | ~ | 0.051 | U | 0.051 | U | 0.051 | U |
| Aroclor 1254 | ~ | 0.051 | U | 0.051 | U | 0.051 | U |
| Aroclor 1260 | ~ | 0.051 | U | 0.051 | U | 0.051 | U |
| Total PCBs | 0.09 | 0.051 | U | 0.051 | U | 0.051 | U |

NOTES:

Results that exceed the groundwater standard are shaded yellow.

Q is the Qualifier Column with definitions as follows:

D=result is from an analysis that required a dilution

J=analyte detected at or above the MDL (method detection limit) but below the RL (Reporting Limit) - data is estimated

U=analyte not detected at or above the level indicated

B=analyte found in the analysis batch blank

E=result is estimated and cannot be accurately reported due to levels encountered or interferences

NT=this indicates the analyte was not a target for this sample

~=this indicates that no regulatory limit has been established for this analyte

# Table 4
## Groundwater Monitoring Results - Emerging Contaminants
## August 15, 2018
## Taylor's Lane Compost Site
## Village of Mamaroneck

| CAS No. | PARAMETERS | UNIT | MW-9D | MW-9S | MW-2D | MW-2S | MW-4D | DUP-01 (MW-4D) | MW-4S | MH-1 | EB-01 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Volatile Organic Compounds** | | | | | | | | | | |
| 27619972 | 6:2 FTS | ng/L | ND | 3.1 J | 2.2 J | 2.4 J | 2.6 J | ND | 2.1 J | ND | ND |
| 39108344 | 8:2 FTS | ng/L | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 2991506 | N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) | ng/L | ND | ND | ND | 3.4 J | ND | ND | ND | ND | ND |
| 2355319 | N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA) | ng/L | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 375735 | Perfluorobutanesulfonic acid (PFBS) | ng/L | 5.1 | 1.7 J | 0.86 J | 5.3 | 8.2 | 8.7 | 7.5 | 16 | ND |
| 375224 | Perfluorobutanoic acid (PFBA) | ng/L | 7.5 | 3.4 | 9.2 | 8 | 8.6 | 8.6 | 9 | 9.4 | ND |
| 335773 | Perfluorodecanesulfonic acid (PFDS) | ng/L | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 335762 | Perfluorodecanoic acid (PFDA) | ng/L | ND | 0.95 J | ND | ND | ND | ND | ND | ND | ND |
| 307551 | Perfluorododecanoic acid (PFDoA) | ng/L | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 375928 | Perfluoroheptanesulfonic Acid (PFHpS) | ng/L | 0.27 J | 0.29 J | ND | 0.59 J | ND | ND | 0.29 J | 0.38 J | ND |
| 375859 | Perfluoroheptanoic acid (PFHpA) | ng/L | 5.9 | 3.4 | 1 J | 4.3 | 5.8 | 5.5 | 5.9 | 6.3 | ND |
| 355464 | Perfluorohexanesulfonic acid (PFHxS) | ng/L | 3 B | 2.3 B | 2.8 B | 3.8 B | 2.9 B | 2.8 B | 2.9 B | 3.6 B | 0.31 J B |
| 307244 | Perfluorohexanoic acid (PFHxA) | ng/L | 9.3 | 3.1 | 1.3 J | 6.4 | 12 | 12 | 12 | 9 | ND |
| 375951 | Perfluorononanoic acid (PFNA) | ng/L | 0.77 J | 1.3 J | ND | 1.1 J | 0.35 J | 0.45 J | 0.42 J | 0.48 J | ND |
| 754916 | Perfluorooctane Sulfonamide (FOSA) | ng/L | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1763231 | Perfluorooctanesulfonic acid (PFOS) | ng/L | 4.9 | 5.7 | 23 F1 | 16 | 3.7 | 3.8 | 4.1 | 11 | ND |
| 335671 | Perfluorooctanoic acid (PFOA) | ng/L | 16 | 10 | 4.1 | 17 | 15 | 15 | 13 | 18 | ND |
| 2706903 | Perfluoropentanoic acid (PFPeA) | ng/L | 11 | 3.3 | 1.6 J | 7.7 | 19 | 19 | 19 | 11 | ND |
| 376067 | Perfluorotetradecanoic acid (PFTeA) | ng/L | ND | ND | ND | ND | ND | ND | 0.57 J B | 0.33 J B | ND |
| 72629948 | Perfluorotridecanoic Acid (PFTriA) | ng/L | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 2058948 | Perfluoroundecanoic acid (PFUnA) | ng/L | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | | | | | | | | | | | |
| 123911 | 1,4-Dioxane | ug/L | ND | ND | ND | 7.0 E | 2.1 E | 2.4 | 2.9 | 6.4 E | ND |
| | **Field Parameters** | | | | | | | | | | |
| | Field pH | SU | 7.41 | 6.64 | 8.30 | 7.71 | 7.49 | | 7.89 | 7.75 | NA |
| | Field Specific Conductivity | umhos/cm | 976 | 989 | 974 | 929 | 913 | | 867 | 916 | NA |
| | Temperature | degC | 16.4 | 15.8 | 16.5 | 18.7 | 19.5 | | 21.8 | 19.5 | NA |
| | Field Eh | mV | -77.8 | -38.4 | -122.4 | -90.9 | -79.9 | | -101.7 | -93.6 | NA |
| | Field Turbidity | NTU | 135 | 122 | 6.0 | 20.3 | 70.2 | | 241 | 12.1 | NA |
| | DO | mg/l | 4.16 | 3.95 | 3.36 | 2.3 | 2.73 | | 4.79 | 4.49 | NA |
| | Static Water Level (**TOC**) | ft | 13.5 | 12.00 | 2.23 | 2.42 | 3.63 | | 2.60 | NA | NA |

**Legend**

"NA" Parameter not available.

"NS" No sample taken.

"B" Compound was found in the blank and sample.

"J" Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

"E" Result exceeded calibration range.

"F1" MS and/or MSD Recovery is outside acceptance limits.

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**Table 5a**
**Groundwater Monitoring Results Summary - Volatile Organic Compounds**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Sampling Date | Analytical Parameters (µg/L) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Vinyl Chloride | 1, 2-DCE | MTBE | Tert-Butyl-Alcohol | 1,1,1-TCA | Tert-butyl benzene | Chlorobenzene |
| **Standard** | 2.0 | 5.0 | 10.0 | 20.0 | 5.0 | 5.0 | 5.0 |
| **MW-1S** | | | | | | | |
| 8/26/2010 | 0.5 U | 0.5 U | 2.0 | 20 U | 0.5 U | 1.5 | - |
| 2/23/2011 | 5.0 U | 5.0 U | 0.81 J | N/A | 5.0 U | N/A | 5.0 U |
| 8/2/2011 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 0.89 J | 5.0 U |
| 2/20/2012 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 0.55 J | 5.0 U |
| 8/30/2012 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 0.71 J | 5.0 U |
| 2/19/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 0.55 J | 5.0 U |
| 8/14/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 0.62 J | 5.0 U |
| 2/26/2014 | 5.0 U | 5.0 U | 5.0 U | 20 U | 5.0 U | 5.0 U | 5.0 U |
| 10/2/2014 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/24/2015 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/6/2015 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.00 U | 5.0 U |
| 3/9/2016 | 5 U | 5 U | 5 U | 2.0 U | 5 U | 2.9 J | 5 U |
| 8/12/2016 | 5 U | 5 U | 5 U | 1 | 5 U | 2.8 J | 5 U |
| 2/1/2017 | 5 U | 5 U | 5 U | 1.7 Cal-E | 5 U | 2.8 J | 5 U |
| 8/17/2017 | 5 U | 5 U | 5 U | 0.66 J | 5 U | 2.5 J | 5 U |
| 2/15/2018 | 5 U | 5 U | 5 U | 1 J | 5 U | 2.5 J | 5 U |
| 8/2/2018 | 5 U | 5 U | 5 U | 2 U | 5 U | 3.2 J | 5 U |
| 2/5/2019 | 5 U | 5 U | 5 U | 1.2 J | 5 U | 2.6 J | 5 U |
| 8/21/2019 | 5 U | 5 U | 5 U | 1 U | 5 U | 2.5 J | 5 U |
| 2/24/2020 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 8/31/2020 | 5 U | 5 U | 5 U | 1 U | 5 U | 5.0 U | 5 U |
| 6/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 11/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| **MW-1D** | | | | | | | |
| 8/26/2010 | 0.5 U | 0.5 U | 0.5 U | 20 U | 0.5 U | 0.5 U | - |
| 2/23/2011 | 5.0 U | 5.0 U | 5.0 U | N/A | 5.0 U | N/A | 5.0 U |
| 8/2/2011 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/20/2012 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/30/2012 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/19/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/14/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/26/2014 | 5.0 U | 5.0 U | 5 U | 20 U | 5.0 U | 5 U | 5.0 U |
| 10/2/2014 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/24/2015 | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/6/2015 | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 3/9/2016 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/12/2016 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 2/1/2017 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/17/2017 | 5 U | 5 U | 5 U | 10 U | 5 U | 5 U | 5 U |
| 2/15/2018 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/2/2018 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 2/5/2019 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/21/2019 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 2/24/2020 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 8/31/2020 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 6/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 11/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |

