PERIODIC REVIEW REPORT
JUNE 2017 – JUNE 2022

TUXEDO WASTE DISPOSAL SITE
TUXEDO, NEW YORK 10987

NYSDEC Site No. 336035
Work Assignment No. D009812-25

Prepared for:

NEW YORK STATE

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TRC Project No. 470744

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LIST OF ACRONYMS AND ABBREVIATIONS

AMSL	Above Mean Sea Level
COCs	Contaminants of Concern
DER	Department of Environmental Remediation
DTW	Depth to Water
DUSRs	Data Usability Summary Reports
ECs	Engineering Controls
EE	Environmental Easement
FS	Feasibility Study
ft. bgs	Feet Below Ground Surface
TOC	Top of Casing
ICs	Institutional Controls
IHWDS	Inactive Hazardous Waste Disposal Site
LEL	Lower Explosive Limit
N/A	Not Applicable
ng/L	Nanograms per Liter
ND	Not Detected
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NTU	Nephelometric Turbidity Unit
MCL	Maximum Contaminant Level
PCBs	Polychlorinated Biphenyls
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PID	Photoionization Detector
PRR	Periodic Review Report
RI	Remedial Investigation
ROD	Record of Decision
SBL	Section, Block and Lot
SCG	Standard, Criteria, and Guidance
SIM	Selected Ion Monitoring
SMP	Site Management Plan
SMR	Site Management Report
SVOCs	Semi-volatile Organic Compounds
TAL	Target Analyte List
TOGS	NYSDEC Division of Water Technical and Operational Guidance Series
TRC	TRC Engineers, Inc.
VOCs	Volatile Organic Compounds
WA	Work Assignment
µg/L	Micrograms per Liter
USEPA	United States Environmental Protection Agency

Executive Summary

Category	Summary/Results
Engineering Controls	• Cover system and supporting features • Fencing/access control • Groundwater monitoring well network
Institutional Controls	Site Management Plan – June 2019
Site Classification	Class 4 IHWDS
Site Management Plan	Site Management Plan – June 2019
Certification/Reporting Period	The SMP requires Site monitoring to be conducted every quarter and a PRR to be prepared every three years. The certification/reporting period was changed by NYSDEC in June 2020 to every five years. The last PRR was completed for the period of June 2014 to June 2017.
Inspection	**Frequency**
Site Inspection	Quarterly
Monitoring	**Frequency**
Landfill Gas Emission	Quarterly
Groundwater	Biennial
Prior PRR/SMR Recommendations	The 2017 PRR recommended continuing site management and reporting activities as specified in the SMP and continuing analysis of TAL metals (dissolved and total if sample turbidity is above 50 NTU) and mercury as part of future groundwater monitoring events.
Site Management Activities	Site inspections, landfill gas monitoring events, and groundwater sampling events were conducted in accordance with the SMP during this reporting period (2017-2022): • 2019: Site inspection and landfill gas monitoring occurred quarterly. Groundwater level measurements were collected during the first quarter. • 2020: Site inspection and landfill gas monitoring occurred quarterly. Groundwater level measurements and groundwater samples were collected from 7 of 12 monitoring wells within the monitoring well network. Samples were submitted for analysis of TAL Metals and mercury. • 2021: Site inspection and landfill gas monitoring occurred quarterly. • 2022: Site inspection and landfill gas monitoring occurred quarterly.
Significant Findings or Concerns	1. Vegetation within the drainages swales and basins is currently dense and tall, which may impede the flow of water. 2. The turbine vents on gas vents GVS-4 and GVS-6 are damaged and not functioning as intended. 3. A hole in the site fence was noted at the north end of the Site and additional damage was observed in the southern area of the Site. 4. Perimeter gas monitoring point PMP-1 was not located by TRC. It has been inferred that PMP-1 was destroyed. PMP-3 is damaged and is disconnected approximately six inches above the ground surface, as documented in the May 2022 inspection report.
Recommendations	1. Vegetation within the drainage swales and basins should be removed to ensure proper flow of water. 2. The gas vents with damaged turbine vents should be repaired. 3. The damaged fence should be repaired. 4. Perimeter gas monitoring point PMP-3 should be repaired.
Cost Evaluations	TRC's cost for site management activities this reporting period (beginning October 2018 when TRC began managing the Site and ending in June 2022 upon completion of the reporting period) was $75,985.00. This cost includes labor and expenses incurred by TRC. It should be noted this cost does not include any costs incurred directly by the NYSDEC.

1.0 Introduction

This PRR has been prepared for the Tuxedo Waste Disposal Site (referred to as "the Site") and covers the period from June 2017 through June 2022. This PRR was prepared in accordance with the NYSDEC WA No. D009812-25 Notice to Proceed dated November 19, 2021, the NYSDEC-approved Scope of Work dated April 1, 2022, and NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation. A Site summary and applicable remedial program information are presented below.

Site Information			
Site Name:	Tuxedo Waste Disposal Site	**NYSDEC Site No:**	336035
Site Location:	State Route 17, Tuxedo, Orange County, New York	**Remedial Program:**	State Superfund Program
Site Type:	Waste disposal site	**Classification:**	Class 4 IHWDS
Parcel Identification(s):	Orange County Tax Map – SBL 209-1-11 and 209-1-13	**Parcel Acreage / EE Acreage:**	SBL 209-1-11 (12.20 acres) and SBL 209-1-13 (7.90 acres)
Selected Remedy:	Waste consolidation, cover system and monitoring	**Site COC(s):**	Per the SMP, metals in groundwater and VOCs, hydrogen sulfide and methane in landfill gas
Current Remedial Program Phase:	Site Management	**Institutional Controls:**	Site Management Plan – June 2019
Post-Remediation Monitoring and Sampling Frequency:	Site inspection (quarterly), landfill gas monitoring (quarterly), groundwater monitoring (biennial)	**Engineering Controls:**	Cover system, fencing/access control, and groundwater monitoring well network
Monitoring Locations:	Monitoring wells (12) Gas vents (12) Perimeter gas monitoring points (13)	**Required Reporting:**	PRR – Every 5 years (as specified by NYSDEC since last PRR)

1.1 Site Location, Ownership, and Description

The Tuxedo Waste Disposal Site encompasses approximately 13-acres of land located along New York State Route 17 in the Town of Tuxedo, Orange County, New York. The Site is located on two parcels of land identified on Orange County Tax Maps as SBL 209-1-11 and SBL 209-1-13. Most of the Site is on SBL 209-1-11, a 12.20-acre parcel of land owned by Renard A. Barone and Sarkis Khourouzian. The remainder of the Site is on a small portion of SBL 209-1-13, a 7.9-acre parcel of land owned by Patricia J. Iazzetti. SBL 209-1-11 is listed as Property Class 852, Landfill and SBL 209-1-13 is listed as Property Class 331, Commercial Vacant with Improvements. The Site borders New York State Route 17 to the west,

an active commuter rail line (Port Jervis Line) followed by the Ramapo River and New York State Thruway to the east, and commercial properties to the north and south. Site Location and Site Layout maps are provided on **Figure 1** and **Figure 2**, respectively.

1.2 Investigation/Remedial History

The Site, primarily SBL 209-1-11, was used as a sand and gravel mine and included a bituminous concrete plant prior to 1985. In 1985, SBL 209-1-11 was purchased by Renard Barone and Sarkis Khourouzian who allowed a third party, Frank Sacco, to use the Site as a construction and demolition debris landfill beginning in February 1987. Solid waste regulations in effect at the time allowed the disposal of inert, non-hazardous construction and demolition debris at unpermitted sites for up to one year provided certain conditions were met. Inspections beginning in March 1987 revealed that nonexempt wastes were being disposed of at the Site in violation of solid waste regulations. Following multiple summonses and a lawsuit against the owners and operators, activities at the Site ceased on October 7, 1987. By that time, approximately 500,000 tons of waste material had been disposed of at the Site. In an effort to limit odors from the Site, soil from an industrial site in Mahwah, New Jersey was used as cover material for the waste. It was later determined that the imported cover material was characteristic hazardous waste and contained low levels of PCBs.

