

# POST LANDFILL CLOSURE MONITORING 2022

## Town of Hurley Landfill

Hurley, NY

July 2022

C&A # 5447.0



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## Report History

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# TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	PURPOSE & SCOPE	1
III.	SUMMARY OF EXCEEDANCES	2
IV.	CONCLUSION	14

## FIGURES

FIGURE 1 – GENERAL SITE LOCATION MAP

FIGURE 2 – SITE PLAN

## APPENDIX

APPENDIX A – DATA SUMMARY TABLES

APPENDIX B – LABORATORY ANALYTICAL REPORT

APPENDIX C – POST CLOSURE MONITORING AND FACILITY MAINTENANCE MANUAL JUNE 1996, SECTION III ENVIRONMENTAL MONITORING PLAN

APPENDIX D – SELECT HISTORICAL RESIDENTIAL SUMMARY DATA

**SAMPLE COLLECTION, INFORMATION SUMMARY**

**SAMPLING FIRM: PHOENIX ENVIRONMENTAL LABORATORIES, INC.**

**SAMPLING DATE: MAY 18, 2022 & JUNE 7, 2022**

**TEST METHOD: 6 NYCRR PART 360 BASELINE ANALYSIS  
[MONITORING WELLS AND SURFACE WATER SAMPLE LOCATIONS]**

**& SELECT-LIMITED PARAMETERS FOR RESIDENTIAL WELLS  
[TDS, ALKALINITY, CHLORIDE, AMMONIA, BARIUM, IRON, MANGANESE  
& SODIUM]**

**SUMMARY OF WATER QUALITY SAMPLING POINTS**

<b>SAMPLE I.D.</b>	<b>LOCATION</b>	<b>ANALYSIS</b>
<b><i>MONITORING WELLS</i></b>		
MW-1*, MW-3, MW-4, MW-6A & MW-7 [* MW-1 IS THE ONLY UPGRADIENT WELL]	ON-SITE	1993 BASELINE ANALYSIS [Expanded Parameters Every 3 Years*]
<b><i>SURFACE WATER</i></b>		
BETTY & RAY'S STREAM (B&R STREAM)	OFF-SITE [ACROSS FROM 689 ROUTE 28A]	1993 BASELINE ANALYSIS [Expanded Parameters Every 3 Years*]
SS-3 SS-5	ON-SITE	1993 BASELINE ANALYSIS [Expanded Parameters Every 3 Years*]
<b><i>RESIDENTIAL</i></b>		
	OFF-SITE	TDS, ALKALINITY, CHLORIDE, AMMONIA, BARIUM, IRON, MANGANESE & SODIUM
<b><i>Wet Well Composite</i></b>	ON-SITE	1993 BASELINE ANALYSIS [Expanded Parameters Every 3 Years*]

**Notes:**

\*1993 Baseline Analysis is to be completed annually; however, every 3 years, expanded parameters are to be analyzed per the site's Post Closure Monitoring & Facility Maintenance Manual dated December 1991, last revised June 1996.

\*\* Not sampled during this event

## I. INTRODUCTION

The Hurley Landfill is located on Dughill Road just off of Route 23A, in the Town of Hurley, New York. The landfill closure was completed in October 1996. The 2012 annual landfill groundwater monitoring event was the eighteenth annual sampling event following the closure. It is unclear as to why annual monitoring was not completed from 2013 through 2021; however, it has resumed as of 2022.

There are five (5) monitoring wells, one (1) upgradient (MW-1) and four (4) downgradient (MW-3, 4, 6A & 7), and three (3) surface water sampling sites from which samples were collected. One of the surface-sampling sites is located off-site in the stream discharging in the direction of historical "Betty and Ray's store" (B&R Stream); the other surface water sites are located upgradient (SS-5) and downgradient (SS-3) of the surface leachate collection system. Samples were also collected from the leachate collection system (wet well) and from the surface leachate collection sump during this monitoring event. The locations of these monitoring points are shown in Figure 1 in Appendix A.

Additionally, eight (8) residential wells were also slated for sampling for select parameters during this 2022 monitoring event; however, of the 8 residential locations, samples were only able to be collected from two of them, since they were the only ones who granted access to their property when the samples were scheduled to be collected.

Samples were collected on May 18, 2022 by Phoenix Environmental Laboratories, Inc, an ELAP certified lab. One additional sample from one of the residential locations was collected on June 7, 2022 by C&A personnel because according to the property owner, the lab had collected their sample from a location that was after the water had passed through the on-site water treatment system. Summary data tables of the lab results for the monitoring wells, surface water, residential wells, leachate collection system tank (wet well) and surface leachate collection sump have been included in Appendix B. A copy of the analytical data is provided in Appendix C.