**Table 5a**
**Groundwater Monitoring Results Summary - Volatile Organic Compounds**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Sampling Date | Analytical Parameters (µg/L) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Vinyl Chloride | 1, 2-DCE | MTBE | Tert-Butyl-Alcohol | 1,1,1-TCA | Tert-butyl benzene | Chlorobenzene |
| **Standard** | 2.0 | 5.0 | 10.0 | 20.0 | 5.0 | 5.0 | 5.0 |
| **MW-2S** | | | | | | | |
| 5/22/1997 | **4.0** J | 2.0 J | - | - | - | - | - |
| 11/14/1997 | **21** | 3.0 J | - | - | - | - | - |
| 5/19/1998 | **17** | 3.0 J | - | - | - | - | - |
| 11/5/1998 | **14** | 3.0 J | - | - | - | - | - |
| 5/25/1999 | **13** | 2.0 J | - | - | - | - | - |
| 11/18/1999 | **6.0** J | 10 U | - | - | - | - | - |
| 6/28/2000 | **7.8** | 1.6 | - | - | - | - | - |
| 11/15/2000 | 5.0 U | 5.0 U | - | - | - | - | - |
| 6/20/2001 | **7.6** | 1.2 | **190** | - | - | - | - |
| 11/29/2001 | 2.5 U | 0.5 U | **82** | **270** | - | - | - |
| 6/26/2002 | 1.6 | 1.0 U | **50** | **130** | - | - | - |
| 11/19/2002 | 5.0 U | 5.0 U | **56** | **210** | - | - | - |
| 6/24/2003 | **3.3** | 0.5 U | **270** | 20 U | - | - | - |
| 11/17/2003 | 1.2 | 0.5 U | **250** | **120** | - | - | - |
| 6/21/2004 | 0.96 | 0.5 U | **380** | **90** | - | - | - |
| 11/22/2004 | 0.64 | 0.5 U | **380** | **200** | - | - | - |
| 6/22/2005 | **7.7** | 1.1 | **16** | **23** | - | - | - |
| 11/22/2005 | **4.1** | 0.5 U | **61** | **90** | - | - | - |
| 7/5/2006 | **6.4** | 0.6 | **63** | **110** | - | - | - |
| 11/27/2006 | **4.0** | 0.5 U | **70** E | **110** | - | - | - |
| 6/27/2007 | **2.5** | 0.5 U | **93** E | **250** | - | - | - |
| 1/9/2008 | **2.2** | 0.5 U | **74** E | **350** | - | - | - |
| 7/23/2008 | **2.8** | 0.5 U | **12** | **37** | - | - | - |
| 2/20/2009 | 1.3 | 0.5 U | **16** | **43** | - | - | - |
| 8/27/2009 | 0.5 U | 0.5 U | **15** | **50** | - | - | - |
| 2/25/2010 | 0.5 U | 0.5 U | **24** | **65** | 0.6 | - | - |
| 8/26/2010 | 0.5 U | 0.5 U | **23** | **200** | 0.5 U | 0.5 U | - |
| 2/23/2011 | 5.0 U | 5.0 U | **22** | N/A | 5.0 U | N/A | 5.0 U |
| 8/2/2011 | **2.5 J** | 5.0 U | **16** | **37** | 5.0 U | 5.0 U | 5.0 U |
| 2/20/2012 | **4.5 J** | 5.0 U | 9.4 | 18.0 | 5.0 U | 5.0 U | 5.0 U |
| 8/30/2012 | **3.7 J** | 5.0 U | **14** | **21** | 5.0 U | 5.0 U | 5.0 U |
| 2/19/2013 | 1.5 | 5.0 U | 9.7 | 19.0 | 5.0 U | 5.0 U | 5.0 U |
| 8/14/2013 | **2.5 J** | 5.0 U | 8.2 | 19.5 | 5.0 U | 5.0 U | 5.0 U |
| 2/26/2014 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 10/2/2014 | 5.0 U | 5.0 U | 5.3 | 6.2 | 5.0 U | 5.0 U | 5.0 U |
| 2/24/2015 | 5.0 U | 5.0 U | 3.5 J | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/6/2015 | 5.0 U | 5.0 U | 2.7 J | 6.4 | 5.0 U | 5.0 U | 5.0 U |
| 3/9/2016 | 5 U | 5 U | 3.9 J | 8.4 | 5 U | 5 U | 5 U |
| 8/12/2016 | 5 U | 5 U | 2.9 J | 9.9 | 5 U | 5 U | 5 U |
| 2/1/2017 | 5 U | 5 U | 4.1 J | 14.0 Cal-E | 5 U | 5 U | 5 U |
| 8/17/2017 | 5 U | 5 U | 3.2 J | **28.0** | 5 U | 5 U | 5 U |
| 2/15/2018 | 5 U | 5 U | 4.3 J | 11.0 | 5 U | 5 U | 5 U |
| 8/2/2018 | 5 U | 5 U | 3.7 J | 2.0 U | 5 U | 5 U | 5 U |
| 2/5/2019 | 5 U | 5 U | 2.8 J | 17.0 | 5 U | 5 U | 5 U |
| 8/21/2019 | 5 U | 5 U | 5 U | 7.3 | 5 U | 5 U | 5 U |
| 2/24/2020 | 5 U | 5 U | 3.1 J | 8.2 J | 5 U | 5 U | 5 U |
| 8/31/2020 | 5 U | 5 U | 2.9 J | 12.0 | 5 U | 5 U | 5 U |
| 6/10/2021 | 5 U | 5 U | 5 U | 1.0 U | 5 U | 5 U | 5 U |
| 11/10/2021 | 5 U | 5 U | 3.0 J | 15 | 5 U | 5 U | 5 U |

**Table 5a**
**Groundwater Monitoring Results Summary - Volatile Organic Compounds**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Sampling Date | Analytical Parameters (µg/L) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Vinyl Chloride | 1, 2-DCE | MTBE | Tert-Butyl-Alcohol | 1,1,1-TCA | Tert-butyl benzene | Chlorobenzene |
| **Standard** | 2.0 | 5.0 | 10.0 | 20.0 | 5.0 | 5.0 | 5.0 |
| **MW-2D** | | | | | | | |
| 8/26/2010 | 0.5 U | 0.5 U | 0.5 U | 20 U | 0.5 U | 0.5 U | - |
| 2/23/2011 | 5.0 U | 5.0 U | 5.0 U | N/A | 5.0 U | N/A | 5.0 U |
| 8/2/2011 | 5.0 U | 5.0 U | 0.47 J | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/20/2012 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/30/2012 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/19/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/14/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/26/2014 | 5.0 U | 5.0 U | 5 U | 20 U | 5.0 U | 5 U | 5.0 U |
| 10/2/2014 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/24/2015 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/6/2015 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 3/9/2016 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/12/2016 | 5 U | 5 U | 5 U | 0.76 J | 5 U | 5 U | 5 U |
| 2/1/2017 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/17/2017 | 5 U | 5 U | 5 U | 1.3 J | 5 U | 5 U | 5 U |
| 2/15/2018 | 5 U | 5 U | 5 U | 0.83 J | 5 U | 5 U | 5 U |
| 8/2/2018 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 2/5/2019 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/21/2019 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 2/24/2020 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 8/31/2020 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 6/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 11/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |

**Table 5a**
**Groundwater Monitoring Results Summary - Volatile Organic Compounds**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Sampling Date | Analytical Parameters (µg/L) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Vinyl Chloride | 1, 2-DCE | MTBE | Tert-Butyl-Alcohol | 1,1,1-TCA | Tert-butyl benzene | Chlorobenzene |
| **Standard** | 2.0 | 5.0 | 10.0 | 20.0 | 5.0 | 5.0 | 5.0 |
| **MW-3S** | | | | | | | |
| 8/26/2010 | 0.5 U | 0.5 U | 0.5 U | 20 U | 0.5 U | 0.5 U | - |
| 2/23/2011 | 5.0 U | 5.0 U | 5.0 U | N/A | 5.0 U | N/A | 5.0 U |
| 8/2/2011 | 5.0 U | 5.0 U | 1.7 J | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/20/2012 | 5.0 U | 5.0 U | 1.5 J | 7.1 J | 5.0 U | 5.0 U | 5.0 U |
| 8/30/2012 | 5.0 U | 5.0 U | 1.5 J | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/19/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/14/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/26/2014 | 5.0 U | 5.0 U | 5 U | 20 U | 5.0 U | 5 U | 5.0 U |
| 10/2/2014 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/24/2015 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/6/2015 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 3/9/2016 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/12/2016 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 2/1/2017 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/17/2017 | 5 U | 5 U | 5 U | 10 U | 5 U | 5 U | 5 U |
| 2/15/2018 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/2/2018 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 2/5/2019 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/21/2019 | 5 U | 5 U | 5 U | 2.9 | 5 U | 5 U | 5 U |
| 2/24/2020 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/31/2020 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 6/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 11/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| **MW-3D** | | | | | | | |
| 8/26/2010 | 0.5 U | 0.5 U | 0.5 U | 20 U | 0.5 U | 0.5 U | - |
| 2/23/2011 | 5.0 U | 5.0 U | 5.0 U | N/A | 5.0 U | N/A | 1.6 J |
| 8/2/2011 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/20/2012 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/30/2012 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/19/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/14/2013 | 5.0 U | 5.0 U | 5.0 U | 8.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/26/2014 | 5.0 U | 5.0 U | 5 U | 20 U | 5.0 U | 5 U | 5.0 U |
| 10/2/2014 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2/24/2015 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 8/6/2015 | 5.0 U | 5.0 U | 5.0 U | 1.0 U | 5.0 U | 5.0 U | 5.0 U |
| 3/9/2016 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/12/2016 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 2/1/2017 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/17/2017 | 5 U | 5 U | 5 U | 0.62 J | 5 U | 5 U | 5 U |
| 2/15/2018 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/2/2018 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 2/5/2019 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/21/2019 | 5 U | 5 U | 5 U | 7.9 | 5 U | 5 U | 5 U |
| 2/24/2020 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 8/31/2020 | 5 U | 5 U | 5 U | 2 U | 5 U | 5 U | 5 U |
| 6/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |
| 11/10/2021 | 5 U | 5 U | 5 U | 1 U | 5 U | 5 U | 5 U |

U - Compound not detected.
J - Estimated value, less than detection limit.
E - Concentrations exceed the calibration range.
Cal-E - The value is estimated due to its behavior during initial calibration.
µg/L - micrograms per liter.
1,2-DCE - 1,2-dichloroethene.
MTBE - methy tert-butyl ether.
1,1,1-TCA - 1,1,1-trichloroethane.
N/A - Results not avaliable during this analysis.