The Site was added to the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites as a Class 2a site in December 1987. In April 1988, the NYSDEC notified the Site owners that a state-funded Phase II investigation of the Site would be completed. The Phase II was completed and included geophysical and soil gas surveys, excavation and sampling of test pits and trenches, installation and sampling of groundwater monitoring wells, permeability testing, surface water and sediment sampling, and ambient air surveys.

The Phase II investigation final report was completed in March 1989. The investigation indicated methane and hydrogen sulfide gases were detected on-Site, as well as off-Site. Ambient air sampling indicated that VOCs were detectable but not beyond the Site's perimeter. Samples of the fill material brought to the Site confirmed notable levels of leachable lead, petroleum-related constitutes, chlorinated solvents, and PCBs. On-site soil gas contained petroleum-related constituents, chlorinated solvents, and large quantities of hydrogen sulfide under the cover material. Primary groundwater COCs were found to be metals. SVOCs and VOCs were not noted in either groundwater or surface water samples collected during the Phase II investigation. Additional waste associated with the main landfill mass on parcel SBL 209-1-11 was found on the adjacent parcel SBL 209-1-13 during the investigation. This parcel was incorporated into the investigation area and subsequently into the classification of the main parcel.

Following the Phase II investigation, the Site's classification was changed from a Class 2a to Class 2 site, indicating the presence of hazardous waste had been confirmed and that action was required to mitigate threats to human health and the environment. Additionally, parcel SBL 209-1-13 was added to the Site description. It was further determined that an RI/FS was necessary to define the nature and extent of contamination and develop remedial alternatives for the Site. The RI/FS field activities were competed in 1990 and included installation and sampling of additional groundwater monitoring wells, collection and

analysis of additional surface water and sediment samples, soil gas and ambient air surveys, and a risk assessment.

The RI/FS final report was completed in December 1991. A ROD was issued February 1992 outlining the Site remedy. The selected remedy included excavation and consolidation of waste; installation of an engineered final cover with a gas collection layer, and a passive gas collection and treatment system; construction of a surface water diversion system; site use restrictions; and long-term site monitoring. The remedial program was initiated in October 1995 and completed in 1996. Upon completion of the remedial construction, routine monitoring of surface water, groundwater, sediment, and air emissions was established to ensure the effectiveness of the remedy.

Following these activities, the NYSDEC reclassified the Site as a Class 4 site, indicating that the Site has been properly closed but requires continued site management consisting of operation, maintenance and/or monitoring.

1.3 Remaining Contamination

Source material consisting of waste fill and contaminated soil remain at the site with an estimated thickness of up to 70 feet. These materials were consolidated prior to being placed beneath the engineered final cover. The ROD states that Site groundwater was impacted by VOCs, SVOCs and metals and soil contamination includes VOCs, SVOCs, metals, and PCBs. Landfill gas COCs are hydrogen sulfide, methane, and VOCs. Through long-term monitoring, regular groundwater monitoring was reduced to metals and mercury, while landfill gas monitoring consists of VOCs, hydrogen sulfide and methane.

1.4 Regulatory Requirements/Cleanup Goals

The Site-specific remediation goals included in the ROD are as follows:

- Prevent unacceptable health risks to exposed populations from airborne contaminants;
- Prevent unacceptable environmental risks due to exposure of site-related contaminants;
- Close the Site in conformance with applicable regulations;
- Protect surface water and sediments from contamination which would adversely affect its uses;
- Eliminate the odor nuisance emanating from the Site.

The SMP includes the following baseline or action levels for landfill gas monitoring of ambient air at the PMPs:

- VOCs – 5ppm;
- Hydrogen sulfide – 10ppm;
- Methane – 10% of the LEL;
- Hydrogen sulfide and methane – 25% of the LEL, additional readings shall be taken to define the extent of elevated readings.

Further, the cleanup goals for the Site include attaining to the extent practicable the following SCGs:

- TOGS (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA Values

2.0 Institutional and Engineering Control Plan Compliance

2.1 Institutional Controls

The Tuxedo Waste Disposal Site is managed under the New York State Superfund Program. The Site's inclusion on the Inactive Hazardous Waste Disposal Site Registry and SMP act as the ICs for the Site.

The 2019 SMP requires the following for the Site:

- Compliance with the environmental easement and the SMP by the Grantor and the Grantor's successors and assigns.
- All ECs must be operated and maintained as specified in the SMP.
- Groundwater, air emissions, and other environmental or public health monitoring must be performed as defined in the SMP.
- Maintaining restricted access to the Site remedial components and posting of warning notifications and contact information.
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP.
- All future activities on the property that will disturb the remaining contaminated material must be conducted in accordance with the SMP. No intrusive activities or excavation may be conducted at the Site without the consent of the NYSDEC.
- The use of groundwater underlying the property is prohibited without treatment rendering it safe for intended use.
- Vegetable gardens and farming are prohibited on the Site.

2.2 Engineering Controls

The ECs for the Site include:

- An engineered final cover.
- A passive landfill gas collection and ventilation system incorporated into the final cover.
- A surface water diversion system that drains runoff away from the landfill.
- A chain-link fence with a locked gate at the driveway to restrict vehicular access.
- Groundwater monitoring well network.

The completed IC/EC form is included as **Appendix A**.

3.0 Monitoring and Sampling Plan Compliance

The 2019 SMP specifies the following Site monitoring and sampling activities:

Summary of SMP Site Monitoring and Sampling Plan				
Site Management Activity	**Frequency**	**Location**	**Laboratory Analysis**	**Completion Date(s)**
Site Inspection	Quarterly	Site property and engineering controls	Not Applicable	3/21/2019, 5/13/2019, 9/25/2019, 12/12/2019, 3/11/2020, 6/23/2020, 7/22/2020, 12/9/2020, 3/22/2021, 6/2/2021, 7/26/2021, 1/5/2022, 2/14/2022, 5/17/2022
Groundwater Sampling	Biennial	• MW-1 • MW-2 • MW-3 • MW-4 • MW-5 • MW-6 • MW-7 (destroyed) • RI-1 • RI-2 • RI-3 (obstructed) • RI-4 • RI-5A (obstructed)	TAL Metals by USEPA Method 6010 andMercury by USEPA Method 7471	7/22/2020 - 7/23/2020
Landfill Gas Monitoring	Quarterly	• PMP-1 (not located) • PMP-2 • PMP-3 (damaged) • PMP-4 • PMP-5 • PMP-6 • PMP-7 • PMP-8 • PMP-9 • PMP-10 • PMP-11 • PMP-12 • PMP-13 • GSV-1 • GSV-2 • GSV-3 • GSV-4 • GSV-5 • GSV-6 • GSV-7 • GSV-8 • GSV-9 • GSV-10 • GSV-11 • GVS-12	Combustible Gases via Landfill Gas Meter, VOCs via PID	3/21/2019, 5/13/2019, 9/25/2019, 12/12/2019, 3/11/2020, 6/23/2020, 7/22/2020, 12/9/2020, 3/22/2021, 6/2/2021, 7/26/2021, 1/5/2022, 2/14/2022, 5/17/2022
Groundwater Monitoring Report	Biennial (requirement removed by NYSDEC)	Not Applicable	Not Applicable	Not completed this reporting period.
PRR	Every 3 years (changed to every five years by NYSDEC)	Not Applicable	Not Applicable	Not Applicable

Notes:
Monitoring well MW-7 has been destroyed.
Monitoring wells RI-3 and RI-5A were partially obstructed during the July 2020 sampling event.
PMP-1 was not located by TRC.
The requirement of a biennial Groundwater Monitoring Report was removed by NYSDEC.
The PRR frequency was changed by NYSDEC.