## II. PURPOSE & SCOPE

The on-site post-closure water quality monitoring and off-site residential well monitoring at the Hurley Landfill is conducted in accordance with the approved Post Closure Monitoring and Facility Maintenance Manual for the Closure of the Hurley Landfill, prepared by Crawford & Associates, dated June 1996. Appendix D provides the appropriate section of the Post Closure Monitoring and Facility Maintenance Manual.

The groundwater sample test results were reviewed and compared to the groundwater standards and guidance values for Class GA waters, as listed in the N.Y.S Ambient Water Quality Standard and Guidance Values (T.O.G.S. 1.1.1) document. The surface water test results were compared to 6 NYCRR Part 701 Class A Standards due to the site's proximity to the Ashokan Reservoir, which is a water supply for New York City. This report is being submitted to the New York State Department of Environmental Conservation (NYSDEC), Region 3 Office, the New York City Department of Environmental Protection (NYCDEP), the



Ulster County Department of Health (UCDOH), and the Town of Hurley for distribution to the residents in the monitoring program.

### Leachate Collection System

The Hurley Landfill includes a subsurface leachate collection system with a pipe system below the landfill cap that drains to a series of tanks (2-2,000 gallon tanks and a 10,000 gallon tank) for storage prior to hauling for disposal. The Landfill also includes a surface leachate collection system that was designed and constructed to contain a surface outbreak of leachate. The system was designed so that the contained leachate would be drained to 2-1,000 gallon tanks and then pumped to 2- 2000 gallon tanks of the leachate collection system. In June 2022, both leachate collection systems underwent the following exploratory excavation and repair work.

- Overgrown vegetation trimming & disposal.
- Hand digging around all tanks to determine the condition of the piping & secondary containment.
- Repair of the 4-inch PVC standpipe for the 10K gallon tank.
- Repair of the clay berm associated with the surface leachate collection system
- Purchase and install new control system for Tank pumps and alarm.
- Appropriate backfilling, grading and seeding for site restoration purposes.

## III. SUMMARY OF EXCEEDANCES

### Standards Exceeded

The following provides a summary of recent analytical results for constituents with a regulatory exceedance [exceedances are shown in bold text]. A comparison of the current data is also provided when possible; however, it should be noted that the last set of annual monitoring data collected for some unknown reason was from 2012. Also please note that samples collected from . . . A were from the outside spigot which is after the treatment system and samples collected from . . . I B were from a valve in the piping in the basement that is located between the well and treatment system.

#### ▪ Turbidity

*Groundwater [Guidance Value of 5 NTU]*

- MW-1 - **11 NTU**
- MW-3 – **319 NTU**
- MW-4 – **210 NTU**









Total dissolved solids can be associated with landfill leachate, or it can be indicative of background groundwater quality conditions. In this case, it is possible that landfilled materials might be having an effect/influence on groundwater quality because two of the down-gradient wells (MW-4 & 6A) and the two pre-treatment residential locations, exhibit higher concentrations than the up-gradient well, MW-1). The levels detected do not appear to warrant concern.

- Chloride

*Groundwater [Guidance Value of 250 ppm]*

- MW-1 – 17 ppm
- MW-3 – 30.2 ppm
- MW-4 – 169 ppm
- MW-6A – **513 ppm**
- MW-7 – 29.7 ppm
- SS-5 – 195 ppm
- SS-3 – 185 ppm
- B&R's Stream – 197 ppm
- Leachate Tank (2K Gal) – 75 ppm

*Surface Water [Guidance Value is Not Established]*

- SS-5 – 251 ppm
- SS-3 – 236 ppm
- B&R's Stream – 143 ppm
- Surficial Leachate Sump – 256 ppm

Chloride is readily leached as water infiltrates soils and can be an indicator of contamination from human sources. Elevated concentrations of chloride in groundwater are commonly found in shallow groundwater in urban land use areas, around septic systems, and near waste impoundments, such as a landfill. Chloride is readily transported through groundwater. Human sources include fertilizers, road salt, human and animal waste, as well as from various industrial applications. In this case only one downgradient









The pretreatment sample result for \_\_\_\_\_ appears to be lower than the post treatment sample result which suggests that lead could be leaching into the residential water supply at this location from the water piping or system.