# Table 5b
# Groundwater Monitoring Results Summary - Metals
# Taylor's Lane Compost Site
# Village of Mamaroneck

| Analytical Parameter | Sampling Date | MW-1S | MW-1D | MW-2S | MW-2D | MW-3S | MW-3D |
|---|---|---|---|---|---|---|---|
| **Arsenic** | 5/22/1997 | 3.7 J | 4.9 J | 4.4 J | 7.9 J | 7.1 J | 7.2 J |
| (µg/L) | 11/14/1997 | 17.2 | 5.2 J | 5.9 J | 4.6 J | 14.4 | 9.1 J |
| | 5/19/1998 | 8.3 J | 9.1 J | 7.6 J | 7.6 J | 15.2 | 13.1 |
| GW Standard | 11/5/1998 | 24.5 | **34.2** | 21.4 | 13.4 | 2.2 U | 2.2 U |
| 25.0 µg/L | 5/25/1999 | 6.8 U | 6.8 U | 6.8 U | 6.8 U | 6.8 U | 6.8 U |
| | 11/18/1999 | 2.9 U | 2.9 U | 2.9 U | 2.9 U | 7.8 | 2.9 U |
| | 6/28/2000 | 2.9 U | 2.9 U | 2.9 U | 2.9 U | 3.6 J | 2.9 U |
| | 11/15/2000 | 11.2 | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 6/20/2001 | 3.5 U | 3.5 U | 3.5 U | 3.5 U | 6.87 | 3.5 U |
| | 11/29/2001 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 6/26/2002 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 11/19/2002 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 6/24/2003 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 11/17/2003 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 6/21/2004 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 11/22/2004 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 6/22/2005 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 11/22/2005 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 7/5/2006 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 11/27/2006 | 10 U | 10 U | 10 U | 10 U | 22.6 | 10 U |
| | 6/27/2007 | 10 U | 10 U | 10 U | 10 U | 10 U | 21.9 |
| | 1/9/2008 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 7/23/2008 | 19.9 | 10 U | 10 U | 10 U | 11.6 | 10 U |
| | 2/20/2009 | 12 | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 8/27/2009 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 2/25/2010 | 16 | 10 U | 10 U | 10 U | 11 | 10 U |
| | 8/26/2010 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 2/23/2011 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 8/2/2011 | 19.8 | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 2/20/2012 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 8/30/2012 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 2/19/2013 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 8/14/2013 | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| | 2/26/2014 | 4.45 | 4 U | NA | 4 U | 4 U | 4 U |
| | 10/2/2014 | 6.13 | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 2/24/2015 | 5.89 | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 8/6/2015 | 11.6 | 4.28 | 4 U | 4 U | 4 U | 4 U |
| | 3/9/2016 | 10.2 | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 8/12/2016 | 9.8 | 4 U | 6.66 | 4 U | 4 U | 4 U |
| | 2/1/2017 | 9.53 | 4 U | 4 U | 4 U | 4 U | 4.67 |
| | 8/17/2017 | 12.2 | 6.18 | 4.59 | 4 U | 4 U | 7.36 |
| | 2/15/2018 | 7.48 | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 8/2/2018 | 4 U | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 2/5/2019 | 22.6 | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 8/21/2019 | 4 U | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 2/24/2020 | 4 U | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 8/31/2020 | **188** | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 6/10/2021 | **43.5** | 4 U | 4 U | 4 U | 4 U | 4 U |
| | 11/10/2021 | 4 U | 4 U | 4 U | 4 U | 4 U | 4 U |

J - Estimated value, less than detection limit.

U - Analyte was analyzed for, but not detected.

B - The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL).

# Table 5b
# Groundwater Monitoring Results Summary - Metals
# Taylor's Lane Compost Site
# Village of Mamaroneck

| Analytical Parameter | Sampling Date | MW-1S | MW-1D | MW-2S | MW-2D | MW-3S | MW-3D |
|---|---|---|---|---|---|---|---|
| **Cadmium** | 5/22/1997 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| (µg/L) | 11/14/1997 | 3.3 J | 0.6 U | 1.2 J | 0.85 J | 2.8 J | 1.9 J |
| | 5/19/1998 | 0.81 J | 0.2 J | 0.67 J | 0.36 J | 1.3 J | 2.6 J |
| GW Standard | 11/5/1998 | 1.1 J | 0.75 U | 0.87 J | 1.2 J | 4.2 J | 0.75 U |
| 5.0 µg/L | 5/25/1999 | 1.4 J | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 4.9 J |
| | 11/18/1999 | 2.8 | 0.34 U | 2.1 | 0.34 U | 4.8 | 1.6 |
| | 6/28/2000 | 1.1 J | 0.22 U | 1.4 J | 0.22 U | 1.1 J | 0.22 U |
| | 11/15/2000 | 5 U | 5 U | 5 U | 5 U | 5 U | 5.1 |
| | 6/20/2001 | 3.21 | 2.33 | 4 | 0.85 U | 4.54 | 0.85 U |
| | 11/29/2001 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 6/26/2002 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 11/19/2002 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 6/24/2003 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 11/17/2003 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 6/21/2004 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 11/22/2004 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 6/22/2005 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 11/22/2005 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 7/5/2006 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 11/27/2006 | 5 U | 5 U | 5 U | 5 U | **10.4** | 5 U |
| | 6/27/2007 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 1/9/2008 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 7/23/2008 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 2/20/2009 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 8/27/2009 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 2/25/2010 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 8/26/2010 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 2/23/2011 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 8/2/2011 | 4.9 | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 2/20/2012 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 8/30/2012 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 2/19/2013 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 8/14/2013 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 2/26/2014 | 3 U | 3 U | NA | 3 U | 3 U | 3 U |
| | 10/2/2014 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 2/24/2015 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 8/6/2015 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 3/9/2016 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 8/12/2016 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 2/1/2017 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 8/17/2017 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 2/15/2018 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 8/2/2018 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 2/5/2019 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 8/21/2019 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 2/24/2020 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 8/31/2020 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 6/10/2021 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |
| | 11/10/2021 | 3 U | 3 U | 3 U | 3 U | 3 U | 3 U |

J - Estimated value, less than detection limit.

U - Analyte was analyzed for, but not detected.

B - The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL).

# Table 5b
# Groundwater Monitoring Results Summary - Metals
# Taylor's Lane Compost Site
# Village of Mamaroneck

| Analytical Parameter | Sampling Date | MW-1S | MW-1D | MW-2S | MW-2D | MW-3S | MW-3D |
|---|---|---|---|---|---|---|---|
| **Copper** | 5/22/1997 | 5.7 J | 3.6 J | 19.9 J | 1.7 U | 18.8 J | 14.5 J |
| (µg/L) | 11/14/1997 | 46.5 | 13.1 J | 34.2 | 7.7 J | 74.3 | 35.3 |
| | 5/19/1998 | 9.3 J | 3.7 J | 5.7 J | 4.5 J | 26.8 | 12.3 J |
| GW Standard | 11/5/1998 | 8.3 J | 16.6 J | 13.9 J | 77.4 | 15.5 J | 85.8 |
| 200.0 µg/L | 5/25/1999 | 6.8 J | 21.4 J | 7.2 J | 18.5 J | 9.4 J | 17.5 J |
| | 11/18/1999 | 21.8 | 23.1 | 103 | 7.6 | **478** | 22.1 |
| | 6/28/2000 | 3.7 U | 15 J | 36 | 3.7 U | **255** | 3.7 U |
| | 11/15/2000 | 87 | 38.4 | 20 U | 20 U | 43.2 | 20 U |
| | 6/20/2001 | 10.3 | 17.7 | 145 | 17.1 | **520** | 16 |
| | 11/29/2001 | 20 U | 20 U | 25.9 | 20 U | **204** | 20 U |
| | 6/26/2002 | 20 U | 23 | 20 U | 20 U | 20 U | 20 U |
| | 11/19/2002 | 20 U | 40 | 47 | 20 U | 20 U | 20 U |
| | 6/24/2003 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| | 11/17/2003 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| | 6/21/2004 | 20 U | 20 U | 20 U | 20 U | 27.4 | 20 U |
| | 11/22/2004 | 20 U | 20 U | 20 U | 20 U | 56 | 20 U |
| | 6/22/2005 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| | 11/22/2005 | 20 U | 31.2 | 20 U | 20 U | 20 U | 20 U |
| | 7/5/2006 | 20 U | 20 U | 20 U | 20 U | 26 | 20 U |
| | 11/27/2006 | 21.6 | 64.1 | 28.5 | 20 U | 38.7 | 20 U |
| | 6/27/2007 | 20 U | 20 U | 20 U | 20 U | 20 U | 106 |
| | 1/9/2008 | 51.8 | 37.5 | 20 U | 20 U | 74.5 | 20 U |
| | 7/23/2008 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| | 2/20/2009 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| | 8/27/2009 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| | 2/25/2010 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| | 8/26/2010 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| | 2/23/2011 | 11.3 | 11.9 | 18.2 | 25.2 | 65.8 | 6.8 |
| | 8/2/2011 | 188 | 7.98 | 8.96 | 5.64 | 13.3 | 15.2 |
| | 2/20/2012 | 69.9 | 15.0 | 53.2 | 51.3 | 5.0 U | 13.9 |
| | 8/30/2012 | 36.8 | 14.7 | 21.9 | 32.7 | 18.4 | 14.3 |
| | 2/19/2013 | 21.4 | 10.2 | 7.8 | 6.53 | 5 U | 11.5 |
| | 8/14/2013 | 42.7 | 11.3 | 18.2 | 15.8 | 12.6 | 13.5 |
| | 2/26/2014 | 8.21 | 3 U | NA | 3 U | 12.8 | 7.16 |
| | 10/2/2014 | 4.39 | 3 U | 15.2 | 3 U | 10.2 | 5.51 |
| | 2/24/2015 | 11.8 | 3 U | 20.3 | 3 U | 10.5 | 9.52 |
| | 8/6/2015 | 62 | 10.8 | 80.1 | 7.23 | 18.4 | 11.9 |
| | 3/9/2016 | 12 | 5.0 | 9.44 | 4.83 | 15.0 | 12.1 |
| | 8/12/2016 | 20.7 | 6.6 | 61.6 | 6.27 | 17.9 | 13.3 |
| | 2/1/2017 | 13.7 | 3 U | 67.4 | 3.39 | 13.4 | 9.72 |
| | 8/17/2017 | 26 B | 22.0 U | 22.5 B | 22 U | 39.4 B | 28.9 B |
| | 2/15/2018 | 16.6 B | 15.1 B | 44.2 B | 25.4 B | 53.3 B | 26.7 B |
| | 8/2/2018 | 6.21 | 7.2 | 14.8 | 7.49 | 48.3 | 19.3 |
| | 2/5/2019 | 38.5 | 3 U | 3 U | 3 U | 128.0 | 25.5 |
| | 8/21/2019 | 108 | 3 U | 3 U | 3 U | 49.0 | 3 U |
| | 2/24/2020 | 67 | 3 U | 3 U | 3 U | 41.9 | 3 U |
| | 8/31/2020 | 42.9 | 3 U | 67.9 | 3 U | **236.0** | 37.2 |
| | 6/10/2021 | 52.6 | 3 U | 38 | 3 U | 44.2 | 3 U |
| | 11/10/2021 | 3 U | 3 U | 3 U | 3 U | 30.8 | 3 U |