3.1 Site Inspection

From the first quarter of 2019 until June 2022 TRC performed quarterly Site visits to complete groundwater monitoring, landfill gas monitoring, and Site inspection activities in accordance with the SMP. These activities were completed by AECOM during the first two years of the reporting period, from 2017 to 2019. The Site inspection included an evaluation of the current Site use, condition of the property, and condition of ECs such as monitoring wells, gas vents, access gates and roads.

A summary of the Site visits are as follows:

Summary of Site Activities and Site Monitoring and Sampling
March 2019 through June 2022

Site Management Activity	Summary of Results	Maintenance/Corrective Measure
Site Inspection	The soil cover on the landfill cap was dry and the soil was stable, with no visible erosions, cracks, settlements, or steeps. The passive landfill gas system is in good condition, with the exception of the turbine vents on GVS-4 and GVS-6 that are not functioning as intended. During the May 2022 site inspection, perimeter monitoring point PMP-3 was found damaged and cut approximately 6 inches above the ground surface. Additionally, PMP-1 has not been located by TRC. Vegetation within the drainage swales and basins is currently high and dense, which may impede the flow of water during a high-volume rain event. A hole in the northern end of the fence and damage to the southern end of the fence was found during the inspection.	The damage to PMP-3, the turbine vents on GVS-4 and GVS-6, and to the northern and southern ends of the site fence will be addressed during the Q3 2022 site visit. PMP-3 will be repaired, and functioning turbine vents will be installed. Vegetation within the drainage swales and basins should be addressed to limit the possibility of Site flooding and erosion of the cap.
Monitoring Well Network	Monitoring wells were found to be in good condition, except for MW-7 which has been destroyed, and RI-3 and RI-5A which are partially obstructed. Monitoring well caps that were damaged were replaced during the first inspection event conducted by TRC in March 2019.	Based on a review of the monitoring well network and sampling results, RI-5A can be removed from the well network and decommissioned. RI-3 should be further assessed to dislodge the obstruction or decommissioned and replaced.
Monitoring Well Gauging	Monitoring well MW-7 was not gauged during the March 2019 and July 2020 gauging events. Monitoring wells RI-3 and RI-5A were gauged during the July 2020 event but documented to be partially obstructed. Sample the tubing would not lower past the obstructions. Monitoring well MW-1 was not located during the visit, as it is in an area of dense vegetation during the summer months.	Vegetation in the area of MW-1 should be addressed prior to groundwater sampling to ensure accessibility to the well.

Summary of Site Activities and Site Monitoring and Sampling March 2019 through June 2022		
Site Management Activity	**Summary of Results**	**Maintenance/Corrective Measure**
Groundwater Sampling	Seven of the 12 Site monitoring wells were sampled using low-flow sampling methods. Samples were sent to Eurofins/Test America for analysis of TAL Metals and Mercury in July 2020. Monitoring well MW-7 has been destroyed, monitoring wells RI-3 and R-5A are partially obstructed which would not allow for tubing to be lowered down into the well. The field technicians could not dislodge the obstructions during the visit. MW-1 was unable to be located, and therefore could not be sampled. MW-5 contained a large wasp's nest.	The partial obstructions in RI-3, and RI-5A need to be assessed. Vegetation near MW-1 should be addressed prior to groundwater sampling to ensure accessibility to the well. The wasp's nest in MW-5 needs to be removed without affecting the integrity of the well when the nest becomes dormant.
Site Access Roads and Gates	Site access gates were operable and locked. The entrance gate is locked with a Master Lock® with code #2537. TRC noted during the May 2022 site inspection that the perimeter fence was damaged at the northern and southern ends.	The perimeter fence will be repaired during the next site inspection event.
Landfill Gas Monitoring	All twelve of the gas vent stations and twelve of the thirteen monitoring points were screened for combustible gases and VOCs quarterly. During the Q4 2020 site visit the TRC field staff observed that gas vents GVS-4, GVS-6, and GVS-11 were damaged. During the May 2022 site visit, the turbine vents on GVS-4 and GVS-6 were found not rotating freely.	TRC repaired the GVS-4, GVS-6, and GVS-11 and replaced the damaged during the Q2 2021 site visit. The vents were restored to their prior, functioning state. The turbine vents at GVS-4 and GVS-6 will be replaced during the Q3 2022 site visit.

Site inspection forms including photo graphic logs from the inspection activities are presented in **Appendix B.**

3.2 Groundwater Monitoring Summary

3.2.1 Monitoring Well Gauging

On March 21, 2019, 11 groundwater monitoring wells were gauged for depth to groundwater to evaluate potential groundwater flow direction. The groundwater gauging and elevation measurements are presented on Table 2. Monitoring well MW-7 was not gauged as it has been destroyed. Groundwater elevation contours for this gauging event were inconclusive, and therefore, a Groundwater Surface Elevation Contour Map was not prepared as the presence of the landfill mass interrupts the groundwater flow direction beneath the site. However, both the overburden and bedrock groundwater flow are presumed to follow the local topography and flow to the east towards the Ramapo River, as discussed in the SMP. A summary of the Site hydrogeologic information is presented below:

March 2019 Hydrogeologic Summary			
Number of Gauged Wells	**Hydrogeologic Units**	**Hydrogeologic Strata**	**Monitoring Wells per Unit**
11	3	Overburden Bedrock Interface	5 4 2
Overburden Groundwater Elevation Range		**Bedrock Groundwater Elevation Range**	
Lowest groundwater elevation: 441.00 feet AMSL (MW-5) Highest groundwater elevation: 451.35 feet AMSL (MW-4)		Lowest groundwater elevation: 446.02 feet AMSL (MW-3) Highest groundwater elevation: 459.48 feet AMSL (MW-2)	
Inferred Overburden Groundwater Flow Direction		**Inferred Bedrock Groundwater Flow Direction**	
East		East	

On July 22, 2020, nine wells were gauged for depth to water prior to groundwater sample collection. The groundwater gauging and elevation measurements are presented on Table 3. Monitoring well MW-7 could not be gauged because it has been destroyed, MW-1 could not be located in the dense vegetation, and MW-5 was filled with a large wasp's nest that prevented well access. A summary of the Site hydrogeologic information is presented below:

July 2020 Hydrogeologic Summary			
Number of Gauged Wells	**Hydrogeologic Units**	**Hydrogeologic Strata**	**Monitoring Wells per Unit**
9	3	Overburden Bedrock Interface	3 4 2
Overburden Groundwater Elevation Range		**Bedrock Groundwater Elevation Range**	
Lowest groundwater elevation: 443.31 feet AMSL (MW-4) Highest groundwater elevation: 448.28 feet AMSL (RI-4)		Lowest groundwater elevation: 441.53 feet AMSL (MW-3) Highest groundwater elevation: 456.29 feet AMSL (RI-5A)	
Inferred Overburden Groundwater Flow Direction		**Inferred Bedrock Groundwater Flow Direction**	
East		East	

3.2.2 Groundwater Sampling

TRC collected groundwater samples from seven of the twelve monitoring wells in the monitoring well network (MW-2, MW-3, MW-4, MW-6, RI-1, RI-2, and RI-4) utilizing low-flow sampling techniques on July 22, 2020, and July 23, 2020. Monitoring well MW-7 has been destroyed, and monitoring wells RI-3 and RI-5A were partially obstructed and could not be sampled during the event. Monitoring well MW-1 was not located and MW-5 contained a large wasp's nest. As a result, the wells were not sampled. The samples were submitted to Eurofins/TestAmerica Laboratories for analysis of TAL Metals via USEPA Method 6010 and for Mercury via USEPA Method 7471. Groundwater sampling logs from the July 2020 sampling event are included as **Appendix C**.