- Manganese

*Groundwater [Guidance Value of 0.3 ppm]*

- MW-1 – **0.328 ppm**
- MW-3 – **13.3 ppm**
- MW-4 – **1.61 ppm**
- MW-6A – **0.771 ppm**
- MW-7 – **16.5 ppm**
- \_\_\_\_\_ – **0.685 ppm**
- \_\_\_\_\_ – **0.001 ppm**
- \_\_\_\_\_ – **0.727 ppm**
- Leachate Tank (2K Gal) – **0.776 ppm**

*Surface Water [Guidance Value is Not Established]*

- SS-5 – 0.63 ppm
- SS-3 – 27.9 ppm
- B&R's Stream – 6.75 ppm
- Surficial Leachate Sump – 1.4 ppm

Manganese can be associated with landfill leachate or it can be indicative of background groundwater quality conditions. In this case, it is possible that landfilled materials might be having an effect/influence on groundwater quality, but it could also be associated with background conditions since exceedances were detected in both up-gradient and down-gradient wells. Historical trends have shown exceedances in both up-gradient and down-gradient well locations as well. The levels detected do not appear to warrant concern.

The pretreatment sample result for \_\_\_\_\_ appears to be lower than the post treatment sample result which suggests that manganese could be leaching into the residential water supply at this location from the water piping or system.



- Magnesium

*Groundwater [Guidance Value of 35 ppm]*

- MW-1 – 1.9 ppm
- MW-3 – 15.6 ppm
- MW-4 – **39 ppm**
- MW-6A – 33.2 ppm
- MW-7 – 31.6 ppm
- MW-8 – Not Analyzed
- MW-9 – Not Analyzed
- MW-10 – Not Analyzed
- Leachate Tank (2K Gal) – 30.4 ppm

*Surface Water [Guidance Value is Not Established]*

- SS-5 – 5.64 ppm
- SS-3 – 27.9 ppm
- B&R's Stream – 6.75 ppm
- Surficial Leachate Sump – 32.2 ppm

Magnesium can be associated with landfill leachate or it can be indicative of background groundwater quality conditions. In this case, it could be from the landfill since the levels detected in all of the monitoring wells along the western and down-gradient side of the landfill are fairly similar to the level detected in the landfill leachate. Historical trends appear to be consistent, showing elevated levels that don't exceed the guidance value in three of the four down-gradient locations (MW-4 is the downgradient well with historical exceedances of magnesium). The levels detected do not warrant concern.

- Sodium

*Groundwater [Guidance Value of 20 ppm]*

- MW-1 – 9.12 ppm
- MW-3 – 11.4 ppm
- MW-4 – **96.6 ppm**



- MW-6A – 220 ppm
- MW-7 – 28.1 ppm
- – 72.7 ppm
- – 61.4 ppm
- – 42.7 ppm
- Leachate Tank (2K Gal) – 55 ppm

*Surface Water [Guidance Value is Not Established]*

- SS-5 – 139 ppm
- SS-3 – 142 ppm
- B&R's Stream – 85.8 ppm
- Surficial Leachate Sump – 154 ppm

Sodium can be associated with landfill leachate, or it can be indicative of background groundwater quality conditions. Since the up-gradient monitoring well does not have elevated levels of sodium, and three of the four down-gradient wells do have elevated concentrations of sodium, it appears that the landfill could be having an impact/influence on groundwater quality or that the groundwater had been impacted by on-site road salt storage. Historically, sodium exceedances have been detected in down-gradient wells as well. The levels detected do not warrant concern.

- 1,2,3-Trichloropropane

*Groundwater [Guidance Value of 0.00004 ppm]*

- MW-1 – <0.00025 ppm
- MW-3 – <0.00025 ppm
- MW-4 – <0.00025 ppm
- MW-6A – <0.00025 ppm
- MW-7 – <0.00025 ppm
- – Not Analyzed
- – Not Analyzed
- – Not Analyzed







#### IV. CONCLUSION

The groundwater and surface water exceedances at the Hurley Landfill appear to have remained fairly minimal and similar to the data that was generated back in 2012. Limited inorganic leachate contamination influence has been detected in the down-gradient direction; however, the levels reported do not appear to warrant significant concern.

Limited residential well data was obtained from this year's sampling effort. Data from the two locations that were able to be sampled, have concentrations of some of the constituents sampled at levels that are greater than that which has been detected in the landfills' upgradient monitoring well (MW-1). Common constituents detected in the two residential wells include total dissolved solids, manganese, iron, and sodium.