J - Estimated value, less than detection limit.

U - Analyte was analyzed for, but not detected.

B - The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL).

# Table 5b
# Groundwater Monitoring Results Summary - Metals
# Taylor's Lane Compost Site
# Village of Mamaroneck

| Analytical Parameter | Sampling Date | MW-1S | MW-1D | MW-2S | MW-2D | MW-3S | MW-3D |
|---|---|---|---|---|---|---|---|
| **Lead** | 5/22/1997 | 1.1 U | 1.1 U | 4.4 | 1.1 U | 12.7 | 21.2 |
| (µg/L) | 11/14/1997 | 2.4 J | 0.7 U | 2.9 J | 0.7 U | **36.1** | 18.2 |
| | 5/19/1998 | 1.4 J | 0.7 U | 0.81 J | 0.7 U | 14.6 | 16.6 |
| GW Standard | 11/5/1998 | 1.8 U | 1.8 U | 1.8 U | 1.8 U | 6.1 | 23.5 |
| 25.0 µg/L | 5/25/1999 | 1.8 U | 1.8 U | 1.8 U | 1.8 U | 13 | 12.7 |
| | 11/18/1999 | 0.99 U | 0.99 U | 21 | 0.99 U | **68** | 3.6 |
| | 6/28/2000 | 2.3 U | **44.4** | 7.2 | 2.3 U | **98.5** | 17.5 |
| | 11/15/2000 | 5 U | **91.8** | 8.05 | 5 U | 22.5 | 19.6 |
| | 6/20/2001 | 1.69 | **37.9** | **45.2** | 5.13 | **62.3** | 7.28 |
| | 11/29/2001 | 5 U | 5 U | 5 U | 5 U | 21.5 | 5 U |
| | 6/26/2002 | 5 U | 5 U | 5.88 | 5 U | 5 U | 5 U |
| | 11/19/2002 | 5 U | 5.64 | 13.2 | 5 U | 5.07 | 5 U |
| | 6/24/2003 | 5 U | 5 U | 5 U | 5 U | 6.81 | 5 U |
| | 11/17/2003 | 5 U | 5 U | 5 U | 5 U | 21.5 | 5 U |
| | 6/21/2004 | 5 U | 5 U | 5 U | 5 U | 17.8 | 5 U |
| | 11/22/2004 | 5 U | 5 U | 5 U | 5 U | 10.1 | 12.4 |
| | 6/22/2005 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 11/22/2005 | 5 U | 10.7 | 5 U | 5 U | 11.3 | 5.58 |
| | 7/5/2006 | 5 U | 5 U | 5 U | 5 U | 6 | 5 U |
| | 11/27/2006 | 5 U | 13.2 | 11.7 | 5 U | **54.2** | 7.3 |
| | 6/27/2007 | 5 U | 13.2 | 11.7 | 5 U | **54.2** | 7.3 |
| | 1/9/2008 | 5 U | 5 U | 5 U | 5 U | 5 U | **72.5** |
| | 7/23/2008 | 6.7 | 11 | 6.7 | 5 U | 5.9 | 11.5 |
| | 2/20/2009 | 26.5 | 6.5 | 10.5 | 10.4 | 16.1 | 5 U |
| | 2/20/2009 | 5.7 | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 8/27/2009 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 2/25/2010 | 5.3 | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 8/26/2010 | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| | 2/23/2011 | **528** | **72.7** | **217** | 6.9 | **117** | 3 U |
| | 8/2/2011 | **1,550** | 13.2 | **56.3** | 4.86 | 16.5 | 6.16 |
| | 2/20/2012 | **483** | 10.1 | **324** | 12.0 | 3.28 | 3 U |
| | 8/30/2012 | **762** | 18.3 | **152** | 7.3 | 9.7 | 3 U |
| | 2/19/2013 | **423** | 7.5 | **52.1** | 5 U | 4.0 | 3 U |
| | 8/14/2013 | **508** | 9.8 | **124** | 8.4 | 12.6 | 3 U |
| | 2/26/2014 | **49.1** | 13.4 | NA | 3 U | 24.8 | 3 U |
| | 10/2/2014 | **50.7** | 3 U | **218** | 3 U | 13.0 | 3 U |
| | 2/24/2015 | **119** | 3 U | **358** | 3 U | 13.4 | 3 U |
| | 8/6/2015 | **153** | 6.11 | **218** | 3 U | 12.5 | 3 U |
| | 3/9/2016 | **87.9** | 3 U | **41.7** | 3 U | 7.6 | 3 U |
| | 8/12/2016 | **49.5** | 3 U | **168** | 3 U | 8.39 | 3 U |
| | 2/1/2017 | **31.3** | 3 U | **188** | 3 U | 3 U | 3 U |
| | 8/17/2017 | **201.0** B | 11 U | **276** B | 11 U | 11 U | 11 U |
| | 2/15/2018 | **33.4** | 5 U | **216** | 5 U | 5 U | 5 U |
| | 8/2/2018 | **34.9** | 5 U | **160** | 5 U | 10.4 | 5 U |
| | 2/5/2019 | **95.2** | 5 U | **57.4** | 5 U | 5 U | 5 U |
| | 8/21/2019 | **295** | 5 U | **37.5** | 5 U | 5 U | 5 U |
| | 2/24/2020 | **142** | 5 U | 13.3 | 5 U | 5 U | 5 U |
| | 8/31/2020 | **107** | 5 U | **214** | 5 U | 5 U | 5 U |
| | 6/10/2021 | **112** | 5 U | **81.3** | 5 U | 5 U | 5 U |
| | 11/10/2021 | **167** | 5 U | **32.7** | 5 U | 5 U | 5 U |

J - Estimated value, less than detection limit.

U - Analyte was analyzed for, but not detected.

B - The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL).

# Table 5b
# Groundwater Monitoring Results Summary - Metals
# Taylor's Lane Compost Site
# Village of Mamaroneck

| Analytical Parameter | Sampling Date | MW-1S | MW-1D | MW-2S | MW-2D | MW-3S | MW-3D |
|---|---|---|---|---|---|---|---|
| **Mercury** | 5/22/1997 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| (µg/L) | 11/14/1997 | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| | 5/19/1998 | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| GW Standard | 11/5/1998 | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| 0.7 µg/L | 5/25/1999 | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U | 0.05 U |
| | 11/18/1999 | 0.04 U | 0.04 U | 0.09 | 0.04 U | 0.27 | 0.04 U |
| | 6/28/2000 | 0.05 J | 0.01 U | 0.02 J | 0.01 U | 0.34 | 0.04 J |
| | 11/15/2000 | 0.03 U | 0.03 U | 0.03 U | 0.03 U | 0.03 U | 0.03 U |
| | 6/20/2001 | 0.03 U | 0.03 U | 0.03 U | 0.03 U | 0.28 | 0.03 U |
| | 11/29/2001 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 6/26/2002 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 11/19/2002 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 6/24/2003 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 11/17/2003 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 6/21/2004 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 11/22/2004 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 6/22/2005 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 11/22/2005 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 7/5/2006 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 11/27/2006 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 6/27/2007 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 1/9/2008 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 7/23/2008 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 2/20/2009 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 8/27/2009 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 2/25/2010 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 8/26/2010 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| | 2/23/2011 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 8/2/2011 | 0.2 U | 0.2 U | 0.2 U | 0.3 | 0.2 U | 0.2 U |
| | 2/20/2012 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 8/30/2012 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 2/19/2013 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 8/14/2013 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 2/26/2014 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 10/2/2014 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 2/24/2015 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 8/6/2015 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 3/9/2016 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 8/12/2016 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 2/1/2017 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 8/17/2017 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 2/15/2018 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 8/2/2018 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 2/5/2019 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 8/21/2019 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 2/24/2020 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 8/31/2020 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 6/10/2021 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| | 11/10/2021 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |

J - Estimated value, less than detection limit.

U - Analyte was analyzed for, but not detected.

B - The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL).