A summary of the groundwater sampling information and pertinent well details for each well is presented below:

Summary of Groundwater Monitoring Well Details and Sampling Activities

Well ID	Monitoring Well Details				2020 Groundwater Sampling Event		
	Northing	Easting	Screen Zone (ft. bgs)	Unit Screened	DTW (ft. below TOC)	SMP Analytes	Notes
MW-1	867209.495	579046.864	17.0 – 27.0	Overburden	N/A	N/A	Not Located
MW-2	865465.749	578764.306	25.0 – 90.0	Bedrock	25.01	TAL Metals and Mercury	
MW-3	865686.277	579295.434	12.0 – 29.0	Bedrock	17.47	TAL Metals and Mercury	
MW-4	865856.397	579322.327	14.5 – 24.5	Overburden	16.76	TAL Metals and Mercury	
MW-5	866506.381	579393.325	8.0 – 18.0	Overburden	N/A	N/A	Wasp's Nest in Well
MW-6	866645.889	579351.548	7.5 – 17.5	Overburden	8.77	TAL Metals and Mercury	
MW-7	867197.633	579124.857	16.0 – 26.0	Overburden	N/A	N/A	Well Destroyed
RI-1	866512.402	579379.547	73.2 – 93.5	Bedrock	12.05	TAL Metals and Mercury	
RI-2	866639.833	579356.155	61.3 – 71.3	Interface	10.63	TAL Metals and Mercury	
RI-3	865666.361	578827.778	17.5 – 27.5	Interface	37.32	N/A	Well Partially Obstructed
RI-4	866937.016	579258.779	5.0 – 15.0	Overburden	15.17	TAL Metals and Mercury	
RI-5A	866748.097	579071.468	59.3 – 79.6	Bedrock	39.41	N/A	Well Partially Obstructed

Notes:
Additional monitoring well construction details are in included on **Table 1**.

3.2.3 Analytical Results

Groundwater analytical data for TAL Metals and Mercury are present in **Table 4**. The DUSRs are presented in **Appendix D**. Detected compounds exceeding their respective NYSDEC Class GA Values for each well are shown on **Figure 3**. A summary of the July 2020 groundwater analytical results is provided below:

Summary of Groundwater Analytical Results - TAL Metals and Mercury				
Constituent	**SCG**	**Concentration Range (µg/L)**	**Location with Highest Concentration**	**Frequency Exceeding SCG**
Metals and Mercury				
Chromium	50	ND – 130	RI-2	1/7
Iron	300	ND – 2,300	MW-6	2/7
Manganese	300	0.68 – 980	MW-6	1/7
Nickel	100	ND – 110	RI-2	1/7
Sodium	20,000	4,700 – 53,600	MW-3	4/7

3.3 Homeowner Emerging Contaminant Well Sampling

AECOM collected groundwater samples for analysis by Eurofins/Test America Laboratories of the emerging contaminants PFAS using USEPA Method 537 modified and 1,4-Dioxane using USEPA Method 8270 SIM from select monitoring wells at the Site in September 2018. The analytical results from these samples are presented in the revised SMP prepared by AECOM, dated June 2019. 1,4-Dioxane was not detected in any sample above concentrations of 1 µg/L, the MCL proposed by the NYSDOH at that time. The groundwater samples from MW-3, MW-5 and RI-4 contained concentrations of PFOA and PFOS exceeding 10 ng/L.

To investigate the potential for emerging contaminant impacts to nearby residential drinking water, TRC completed a homeowner well sampling event on July 23, 2020, at a nearby residence with groundwater supplied drinking water. The sample was collected from an outdoor spigot that was not connected to a filtration system. The sample was submitted to Eurofins/TestAmerica Laboratories for analysis of PFAS using USEPA Method 537 modified and 1,4-Dioxane using USEPA 8270 SIM. No results over above the Guidelines for Sampling and Analysis of PFAS, NYSDEC Part 375 Remedial Programs, or MCL for 1,4-Dioxane were detected. Groundwater analytical data for homeowner emerging contaminates are presented in **Table 5**.

3.4 Landfill Gas Monitoring

TRC completed landfill gas monitoring in accordance with the SMP. Monitoring included measurements of concentrations of VOCs, methane, and hydrogen sulfide. Measurements recorded during the quarterly landfill gas monitoring since 2019 are summarized in **Table 6**. Since 2019, concentrations of VOCs, methane and hydrogen sulfide at the perimeter monitoring points have decreased or not been detected.

4.0 Cost Summary

TRC did not manage the Site during the entire reporting period. The total estimated cost of the site management activities since TRC began managing the Site as part of SMP A in October 2018 through June 2022 is approximately $75,985.00. Site management activities included project management/administration, quarterly site inspections including landfill gas monitoring, sampling of seven groundwater monitoring wells for analysis of TAL Metals and Mercury, and the collection of a drinking water sample from a residence for PFAS and 1,4-Dioxane analyses. The total includes labor costs, as well as expenses associated with the project. It should be noted that the total does not include laboratory costs or other costs incurred directly by NYSDEC in support of the project. A summary of the site management costs is presented below:

Summary of Site Management Costs
October 11, 2018 through June 12, 2022

Cost Item	Amount Expended (October 2018 through June 2022)	Percent of Total Cost (Approximate)
Engineering Support		
TRC	$67,856.00	89%
Expenses		
TRC	$8,129.00	11%
Total Cost	**$75,985.00**	100%

The following provides a review of each cost item:

- Labor costs associated with project management (e.g., WA Package preparation, monthly invoicing, project scheduling and coordination, etc.), site inspections, groundwater sampling, and reporting (i.e., Site Inspection Report and PRR).
- Expense costs include travel, equipment, and supplies in support of the site inspections, groundwater sampling event, residential drinking water sampling and routine site maintenance activities.

5.0 Conclusions and Recommendations

5.1 Conclusions

- Due to the presence of the landfill waste mass, the overburden and bedrock groundwater surface elevation contours could not be prepared, however both the overburden and bedrock groundwater flow are presumed to follow the local topography and flow to the east towards the Ramapo River.
- Site COCs, were detected at concentrations exceeding their respective Class GA Values in groundwater samples collected from monitoring wells MW-3, MW-4, MW-6, RI-1, and RI-2 which have historically reported exceedances of Site related COCs. These compounds include Chromium, Iron, Manganese, Nickel and Sodium.
- Site and groundwater use were consistent with the restrictions set forth in the ROD, and SMP. Groundwater monitoring activities were completed in July 2020 for the 2017-2022 certification period. Site inspections and inspection reports were also completed. The ICs operated as intended during this reporting period.
- Monitoring wells RI-3 and RI-5A were obstructed and not sampled during the July 2020 groundwater monitoring activities. The obstructions in RI-3 and RI-5A were documented for the first time during this reporting period, specifically during the Q3 2020 groundwater monitoring event. MW-7 has been destroyed as documented in the SMP. Monitoring well MW-1 was not located, and therefore not sampled, and MW-5 contained a large wasp's nest and could not be sampled.
- Monitoring well RI-5A is up hydraulic gradient from the landfill and monitoring well MW-7 is cross hydraulic gradient. Historic groundwater data from RI-5A indicates that COCs in these wells are below SCGs, and MW-7 has not been sampled since prior to the year 2000.
- The landfill gas monitoring data since 2019 indicates that that VOCs and H2S concentrations have generally been decreasing over time at the perimeter monitoring points. Occasional detections of CH4 have been observed at select perimeter monitoring points.
- The remedy continued to be protective of human health and the environment during this reporting period.