# Table 5b
# Groundwater Monitoring Results Summary - Metals
# Taylor's Lane Compost Site
# Village of Mamaroneck

| Analytical Parameter | Sampling Date | MW-1S | MW-1D | MW-2S | MW-2D | MW-3S | MW-3D |
|---|---|---|---|---|---|---|---|
| **Zinc** | 5/22/1997 | 20 | 17.2 J | 31.3 | 12.6 J | 83.7 | 931 |
| (µg/L) | 11/14/1997 | 74.2 | 37 | 75 | 10.6 J | 102 | 514 |
| | 5/19/1998 | 130 | 12.7 J | 23.7 | 10.6 | 48.7 | 806 |
| GW Standard | 11/5/1998 | 13.9 J | 27.9 | 23.3 | 51.4 | 29.9 | 659 |
| 2,000 µg/L | 5/25/1999 | 15 J | 36.7 | 16.2 J | 8.8 | 21.8 | 558 |
| | 11/18/1999 | 26.8 | 38 | 95.6 | 20.4 | 102 | 101 |
| | 6/28/2000 | 7.9 J | 104 | 202 | 21.3 | 432 | 941 |
| | 11/15/2000 | 20 U | 1650 | 52.8 | 26.8 | 122 | **2040** |
| | 6/20/2001 | 25 | 630 | 274 | 72.6 | 314 | 246 |
| | 11/29/2001 | 20 U | 29.5 | 23.1 | 20 U | 56.5 | 56.4 |
| | 6/26/2002 | 20 U | 28.2 | 76.8 | 20 U | 20 U | 20 U |
| | 11/19/2002 | 20 U | 69.6 | 65.2 | 20 U | 20 U | 20 U |
| | 6/24/2003 | 20 U | 20 U | 20 U | 42.9 | 20 U | 20 U |
| | 11/17/2003 | 20 U | 20 U | 20 U | 55.5 | 38.6 | 20 U |
| | 6/21/2004 | 21 | 20 U | 20 U | 55.5 | 45.7 | 20 U |
| | 11/22/2004 | 20 U | 20 U | 20 U | 20 U | 113 | 20 U |
| | 6/22/2005 | 20 U | 20 U | 20 U | 20 U | 113 | 20 U |
| | 11/22/2005 | 20.5 | 144 | 32.9 | 20 U | 33.3 | 58.6 |
| | 7/5/2006 | 25 | 51 | 20 U | 20 U | 20 U | 20 U |
| | 11/27/2006 | 23.3 | 352 | 84.7 | 20 U | 64.4 | 65.5 |
| | 6/27/2007 | 20 U | 20 U | 20 U | 20 U | 20 U | 1150 |
| | 1/9/2008 | 138 | 343 | 31.7 | 20 U | 45.6 | 148 |
| | 7/23/2008 | 38.9 | 20 U | 29.7 | 20 U | 69.5 | 61.4 |
| | 2/20/2009 | 20 U | 20 U | 20 U | 20 U | 45 | 44 |
| | 8/27/2009 | 20 U | 20 U | 20 U | 20 U | 28 | 38 |
| | 2/25/2010 | 20 U | 20 U | 20 U | 20 U | 62 | 42 |
| | 8/26/2010 | 20 U | 20 U | 20 U | 20 U | 30 | 37 |
| | 2/23/2011 | 949 | 88.9 | 231 | 58.2 | 140 | 53 |
| | 8/2/2011 | 1,690 | 25.9 | 75.6 | 30.7 | 47.7 | 47.0 |
| | 2/20/2012 | 712 | 34.5 | 414 | 66.4 | 49.0 | 52.5 |
| | 8/30/2012 | 1,132 | 56.5 | 256 | 59.1 | 53.0 | 49.1 |
| | 2/19/2013 | 820 | 27.1 | 81.6 | 32.4 | 38.5 | 41.3 |
| | 8/14/2013 | 938 | 36.8 | 139 | 44.3 | 44.0 | 55.2 |
| | 2/26/2014 | 124 | 29.2 | NA | 20.6 | 62.7 | 40.1 |
| | 10/2/2014 | 128 | 16.3 | 254 | 16.9 | 62.9 | 35.8 |
| | 2/24/2015 | 160 | 11.2 | 383 | 10.4 | 53.8 | 32.0 |
| | 8/6/2015 | 244 | 33.4 | 256 | 15.4 | 79.1 | 30.7 |
| | 3/9/2016 | 155 | 19.6 | 60.7 | 3U | 64.5 | 30.3 |
| | 8/12/2016 | 118 | 13.8 | 204 | 13 | 88.7 | 32.2 |
| | 2/1/2017 | 70.8 | 16.5 | 233 | 17.1 | 74.5 | 26.7 |
| | 8/17/2017 | 297 B | 35.2 B | 328 B | 18.9 B | 95.1 B | 41.7 B |
| | 2/15/2018 | 70.8 | 20 U | 229 | 17.1 | 76.4 | 34.1 |
| | 8/2/2018 | 48.6 | 20 U | 158 | 20 U | 37.3 | 20.0 U |
| | 2/5/2019 | 184 | 37.1 | 82.3 | 20 U | 75.9 | 28.9 |
| | 8/21/2019 | 399 | 20 U | 54.4 | 20 U | 871 | 721.0 |
| | 2/24/2020 | 216 | 20 U | 54.5 | 20 U | 319 | 89.9 |
| | 8/31/2020 | 156 | 20 U | 248 | 20 U | 131 | 20.0 U |
| | 6/10/2021 | 147 | 31 | 124 | 20 U | 58.6 | 20.0 U |
| | 11/10/2021 | 211 | 20 U | 50.7 | 20 U | 34.1 | 20 U |

J - Estimated value, less than detection limit.

U - Analyte was analyzed for, but not detected.

B - The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL).

**Table 6a**
**Groundwater Field Sampling / Elevation Data - November 10, 2021 Monitoring Event**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

# TAYLOR LANE, MAMARONECK - FIELD DATA - 11/10/2021

## Groundwater Sampling Data

| MW # | Well Survey Elevation | Well Size | Metal or PVC | TPVC (in ft) (Top of PVC) | TOC (in ft) (Top of Casing) | BPVC (in ft) (Bottom of PVC) | BOC (in ft) (Bottom of Casing) | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| **1S** | **18.28** | **2"** | **PVC** | 2.81 | 3.08 | 19.17 | 19.44 | 15.20 |
| **1D** | **18.99** | **2"** | **PVC** | 3.49 | 3.75 | 65.52 | 65.78 | 15.24 |
| **2S** | **16.71** | **2"** | **PVC** | 2.06 | 2.41 | 16.30 | 16.65 | 14.30 |
| **2D** | **17.05** | **2"** | **PVC** | 1.83 | 2.00 | 68.06 | 68.34 | 15.05 |
| **3S** | **13.35** | **2"** | **PVC** | 3.70 | 4.04 | 21.08 | 21.41 | 9.31 |
| **3D** | **13.25** | **2"** | **PVC** | 3.41 | 3.65 | 31.31 | 31.52 | 9.60 |

**Water Quality Parameters**

| MW # | Sampling Time | Gallons Purged | pH (SU) | Conductivity (mS/cm2) | Temp. (oC) | ORP (mv) | Turbidity (NTU) |
|---|---|---|---|---|---|---|---|
| **1S** | 845 | 12 | 7.36 | 918 | 15.4 | -20.1 | 60 |
| **1D** | 915 | 18 | 7.79 | 974 | 14.6 | -44.9 | 95 |
| **2S** | 940 | 12 | 7.75 | 1191 | 15.2 | -42.6 | 11 |
| **2D** | 1000 | 18 | 8.15 | 925 | 14.4 | -65.2 | 4.6 |
| **3S** | 1040 | 8 | 7.04 | 1387 | 15.4 | -2.7 | 4.3 |
| **3D** | 1052 | 12 | 7.12 | 1438 | 16.0 | -6.8 | 2.4 |

**Well Notes For Sampling**

| | |
|---|---|
| **1S** | Cloudy, no odors |
| **1D** | Cloudy, no odors |
| **2S** | Clear, black tint, no odors ****Bottom of protective casing rotted out**** |
| **2D** | Clear,some small black particles, no odors ****Bottom of protective casing rotted out**** |
| **3S** | Orange tint, small orange particles, sheen, white slime, petrol odors |
| **3D** | Clear, small orange particles, sheen, white slime, petrol odors |

**Water Levels and Elevations**

| ID | Elevation | Size | Type | TPVC | TOC | BPVC | BOC | ELEVATION |
|---|---|---|---|---|---|---|---|---|
| **14D** | **18.78** | **2"** | **Metal** | 2.34 | 2.73 | 79.05 | 79.45 | 16.05 |
| **14S** | **18.39** | **2"** | **Metal** | 3.32 | 3.25 | 15.30 | 15.24 | 15.14 |
| **14M** | **18.67** | **2"** | **Metal** | 3.54 | 3.54 | 30.05 | 30.22 | 15.13 |
| | | | | | | | | |
| **15D** | **17.23** | **2"** | **Metal** | 3.29 | 3.87 | 38.25 | 38.83 | 13.36 |
| | | | | | | | | |
| **4D** | **18.5** | **2"** | **PVC** | 2.89 | 3.66 | 16.87 | 17.84 | 14.84 |
| **4S** | **17.66** | **2"** | **PVC** | 2.27 | 2.62 | 12.47 | 12.73 | 15.04 |
| **4M** | **20.53** | | **Metal** | 3.65 | 4.42 | 18.49 | 19.27 | 16.11 |
| | | | | | | | | |
| **9D** | **32.85** | **4"** | **Metal** | 12.34 | 13.10 | 69.41 | 70.18 | 19.75 |
| **9S** | **32.61** | **2"** | **Metal** | 11.28 | 11.44 | 18.49 | 18.69 | 21.17 |
| | | | | | | | | |
| **#2-PZ-A** | **19.04** | **2"** | **PVC** | NA | NA | 14.63 | 14.81 | NA |
| **#1-PZ-B** | **17.22** | **2"** | **PVC** | NF | NF | 14.63 | 14.81 | #VALUE! |
| **#3-PZ-C** | **19.33** | **2"** | **PVC** | 4.45 | 4.55 | 15.27 | 15.42 | 14.78 |
| **PZ-D** | **17.49** | **2"** | **PVC** | Damaged | Damaged | 7.18 | 7.20 | NA |
| **LEACH** | **17.03** | **14"** | **Metal** | NO PVC | 5.89 | NA | 16.55 | 11.14 |
| | | | | | | | | |
| **MW-6** | **14.97** | **6"** | **PVC** | PVC Cap Stuck | N/A | | | NA |
| | | | | | | | | |