5.2 Recommendations

- Based on the review of MW-7 and RI-5A, TRC recommends that these wells be removed from the monitoring well network. RI-5A may be decommissioned when time permits.
- Monitoring well RI-3 should be assessed in order to dislodge the obstruction from the well. If the obstruction cannot be dislodged, the monitoring well should be replaced, and the existing RI-3 should be decommissioned during replacement activities.
- Water level measurements should be collected at the 10 monitoring wells included in the monitoring well network during the biennial groundwater monitoring events to evaluate the groundwater flow direction.
- The monitoring well network should include the sampling of 10 existing monitoring wells including: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, RI-1, RI-2, RI-3, and RI-4.

- The landfill gas monitoring measurements show that VOCs, methane and hydrogen sulfide have steadily been decreasing with time. While occasional elevated detections have been observed at the interior gas monitoring points, the concentrations at the perimeter have been consistently below action levels as defined in the SMP. The purpose for quarterly monitoring of the landfill gas is to confirm that gas is not leaving the Site and potentially impacting nearby residential properties. Considering the trend of the landfill gas measurements, TRC recommends that site inspections and landfill gas monitoring events be reduced to every fifth quarter.
- Vegetation mowing should be performed annually and should be coordinated with TRC so that woody vegetation, especially in the drainage swales and basins, is sufficiently removed..
- The Certification period of five years should remain with the next PRR to be completed in July 2027.
- The 2019 Site Management Plan should be updated to reflect the removal of the two wells (MW-7 and RI-5A) from the monitoring well network, the reduced frequency of the landfill gas monitoring and the modifications to the Certification Period.

6.0 Certification of Engineering and Institutional Controls

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

- The institutional and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by DER;
- Nothing has occurred that would impair the ability of such control to protect public health and the environment; and,
- Nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control.

TRC Engineers, Inc.

Prepared By: _____
Matthew H. Hoskins, P.G
Senior Project Manager

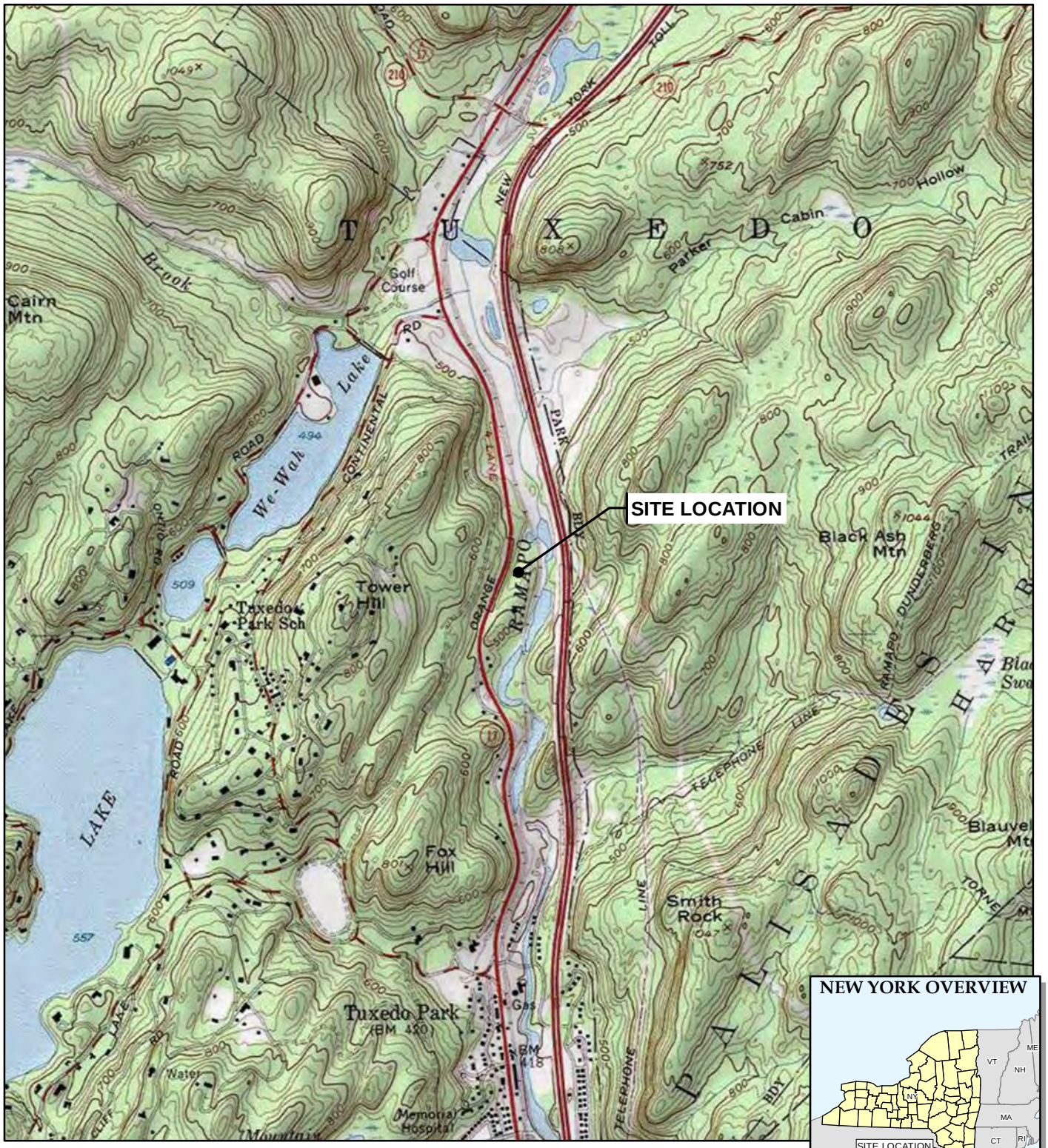
Reviewed By: _____
Kevin Sullivan, P.E.
Principal Engineer

7.0 Future Site Activities

Based on the recommendations in **Section 5.0,** the following site management activities will be completed during the next PRR reporting period (June 2022 to June 2027):

- Site Inspection – Quarterly (next scheduled Q3 2022)
- Landfill Gas Monitoring – Quarterly (next scheduled Q3 2022)
- Groundwater – Biennial (next scheduled Q3 2022)
- Repair and Corrective Actions – As needed (next scheduled Q3 2022 to address the damage on PMP-3 and replace the defective passive landfill gas vents)
- PRR – Every 5 years (next scheduled July 2027)

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES. SLOATSBURG QUAD

1 " = 2,000 '
1:24,000

0 2,000 4,000 FEET

TRC
10 Maxwell Drive, Suite 200
Clifton Park, NY 12065
Phone: 518.348.1190
www.trccompanies.com

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
TUXEDO WASTE DISPOSAL SITE - SITE NO. 336035
STATE ROUTE 17
TUXEDO, ORANGE COUNTY, NEW YORK