**Notes:** **N/F** : Not found due to high grass or deep snow.
**N/S** : No sample due to dry well or frozen well from extreme cold temps.
*PVC 0.07 ABOVE TOC

**Table 6b**
**Groundwater Monitoring Events Field Parameters Summary**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Well ID | Date | Temp. (C) | pH (S.U.) | Eh (mv) | Specific Conductance (µS) |
|---|---|---|---|---|---|
| MW-1S | 5/22/1997 | 15.1 | 6.82 | 0.8 | 720 |
| | 11/14/1997 | 12.8 | 6.64 | 102.5 | 904 |
| | 5/19/1998 | 17.1 | 5.63 | 73.4 | 700 |
| | 11/5/1998 | 16.5 | 6.08 | 48.6 | 800 |
| | 5/25/1999 | 14.9 | 6.22 | 33.3 | 800 |
| | 11/18/1999 | 14.4 | 6.12 | 50.5 | 720 |
| | 6/28/2000 | 18.1 | 6.53 | 11.0 | 700 |
| | 11/15/2000 | 11.3 | 6.10 | -45.8 | 600 |
| | 6/20/2001 | 17.8 | 6.40 | 24.4 | 560 |
| | 11/29/2001 | 13.2 | 5.91 | 50.4 | 455 |
| | 6/26/2002 | 17.1 | 6.24 | 38.2 | 550 |
| | 11/19/2002 | 12.9 | 6.29 | 21.1 | 768 |
| | 6/24/2003 | 14.5 | 6.21 | 68.5 | 941 |
| | 11/17/2003 | 13.5 | 6.46 | 18.5 | 866 |
| | 6/21/2004 | 14.9 | 6.13 | 49.1 | 800 |
| | 11/22/2004 | 13.7 | 6.70 | 19.2 | 655 |
| | 6/22/2005 | 15.9 | 6.97 | 15.7 | 880 |
| | 11/22/2005 | 11.3 | 6.86 | 4.9 | 945 |
| | 7/5/2006 | 13.8 | 6.68 | 18.4 | 302 |
| | 11/27/2006 | 14.1 | 6.94 | 20.2 | 249 |
| | 6/27/2007 | 16.7 | 6.87 | 15.3 | 969 |
| | 1/9/2008 | 12.5 | 7.29 | 103.4 | 106 |
| | 7/23/2008 | 14.8 | 7.13 | -134.1 | 1255 |
| | 2/20/2009 | 10.1 | 6.83 | -123.8 | 1151 |
| | 8/27/2009 | 21.4 | 7.41 | -180.1 | 963 |
| | 2/25/2010 | 9.8 | 7.43 | -136.3 | 666 |
| | 8/26/2010 | 16.0 | 7.17 | -62.9 | 1001 |
| | 2/23/2011 | 13.0 | 7.74 | -16.8 | 975 |
| | 8/2/2011 | 18.9 | 6.69 | -10.9 | 914 |
| | 2/20/2012 | 13.0 | 6.72 | -12.2 | 197 |
| | 8/30/2012 | 15.3 | 6.78 | -11.8 | 1047 |
| | 2/19/2013 | 11.4 | 7.29 | -38.8 | 779 |
| | 8/14/2013 | 15.0 | 7.25 | -20.3 | 840 |
| | 2/26/2014 | 8.7 | 7.42 | -48.8 | 1333 |
| | 10/2/2014 | 15.0 | 7.27 | -37.0 | 384 |
| | 2/24/2015 | 8.0 | 7.68 | -59.6 | 383 |
| | 8/6/2015 | 14.5 | 7.64 | -23.5 | 335 |
| | 3/9/2016 | 13.9 | 7.18 | -32.4 | 1037 |
| | 8/12/2016 | 19.3 | 7.49 | -53.2 | 868 |
| | 2/1/2017 | 9.8 | 7.96 | -78.0 | 884 |
| | 8/17/2017 | 14.8 | 7.45 | -63.7 | 927 |
| | 2/15/2018 | 10.8 | 7.71 | -76.4 | 415 |
| | 8/2/2018 | 16.1 | 7.74 | -92.5 | 994 |
| | 2/5/2019 | 11.0 | 7.91 | -105.3 | 1421 |
| | 8/21/2019 | 18.1 | 7.75 | -95.7 | 1220 |
| | 2/24/2020 | 12.1 | 7.99 | -103.6 | 1165 |
| | 8/31/2020 | 22.2 | 8.16 | -113.6 | 1015 |
| | 6/10/2021 | 18.4 | 8.70 | -141.9 | 1020 |
| | 11/10/2021 | 15.4 | 7.36 | -20.1 | 918 |

Notes:
(µS): Units of Conductivity (micro Siemens)

**Table 6b**
**Groundwater Monitoring Events Field Parameters Summary**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Well ID | Date | Temp. (C) | pH (S.U.) | Eh (mv) | Specific Conductance (µS) |
|---|---|---|---|---|---|
| MW-1D | 5/22/1997 | 16.0 | 6.72 | 4.7 | 430 |
| | 11/14/1997 | 11.4 | 7.41 | 82.0 | 596 |
| | 5/19/1998 | 18.6 | 7.19 | -10.8 | 448 |
| | 11/5/1998 | 16.2 | 7.05 | -26.2 | 600 |
| | 5/25/1999 | 17.5 | 6.32 | 28.6 | 449 |
| | 11/18/1999 | 12.8 | 7.88 | -44.5 | 550 |
| | 6/28/2000 | 18.9 | 8.08 | -79.3 | 500 |
| | 11/15/2000 | 12.2 | 7.78 | -39.3 | 420 |
| | 6/20/2001 | 18.1 | 8.12 | -73.8 | 540 |
| | 11/29/2002 | 13.0 | 7.25 | -39.6 | 450 |
| | 6/26/2002 | 17.8 | 7.82 | -48.9 | 450 |
| | 11/19/2002 | 12.6 | 7.64 | -56.9 | 486 |
| | 6/24/2003 | 14.9 | 8.06 | -23.2 | 573 |
| | 11/17/2003 | 12.0 | 8.20 | -80.1 | 465 |
| | 6/21/2004 | 13.5 | 7.86 | -48.1 | 513 |
| | 11/22/2004 | 12.9 | 7.49 | -23.3 | 395 |
| | 6/22/2005 | 17.6 | 7.30 | -56.6 | 464 |
| | 11/22/2005 | 9.9 | 7.22 | -14.7 | 486 |
| | 7/5/2006 | 15.6 | 7.67 | -33.7 | 586 |
| | 11/27/2006 | 13.7 | 7.66 | -40.7 | 301 |
| | 6/27/2007 | 17.0 | 7.34 | -18.0 | 585 |
| | 1/9/2008 | 12.5 | 7.16 | -52.7 | 601 |
| | 7/23/2008 | 15.1 | 7.67 | -179.6 | 624 |
| | 2/20/2009 | 11.1 | 7.19 | -37.8 | 597 |
| | 8/27/2009 | 22.7 | 7.71 | 13.6 | 540 |
| | 2/25/2010 | 9.8 | 7.84 | 60.4 | 391 |
| | 8/26/2010 | 16.4 | 7.65 | 199.9 | 541 |
| | 2/23/2011 | 14.3 | 8.46 | -53.1 | 658 |
| | 8/2/2011 | 16.9 | 7.61 | -56.5 | 666 |
| | 2/20/2012 | 13.6 | 7.52 | -54.0 | 777 |
| | 8/30/2012 | 16.5 | 7.50 | -55.4 | 713 |
| | 2/19/2013 | 11.4 | 7.63 | -60.8 | 800 |
| | 8/14/2013 | 15.8 | 7.48 | -58.6 | 790 |
| | 2/26/2014 | 7.1 | 7.35 | -72.2 | 884 |
| | 10/2/2014 | 14.1 | 7.44 | -50.0 | 392 |
| | 2/24/2015 | 11.6 | 7.73 | -65.5 | 351 |
| | 8/6/2015 | 14.8 | 7.88 | -23.5 | 333 |
| | 3/9/2016 | 14.4 | 7.72 | -66.0 | 1022 |
| | 8/12/2016 | 16.9 | 7.82 | -73.7 | 924 |
| | 2/1/2017 | 10.1 | 8.18 | -92.6 | 882 |
| | 8/17/2017 | 14.4 | 7.81 | -83.4 | 921 |
| | 2/15/2018 | 11.1 | 8.08 | -96.3 | 411 |
| | 8/2/2018 | 19.8 | 8.16 | -115.2 | 7.66ms |
| | 2/5/2019 | 12.1 | 8.26 | -118.6 | 1061 |
| | 8/21/2019 | 17.5 | 8.40 | -126.3 | 1060 |
| | 2/24/2020 | 13.6 | 8.45 | -126.6 | 976 |
| | 8/31/2020 | 20.1 | 8.48 | -130.8 | 936 |
| | 6/10/2021 | 20.1 | 9.19 | -167.6 | 908 |
| | 11/10/2021 | 14.6 | 7.79 | -44.9 | 974 |

Notes:
(µS): Units of Conductivity (micro Siemens)