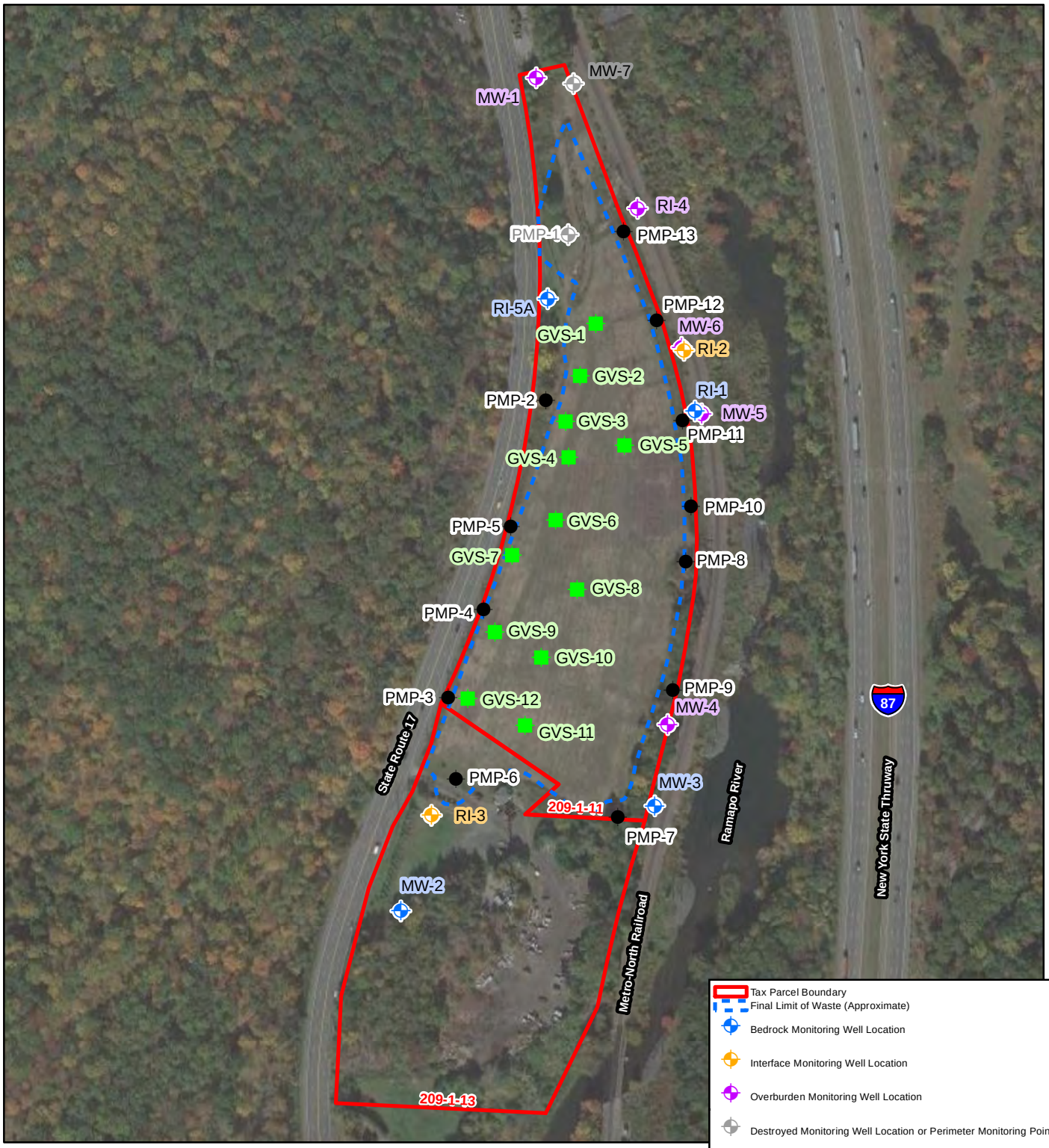
TITLE:

SITE LOCATION MAP

DRAWN BY:	M. OPEL
CHECKED BY:	C. SEROWIK
APPROVED BY:	M. HOSKINS
DATE:	SEPTEMBER 2022
PROJ. NO.:	470744.0005.0000
FILE:	Fig01_SiteLoc.mxd

FIGURE 1

S:\1-PROJECTS\NYSDEC\320919_TuxedoWaste\Fig01_SiteLoc.mxd -- Saved By: LLILL on 9/7/2022, 08:10:46 AM



BASE MAP FROM GOOGLE EARTH IMAGERY
DATA SOURCES: TRC, ORANGE COUNTY NY GIS, PERIODIC REVIEW REPORT PREPARED BY AECOM 2017

1 " = 300 '
1:3,600

0 150 300
FEET

TRC
10 Maxwell Drive, Suite 200
Clifton Park, NY 12065
Phone: 518.348.1190
www.trccompanies.com

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
TUXEDO WASTE DISPOSAL SITE - SITE NO. 336035
STATE ROUTE 17
TUXEDO, ORANGE COUNTY, NEW YORK

TITLE:

SITE LAYOUT MAP

DRAWN BY:	M. OPEL
CHECKED BY:	C. SEROWIK
APPROVED BY:	M. HOSKINS
DATE:	OCTOBER 2022
PROJ. NO.:	470744.0005.0000
FILE:	Fig02_SiteLayout.mxd

FIGURE 2

S:\1-PROJECTS\NYSDEC\320919_TuxedoWaste\Fig02_SiteLayout.mxd -- Saved By: LLILL on 10/25/2022, 08:14:06 AM

CONSTITUENT	Class GA Value
Metals	µg/L
Chromium	50
Iron	300
Manganese	300
Nickel	100
Sodium	20,000

MW-6	
CONSTITUENT	7/23/2020
Metals	µg/L
Iron	**2,300**
Manganese	**980**

RI-2	
CONSTITUENT	7/23/2020
Metals	µg/L
Chromium	**130**
Iron	**810**
Nickel	**110**
Sodium	**44,300**

RI-1	
CONSTITUENT	7/23/2020
Metals	µg/L
Sodium	**31,700**

MW-4	
CONSTITUENT	7/23/2020
Metals	µg/L
Sodium	**41,400**

MW-3	
CONSTITUENT	7/23/2020
Metals	µg/L
Sodium	**53,600**

MW-1
MW-7
RI-4
RI-5A
MW-6
RI-2
RI-1
MW-5
MW-4
MW-3
RI-3
MW-2
209-1-11
209-1-13
State Route 17
Metro-North Railroad
New York State Thruway
Ramapo River

LEGEND

- TAX PARCEL BOUNDARY
- BEDROCK MONITORING WELL LOCATION
- INTERFACE MONITORING WELL LOCATION
- OVERBURDEN MONITORING WELL LOCATION
- DESTROYED MONITORING WELL LOCATION

NOTES:

1. LOCATIONS AND DIMENSIONS OF PHYSICAL FEATURES AND PROPERTY BOUNDARIES ARE APPROXIMATE.
2. BASE MAP FROM GOOGLE EARTH IMAGERY.
3. DATA SOURCES: TRC, ORANGE COUNTY NY GIS, PERIODIC REVIEW REPORT PREPARED BY AECOM 2017.
4. VALUES IN **BOLD** INDICATE THE COMPOUND WAS DETECTED
5. **SHADING INDICATES RESULT ABOVE CLASS GA VALUE.**
6. NYSDEC AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES FOR CLASS GA WATER.

ACRONYMS:
µg/L - MICROGRAMS PER LITER

N

1:3,000
1" = 250'
0 125 250 FEET

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
TUXEDO WASTE DISPOSAL SITE - SITE NO. 336035
STATE ROUTE 17
TUXEDO, ORANGE COUNTY, NEW YORK

TITLE: SUMMARY OF DETECTED COMPOUNDS EXCEEDING NYSDEC GROUNDWATER QUALITY STANDARDS/GUIDANCE - JULY 2020

DRAWN BY:	L. LILL	PROJ. NO.:	470744.0005.0000
CHECKED BY:	C. SEROWIK		FIGURE 3
APPROVED BY:	M. HOSKINS		
DATE:	SEPTEMBER 2022		

TRC
10 Maxwell Drive
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: tuxedo_prr_2022.aprx

Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet; Map Rotation: 0
Saved By: LILL on 9/7/2022 - 9:19:45 AM; File Path: T:\PROJECTS\YOSEG\470744_05_TuxedoWasteDisposal\Site\2-4PRR\tuxedo_prr_2022\tuxedo_prr_2022.aprx; Layout Name: Figure 4 - Summary Exceedance July 2020

Tables

Table 1
New York State Department of Environmental Conservation
Tuxedo Waste Disposal Site - Tuxedo, New York
Monitoring Well Construction Summary

						Screen			*Elevation (feet AMSL)*				*Location*	
											Screen			
Well ID	**Installation Date**	**Well Dia. (inches)**	**Well Material**	**Total Depth (feet bgs)**	**Screened Formation**	**Top (feet bgs)**	**Bottom (feet bgs)**	**Length (feet)**	**Casing Top**	**Ground Surface**	**Top**	**Bottom**	**Northing**	**Easting**
MW-1	7/20/1988	4	PVC	27.00	Overburden	17.00	27.00	10.00	468.40	466.40	449.40	439.40	867209.495	579046.864
MW-2	9/1/1988	4	PVC	89.65	Bedrock	25.00	90.00	65.00	480.06	477.69	452.69	387.69	865465.749	578764.306
MW-3	7/27/1988	3	PVC	30.05	Bedrock	12.00	29.00	17.00	459.00	457.20	445.20	428.20	865686.277	579295.434
MW-4	7/27/1988	2	PVC	26.16	Overburden	14.50	24.50	10.00	460.07	457.90	443.40	433.40	865856.397	579322.327
MW-5	7/26/1988	2	PVC	19.40	Overburden	8.00	18.00	10.00	448.81	447.06	439.06	429.06	866506.381	579393.325
MW-6	7/25/1988	2	PVC	19.40	Overburden	7.50	17.50	10.00	456.83	454.80	447.30	437.30	866645.889	579351.548
MW-7*	7/25/1998	2	PVC	NM	Overburden	16.00	26.00	10.00	466.93	454.80	438.80	428.80	867197.633	579124.857
RI-1	9/17/1990	2	Stainless Steel	93.63	Bedrock	73.20	93.50	20.30	459.48	456.39	383.19	362.89	866512.402	579379.547
RI-2	9/8/1990	4	Stainless Steel	72.60	Interface	61.30	71.30	10.00	458.02	455.91	394.61	384.61	866639.833	579356.155
RI-3	9/18/1990	2	PVC	44.60	Interface	17.50	27.50	10.00	479.79	478.05	460.55	450.55	865666.361	578827.778
RI-4	8/3/1990	2	PVC	16.65	Overburden	5.00	15.00	10.00	463.45	459.38	454.38	444.38	866937.016	579258.779
RI-5A	8/23/1990	2	PVC	81.60	Bedrock	59.30	79.60	20.30	495.70	459.38	400.08	379.78	866748.10	579071.47

Notes
AMSL : Above Mean Sea Level
feet bgs : Feet Below Ground Surface
PVC : Polyvinyl Chloride
NM : Not Measured
Dia. : Diameter
ID : Identification
* : Monitoring Well Destroyed
Coordinates are from AECOM's 2017 Periodic Review Report and were converted to New York State Plane X Y Survey Feet (NY East 3101) by TRC.
TOC elevation measurements are from AECOM's 2019 Site Management Plan.

Table 2
New York State Department of Environmental Conservation
Tuxedo Waste Disposal Site - Tuxedo, New York
Summary of Depth to Water Measurements and Groundwater Elevations
March 2019

Well ID	Screened Formation	Northing	Easting	TOC Elevation (feet AMSL)	Depth to Water (feet below TOC)	Depth to Bottom (feet below TOC)	Groundwater Elev. (feet AMSL)
MW-1	Overburden	867209.495	579046.864	468.40	17.54	29.82	450.86
MW-2	Bedrock	865465.749	578764.306	480.06	20.58	91.20	459.48
MW-3	Bedrock	865686.277	579295.434	459.00	12.98	30.71	446.02
MW-4	Overburden	865856.397	579322.327	460.07	8.72	30.70	451.35
MW-5	Overburden	866506.381	579393.325	448.81	7.81	19.62	441.00
MW-6	Overburden	866645.889	579351.548	456.83	7.81	18.48	449.02
MW-7*	Overburden	867197.633	579124.857	466.93	N/A	N/A	N/A
RI-1	Bedrock	866512.402	579379.547	459.48	9.38	94.86	450.10
RI-2	Interface	866639.833	579356.155	458.02	8.12	72.06	449.90
RI-3	Interface	865666.361	578827.778	479.79	34.81	45.15	444.98
RI-4	Overburden	866937.016	579258.779	463.45	13.80	16.87	449.65
RI-5A	Bedrock	866748.097	579071.468	495.70	37.23	82.52	458.47

Notes

Elev. : Elevation
N/A : Data Not Available
AMSL : Above Mean Sea Level
ID : Identification
TOC : Top of Casing
* : Well Destroyed

Coordinates are from AECOM's 2017 Periodic Review Report and were converted to New York State Plane X Y Survey Feet (NY East 3101) by TRC.
TOC elevation measurements are from AECOM's 2019 Site Management Plan.

Table 3
New York State Department of Environmental Conservation
Tuxedo Waste Disposal Site - Tuxedo, New York
Summary of Depth to Water Measurements and Groundwater Elevations
July 2020

Well ID	Screened Formation	Northing	Easting	TOC Elevation (feet AMSL)	Depth to Water (feet below TOC)	Depth to Bottom (feet below TOC)	Groundwater Elev. (feet AMSL)
MW-1	Overburden	867209.495	579046.864	468.40	NL	NL	NL
MW-2	Bedrock	865465.749	578764.306	480.06	25.01	91.20	455.05
MW-3	Bedrock	865686.277	579295.434	459.00	17.47	30.71	441.53
MW-4	Overburden	865856.397	579322.327	460.07	16.76	30.70	443.31
MW-5*	Overburden	866506.381	579393.325	448.81	N/A	N/A	N/A
MW-6	Overburden	866645.889	579351.548	456.83	8.77	18.48	448.06
MW-7**	Overburden	867197.633	579124.857	466.93	N/A	N/A	N/A
RI-1	Bedrock	866512.402	579379.547	459.48	12.05	94.86	447.43
RI-2	Interface	866639.833	579356.155	458.02	10.63	72.06	447.39
RI-3	Interface	865666.361	578827.778	479.79	37.32	44.83	442.47
RI-4	Overburden	866937.016	579258.779	463.45	15.17	16.87	448.28
RI-5A	Bedrock	866748.097	579071.468	495.70	39.41	81.99	456.29

Notes

Elev. : Elevation
N/A : Data Not Available
NL : Well Not Located
AMSL : Above Mean Sea Level
ID : Identification
TOC : Top of Casing
* : Wasps' Nest, Unable to be Gauged
** : Monitoring Well Destroyed

Coordinates are from AECOM's 2017 Periodic Review Report and were converted to New York State Plane X Y Survey Feet (NY East 3101) by TRC
TOC elevation measurements are from AECOM's 2019 Site Management Plan.