**Table 6b**
**Groundwater Monitoring Events Field Parameters Summary**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Well ID | Date | Temp. (C) | pH (S.U.) | Eh (mv) | Specific Conductance (µS) |
|---|---|---|---|---|---|
| MW-2S | 5/22/1997 | 12.7 | 6.93 | -7.0 | 550 |
| | 11/14/1997 | 15.9 | 7.00 | 36.5 | 932 |
| | 5/19/1998 | 14.3 | 7.34 | -15.0 | 472 |
| | 11/5/1998 | 16.0 | 6.91 | 2.0 | 750 |
| | 5/25/1999 | 13.6 | 6.50 | 17.1 | 700 |
| | 11/18/1999 | 13.7 | 7.13 | -5.8 | 803 |
| | 6/28/2000 | 17.5 | 7.39 | -39.0 | 700 |
| | 11/15/2000 | 11.9 | 6.80 | -9.3 | 600 |
| | 6/20/2001 | 17.8 | 7.29 | -27.9 | 560 |
| | 11/29/2001 | 13.3 | 6.52 | 15.7 | 570 |
| | 6/26/2002 | 17.8 | 7.19 | -13.5 | 570 |
| | 11/19/2002 | 13.2 | 7.15 | -27.8 | 771 |
| | 6/24/2003 | 13.9 | 7.37 | 9.7 | 895 |
| | 11/17/2003 | 13.4 | 7.33 | -28.2 | 762 |
| | 6/21/2004 | 12.8 | 6.99 | 0.7 | 471 |
| | 11/22/2004 | 12.9 | 7.04 | 1.7 | 672 |
| | 6/22/2005 | 13.6 | 7.07 | -9.4 | 817 |
| | 11/22/2005 | 11.3 | 7.12 | -9.1 | 805 |
| | 7/5/2006 | 14.5 | 7.15 | -5.5 | 214 |
| | 11/27/2006 | 13.7 | 7.10 | -8.0 | 326 |
| | 6/27/2007 | 15.4 | 7.03 | -5.1 | 1034 |
| | 1/9/2008 | 12.5 | 7.14 | -94.8 | 1100 |
| | 7/23/2008 | 14.6 | 7.00 | -114.6 | 1176 |
| | 2/20/2009 | 9.4 | 6.70 | -110.7 | 1135 |
| | 8/27/2009 | 17.3 | 7.17 | -141.0 | 993 |
| | 2/25/2010 | 11.1 | 7.38 | -102.8 | 730 |
| | 8/26/2010 | 15.6 | 6.81 | -24.7 | 998 |
| | 2/23/2011 | 11.7 | 7.98 | -31.0 | 990 |
| | 8/2/2011 | 16.5 | 7.31 | -40.9 | 987 |
| | 2/20/2012 | 11.9 | 7.21 | -34.9 | 668 |
| | 8/30/2012 | 15.1 | 7.23 | -36.7 | 1167 |
| | 2/19/2013 | 11.3 | 7.42 | -48.5 | 783 |
| | 8/14/2013 | 14.9 | 7.38 | -42.1 | 850 |
| | 2/26/2014 | NA | NA | NA | NA |
| | 10/2/2014 | 14.3 | 7.29 | -37.9 | 239 |
| | 2/24/2015 | 8.3 | 7.49 | -52.4 | 385 |
| | 8/6/2015 | 13.5 | 7.09 | -28.5 | 343 |
| | 3/9/2016 | 12.4 | 7.26 | -36.6 | 1119 |
| | 8/12/2016 | 15.3 | 7.60 | -61.1 | 1013 |
| | 2/1/2017 | 9.6 | 7.88 | -73.4 | 681 |
| | 8/17/2017 | 14.5 | 7.52 | -66.4 | 945 |
| | 2/15/2018 | 10.9 | 7.76 | -79.2 | 497 |
| | 8/2/2018 | 15.3 | 7.85 | -98.9 | 1009 |
| | 2/5/2019 | 10.6 | 7.97 | -103.7 | 1107 |
| | 8/21/2019 | 17.2 | 8.03 | -108.2 | 1091 |
| | 2/24/2020 | 12.4 | 8.15 | -112.5 | 1379 |
| | 8/31/2020 | 21.1 | 8.31 | -122.4 | 1247 |
| | 6/10/2021 | 18.6 | 8.58 | -135.2 | 1160 |
| | 11/10/2021 | 15.2 | 7.75 | -42.6 | 1191 |

Notes:
(µS): Units of Conductivity (micro Siemens)

**Table 6b**
**Groundwater Monitoring Events Field Parameters Summary**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Well ID | Date | Temp. (C) | pH (S.U.) | Eh (mv) | Specific Conductance (µS) |
|---|---|---|---|---|---|
| MW-2D | 5/22/1997 | 13.5 | 7.16 | -22.5 | 320 |
| | 11/14/1997 | 13.8 | 7.47 | 1.6 | 502 |
| | 5/19/1998 | 15.7 | 7.32 | -20.8 | 322 |
| | 11/5/1998 | 15.4 | 7.28 | -19.3 | 330 |
| | 5/25/1999 | 14.9 | 6.76 | 1.4 | 340 |
| | 11/18/1999 | 12.7 | 7.91 | -48.0 | 500 |
| | 6/28/2000 | 16.2 | 7.78 | -58.3 | 370 |
| | 11/15/2001 | 12.1 | 7.58 | -3.2 | 330 |
| | 6/20/2001 | 15.3 | 7.86 | -60.8 | 540 |
| | 11/29/2001 | 11.3 | 6.83 | -1.7 | 320 |
| | 6/26/2002 | 16.2 | 7.67 | -37.8 | 390 |
| | 11/19/2002 | 12.3 | 7.47 | -48.3 | 450 |
| | 6/24/2003 | 14.1 | 7.83 | -12.9 | 564 |
| | 11/17/2003 | 12.1 | 7.77 | -53.5 | 483 |
| | 6/21/2004 | 13.7 | 7.66 | -36.6 | 523 |
| | 11/22/2004 | 12.9 | 7.46 | -21.9 | 412 |
| | 6/22/2005 | 15.7 | 7.27 | -21.4 | 513 |
| | 11/22/2005 | 10.5 | 7.07 | -6.4 | 537 |
| | 7/5/2006 | 13.5 | 7.13 | -6.7 | 679 |
| | 11/27/2006 | 13.1 | 7.63 | -37.6 | 378 |
| | 6/27/2007 | 15.4 | 7.21 | -28.4 | 671 |
| | 1/9/2008 | 12.5 | 7.13 | -109.4 | 680 |
| | 7/23/2008 | 14.4 | 7.31 | -126.3 | 634 |
| | 2/20/2009 | 9.6 | 7.10 | -93.5 | 1084 |
| | 8/27/2009 | 18.6 | 7.77 | 9.5 | 528 |
| | 2/25/2010 | 11.1 | 7.92 | 35.7 | 384 |
| | 8/26/2010 | 15.4 | 7.76 | 167.7 | 577 |
| | 2/23/2011 | 11.6 | 8.25 | -44.8 | 655 |
| | 8/2/2011 | 16.9 | 7.55 | -56.6 | 731 |
| | 2/20/2012 | 11.6 | 7.15 | -30.7 | 720 |
| | 8/30/2012 | 15.3 | 7.13 | -38.4 | 758 |
| | 2/19/2013 | 12.6 | 7.92 | -79.5 | 860 |
| | 8/14/2013 | 15.5 | 7.62 | -60.8 | 762 |
| | 2/26/2014 | 9.2 | 7.92 | -78.0 | 920 |
| | 10/2/2014 | 13.6 | 7.48 | -51.9 | 244 |
| | 2/24/2015 | 9.0 | 7.83 | -71.5 | 376 |
| | 8/6/2015 | 14.5 | 7.56 | -56.5 | 334 |
| | 3/9/2016 | 13.4 | 7.75 | -67.9 | 1090 |
| | 8/12/2016 | 15.1 | 8.17 | -89.3 | 1009 |
| | 2/1/2017 | 9.6 | 8.22 | -93.9 | 659 |
| | 8/17/2017 | 13.9 | 7.96 | -90.8 | 970 |
| | 2/15/2018 | 10.8 | 7.75 | -104.6 | 479 |
| | 8/2/2018 | 15.6 | 8.12 | -115.0 | 987 |
| | 2/5/2019 | 11.0 | 8.41 | -127.4 | 1091 |
| | 8/21/2019 | 17.0 | 8.47 | -130.3 | 1093 |
| | 2/24/2020 | 12.5 | 8.59 | -135.8 | 953 |
| | 8/31/2020 | 19.6 | 8.76 | -145.3 | 847 |
| | 6/10/2021 | 18.8 | 9.14 | -164.9 | 857 |
| | 11/10/2021 | 14.4 | 8.15 | -65.2 | 925 |

Notes:
(µS): Units of Conductivity (micro Siemens)

**Table 6b**
**Groundwater Monitoring Events Field Parameters Summary**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Well ID | Date | Temp. (C) | pH (S.U.) | Eh (mv) | Specific Conductance (µS) |
|---|---|---|---|---|---|
| MW-3S | 5/22/1997 | 13.2 | 7.18 | -16.5 | 700 |
| | 11/14/1997 | 16.9 | 6.72 | -5.8 | 1072 |
| | 5/19/1998 | 15.7 | 6.95 | 9.4 | 800 |
| | 11/5/1998 | 13.5 | 6.59 | 17.2 | 850 |
| | 5/25/1999 | 13.5 | 6.31 | 25.9 | 900 |
| | 11/18/2001 | 12.6 | 6.61 | 23.8 | 850 |
| | 6/28/2000 | 17.5 | 6.44 | -37.1 | 900 |
| | 11/15/2001 | 12.4 | 7.10 | -29.9 | 700 |
| | 6/20/2001 | 15.1 | 6.24 | 44.1 | 570 |
| | 11/29/2002 | 13.3 | 5.62 | 64.3 | 570 |
| | 6/26/2002 | 16.9 | 6.81 | 9.2 | 570 |
| | 11/19/2002 | 13.5 | 6.52 | 7.9 | 789 |
| | 6/24/2003 | 13.3 | 6.75 | 40.8 | 1054 |
| | 11/17/2003 | 13.1 | 7.65 | -64.0 | 564 |
| | 6/21/2004 | 12.1 | 6.47 | 29.8 | 911 |
| | 11/22/2004 | 13.0 | 6.63 | 23.6 | 768 |
| | 6/22/2005 | 12.6 | 6.48 | 24.2 | 996 |
| | 11/22/2005 | 10.8 | 6.74 | 11.6 | 967 |
| | 7/5/2006 | 12.6 | 6.77 | 14.2 | 547 |
| | 11/27/2006 | 13.5 | 6.85 | 7.0 | 346 |
| | 6/27/2007 | 13.6 | 6.92 | 9.2 | 370 |
| | 1/9/2008 | 12.8 | 6.98 | -21.5 | 1310 |
| | 7/23/2008 | 15.5 | 6.45 | -39.2 | 1367 |
| | 2/20/2009 | 7.9 | 5.81 | -13.8 | 1397 |
| | 8/27/2009 | 19.0 | 6.57 | -40.5 | 1036 |
| | 2/25/2010 | 11.1 | 7.53 | -10.2 | 802 |
| | 8/26/2010 | 15.9 | 6.76 | -7.1 | 1116 |
| | 2/23/2011 | 10.6 | 7.18 | 16.3 | 969 |
| | 8/2/2011 | 14.7 | 6.36 | 5.1 | 1069 |
| | 2/20/2012 | 11.0 | 6.31 | 6.2 | 718 |
| | 8/30/2012 | 13.5 | 6.35 | 4.2 | 725 |
| | 2/19/2013 | 12.2 | 6.57 | -7.3 | 786 |
| | 8/14/2013 | 14.2 | 6.48 | -6.1 | 735 |
| | 2/26/2014 | 9.0 | 6.68 | -2.1 | 1448 |
| | 10/2/2014 | 13.3 | 7.10 | -18.3 | 395 |
| | 2/24/2015 | 7.3 | 7.00 | -22.7 | 398 |
| | 8/6/2015 | 14.0 | 6.75 | -7.7 | 339 |
| | 3/9/2016 | 14.4 | 6.56 | -4.6 | 1059 |
| | 8/12/2016 | 15.0 | 6.61 | -9.9 | 1008 |
| | 2/1/2017 | 9.3 | 7.33 | -38.4 | 944 |
| | 8/17/2017 | 14.1 | 7.73 | -24.4 | 965 |
| | 2/15/2018 | 10.8 | 7.28 | -31.5 | 594 |
| | 8/2/2018 | 16.1 | 7.32 | -67.5 | 9.89us |
| | 2/5/2019 | 10.4 | 7.13 | -60.4 | 1116 |
| | 8/21/2019 | 17.3 | 8.58 | -51.7 | 1560 |
| | 2/24/2020 | 11.9 | 7.71 | -90.3 | 1234 |
| | 8/31/2020 | 19.6 | 7.68 | -85.7 | 1146 |
| | 6/10/2021 | 19.0 | 7.73 | -90.8 | 1459 |
| | 11/10/2021 | 15.4 | 7.04 | -2.7 | 1438 |

Notes:
(µS): Units of Conductivity (micro Siemens)

**Table 6b**
**Groundwater Monitoring Events Field Parameters Summary**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

| Well ID | Date | Temp. (C) | pH (S.U.) | Eh (mv) | Specific Conductance (µS) |
|---|---|---|---|---|---|
| MW-3D | 5/22/1997 | 14.0 | 6.94 | -11.2 | 620 |
| | 11/14/1997 | 16.2 | 7.02 | -46.2 | 1074 |
| | 5/19/1998 | 15.6 | 7.85 | -30.8 | 725 |
| | 11/5/1998 | 13.3 | 7.01 | -3.7 | 900 |
| | 5/25/1999 | 13.8 | 6.52 | 6.2 | 900 |
| | 11/18/1999 | 11.9 | 7.30 | -12.4 | 800 |
| | 6/28/2000 | 17.2 | 7.24 | -30.8 | 900 |
| | 11/15/2000 | 13.1 | 6.29 | -36.6 | 362 |
| | 6/20/2001 | 15.8 | 7.76 | -174.7 | 570 |
| | 11/29/2002 | 12.7 | 6.36 | 41.8 | 570 |
| | 6/26/2002 | 16.7 | 7.20 | -15.5 | 570 |
| | 11/19/2002 | 12.5 | 7.11 | -25.7 | 880 |
| | 6/24/2003 | 13.6 | 7.31 | 15.1 | 1039 |
| | 11/17/2003 | 11.9 | 7.46 | -33.5 | 729 |
| | 6/21/2004 | 14.0 | 7.17 | -8.3 | 319 |
| | 11/22/2004 | 12.3 | 7.15 | -3.4 | 766 |
| | 6/22/2005 | 15.6 | 6.62 | 17.2 | 900 |
| | 11/22/2005 | 9.4 | 6.92 | 2.4 | 1005 |
| | 7/5/2006 | 9.4 | 6.92 | 2.4 | 1005 |
| | 11/27/2006 | 12.8 | 7.20 | -13.2 | 462 |
| | 6/27/2007 | 15.6 | 7.17 | -10.4 | 1126 |
| | 1/9/2008 | 12.5 | 7.18 | 14.9 | 1280 |
| | 7/23/2008 | 14.6 | 6.71 | -13.8 | 1408 |
| | 2/20/2009 | 8.2 | 6.07 | -41.8 | 1377 |
| | 8/27/2009 | 17.7 | 6.76 | 183.6 | 1031 |
| | 2/25/2010 | 10.6 | 7.33 | 74.6 | 809 |
| | 8/26/2010 | 15.5 | 6.88 | 220.2 | 1123 |
| | 2/23/2011 | 11.0 | 7.37 | 4.1 | 1015 |
| | 8/2/2011 | 18.5 | 6.30 | 8.9 | 1071 |
| | 2/20/2012 | 10.6 | 6.62 | 5.5 | 884 |
| | 8/30/2012 | 14.2 | 6.70 | 6.2 | 1179 |
| | 2/19/2013 | 10.3 | 6.55 | 2.0 | 887 |
| | 8/14/2013 | 14.5 | 6.68 | 3.2 | 950 |
| | 2/26/2014 | 9.4 | 6.76 | -12.9 | 1437 |
| | 10/2/2014 | 13.2 | 7.00 | -25.1 | 397 |
| | 2/24/2015 | 7.9 | 7.14 | -29.2 | 391 |
| | 8/6/2015 | 12.6 | 7.16 | -51.5 | 343 |
| | 3/9/2016 | 12.2 | 6.67 | -8.7 | 1115 |
| | 8/12/2016 | 14.5 | 7.08 | -26.8 | 1084 |
| | 2/1/2017 | 9.4 | 7.39 | -42.6 | 1007 |
| | 8/17/2017 | 13.5 | 7.89 | -33.1 | 987 |
| | 2/15/2018 | 10.3 | 7.11 | -43.0 | 549 |
| | 8/2/2018 | 15.4 | 7.30 | -68.1 | 1039 |
| | 2/5/2019 | 10.8 | 7.38 | -71.8 | 1104 |
| | 8/21/2019 | 17.2 | 8.69 | -62.3 | 1625 |
| | 2/24/2020 | 12.9 | 7.97 | -102.4 | 1383 |
| | 8/31/2020 | 21.3 | 8.01 | -103.0 | 1136 |
| | 6/10/2021 | 19.2 | 8.13 | -108.5 | 1448 |
| | 11/10/2021 | 16.0 | 7.12 | -6.8 | 1438 |

Notes:
(µS): Units of Conductivity (micro Siemens)

**Table 7**
**Landfill Gas Monitoring Results**
**November 10, 2021**
**Taylor's Lane Compost Site**
**Village of Mamaroneck**

## GAS VENT MONITORING

| Gas Vent (GV) # | PID (ppm) | CH4 (%) | CO2 (%) | O2 (%) | Balance (%) | Remarks |
|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.0 | 8.7 | 19.5 | 71.8 | |
| 2 | 0.0 | 0.0 | 7.6 | 18.4 | 74.0 | |
| 3 | 0.0 | 0.0 | 5.9 | 17.7 | 76.4 | |
| 4 | 0.0 | 1.4 | 16.5 | 15.8 | 66.3 | |
| 5 | 0.0 | 5.5 | 19.7 | 8.9 | 65.9 | |
| 6 | 0.0 | 0.0 | 6.7 | 19.3 | 74.0 | |
| 7 | 0.0 | 0.0 | 4.2 | 18.7 | 77.1 | Bees nest |
| 8 | 0.0 | 0.0 | 3.7 | 19.1 | 77.2 | |

## BAR HOLE MONITORING

| Bar Hole (BH) # | PID (ppm) | CH4 (%) | CO2 (%) | O2 (%) | Balance (%) | Remarks |
|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.0 | 3.8 | 17.4 | 78.8 | |
| 2 | 0.0 | 0.0 | 3.1 | 17.2 | 79.7 | |
| 3 | 0.0 | 0.0 | 3.9 | 16.1 | 80.0 | |
| 4 | 0.0 | 0.0 | 3.5 | 16.6 | 79.9 | |
| 5 | 0.0 | 0.0 | 3.0 | 17.6 | 79.4 | |
| 6 | 0.0 | 0.0 | 3.1 | 17.8 | 79.1 | |
| 7 | 0.0 | 0.0 | 2.5 | 17.9 | 79.6 | |
| 8 | 0.0 | 0.0 | 2.2 | 16.8 | 81.0 | |
| 9 | 0.0 | 0.0 | 3.0 | 17.4 | 79.6 | |
| 10 | 0.0 | 0.0 | 3.6 | 16.6 | 79.8 | |
| 11 | 0.0 | 0.0 | 2.9 | 16.9 | 80.2 | |
| 12 | 0.0 | 0.0 | 3.2 | 17.6 | 20.4 | |
| 13 | 0.0 | 0.0 | 2.8 | 17.7 | 79.5 | |

Note: See drawing entitled "Drawing No. 1 - Site Map with Shallow Groundwater Flow Contours" for monitoring locations.
Equipment used: GEM 500 and MiniRae PID