Table 4
New York State Department of Environmental Conservation
Tuxedo Waste Disposal Site - Tuxedo, New York
Summary of Analytical Results of Groundwater Monitoring Wells - July 2020

			Sample Location:		MW-2		MW-3		MW-4		MW-6		RI-1		RI-2		RI-4	
			Sample Name:		TWD-MW-2		TWD-MW-3		TWD-MW-4		TWD-MW-6		TWD-RI-1		TWD-RI-2		TWD-RI-4	
			Laboratory Sample Identification:		480-172889-1		480-172889-8		480-172889-7		480-172889-4		480-172889-6		480-172889-3		480-172889-2	
			Sample Date:		07/22/2020		07/23/2020		07/23/2020		07/23/2020		07/23/2020		07/23/2020		07/23/2020	
Metals, total	Unit	Guidance Value*		Results		Results		Results		Results		Results		Results		Results	
Aluminum	ug/L	NS		**160**	**J**	200	U	200	U	200	U	**340**		**220**		200	U
Antimony	ug/L	3		20	U	20	U	20	U	20	U	20	U	20	U	20	U
Arsenic	ug/L	25		15	U	15	U	15	U	15	U	15	U	15	U	15	U
Barium	ug/L	1,000		**8**		**11**		**17**		**36**		**9**		**9.8**		**31**	
Beryllium	ug/L	3		2	U	2	U	2	U	2	U	2	U	2	U	2	U
Cadmium	ug/L	5		2	U	2	U	2	U	2	U	2	U	2	U	2	U
Calcium	ug/L	NS		**22,600**		**19,500**		**41,300**		**90,300**		**61,800**		**35,300**		**81,400**	
Chromium	ug/L	50		**1**	**J**	4	U	4	U	4	U	4	U	**130**		4	U
Cobalt	ug/L	NS		4	U	4	U	4	U	4	U	4	U	**1.7**	**J**	4	U
Copper	ug/L	200		10	U	10	U	10	U	10	U	10	U	10	U	10	U
Iron	ug/L	300		**170**		50	U	**32**	**J**	**2,300**		**100**		**810**		50	U
Lead	ug/L	25		10	U	10	U	10	U	10	U	10	U	10	U	**3.8**	**J**
Magnesium	ug/L	35,000		**6,100**		**4,900**		**8,200**		**6,800**		**9,700**		**9,500**		**7,600**	
Manganese	ug/L	300		**8.3**		**0.68**	**J**	**6.7**		**980**		**4.6**		**60**		**6.2**	
Mercury	ug/L	0.7		0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel	ug/L	100		10	U	10	U	10	U	10	U	10	U	**110**		**4.6**	**J**
Potassium	ug/L	NS		**1,200**		**1,200**		**1,700**		**2,600**		**2,200**		**1,300**		**5,400**	
Selenium	ug/L	10		25	U	25	U	25	U	25	U	25	U	25	U	25	U
Silver	ug/L	50		6	U	6	U	6	U	6	U	6	U	6	U	6	U
Sodium	ug/L	20,000		**4,700**		**53,600**		**41,400**		**4,900**		**31,700**		**44,300**		**5,600**	
Thallium	ug/L	0.5		20	U	20	U	20	U	20	U	20	U	20	U	20	U
Vanadium	ug/L	NS		**3.1**	**J**	5	U	5	U	5	U	5	U	**1.8**	**J**	5	U
Zinc	ug/L	2,000		**3.2**	**J**	10	U	**1.7**	**J**	10	U	**2.4**	**J**	**1.7**	**J**	**8.6**	**J**

Notes:

ug/L - micrograms per liter.

NS - No listed standards exist for this analyte.

J - Estimated value.

U - Analyte was not detected at specified quantitation limit.

Values in **bold** indicate the analyte was detected.

Values shown in Bold and shaded type exceed the listed criteria.

* - NYSDEC Ambient Water Quality Standards and Guidance Values for Class GA Water.

Table 5
New York State Department of Environmental Conservation
Tuxedo Waste Disposal Site - Tuxedo, New York
Summary of Analytical Results of Residential Well - July 2020

		Sample Location:	WP-RES-1	
		Sample Name:	TWD-WP-RES-1	
		Laboratory Sample Identification:	480-172889-5	
		Sample Date:	07/23/2020	
SVOCs	Unit	Guidance Value*	Results	
1,4-Dioxane	ug/L	1	0.20	U
PFAS	Unit	Guidance Value**	Results	
Perfluorobutanoic acid (PFBA)	ng/L	100	1.7	U
Perfluoropentanoic acid (PFPeA)	ng/L	100	**0.65**	**J**
Perfluorobutanesulfonic acid (PFBS)	ng/L	100	1.7	U
Perfluorohexanoic acid (PFHxA)	ng/L	100	1.7	U
Perfluoroheptanoic acid (PFHpA)	ng/L	100	1.7	U
Perfluorohexanesulfonic acid (PFHxS)	ng/L	100	1.7	U
Perfluorooctanoic acid (PFOA)	ng/L	10	1.7	U
6:2 Perfluorooctane Sulfonate (6:2 FTS)	ng/L	100	17	U
Perfluoroheptanesulfonic acid (PFHpS)	ng/L	100	1.7	U
Perfluorononanoic acid (PFNA)	ng/L	100	1.7	U
Perfluorooctanesulfonic acid (PFOS)	ng/L	10	1.7	U
Perfluorodecanoic acid (PFDA)	ng/L	100	1.7	U
8:2 Perfluorodecane Sulfonate (8:2 FTS)	ng/L	100	17	U
2-(N-methyl perfluorooctanesulfonamido) acetic acid (N-MeFOSAA)	ng/L	100	17	U
Perfluoroundecanoic acid (PFUnA)	ng/L	100	1.7	U
Perfluorodecanesulfonic acid (PFDS)	ng/L	100	1.7	U
Perfluorooctane Sulfonamide (PFOSA)	ng/L	100	8.7	U
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine (N-EtFOSAA)	ng/L	100	17	U
Perfluorododecanoic acid (PFDoA)	ng/L	100	1.7	U
Perfluorotridecanoic acid (PFTriA)	ng/L	100	1.7	U
Perfluorotetradecanoic acid (PFTeA)	ng/L	100	1.7	U
Sum of PFOA and PFOS	ng/L	10	ND	
Total PFAS	ng/L	500	**0.65**	**J**

Notes:

ng/L - nanograms per liter.

ug/L - micrograms per liter.

ND - Not detected.

J - Estimated value.

U - Analyte was not detected at specified quantitation limit.

Values in **bold** indicate the analyte was detected.

SVOCs - Semi-Volatile Organic Compounds.

PFAS - Per- and Polyfluoroalkyl Substances.

* - NY Maximum Contaminant Level (MCL).

** - Guidelines for Sampling and Analysis of PFAS, NYSDEC Part 375 Remedial Programs.

Table 6
New York State Department of Environmental Conservation
Tuxedo Waste Disposal Site - Tuxedo, New York
Summary of Landfill Gas Monitoring Results

Station No.	Q3 2019						Q4 2019						Q1 2020						Q2 2020					
	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)
GVS-1	0.0	0.1	20.9	0.0	0.0	NS	NS	NS	NS	NS	NS	NS	0.0	2.4	16.5	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-2	0.1	0.1	21.0	0.0	0.0	NS	NS	NS	NS	NS	NS	NS	3.7	7.8	10.4	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-3	9.8	9.4	11.3	0.0	0.0	NS	NS	NS	NS	NS	NS	NS	6.7	7.3	11.8	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-4	5.0	11	6.6	2.0	0.0	NS	NS	NS	NS	NS	NS	NS	6.9	14.4	3.2	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-5	0.0	2.3	18.6	0.0	0.0	NS	NS	NS	NS	NS	NS	NS	0.0	7.4	9.7	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-6	4.7	8.8	8.80	2.0	0.0	NS	NS	NS	NS	NS	NS	NS	0.0	0.1	19.2	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-7	4.7	8.2	10.6	2.0	0.0	NS	NS	NS	NS	NS	NS	NS	8.3	15.4	1.6	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-8	3.0	11.2	6.1	3.0	0.0	NS	NS	NS	NS	NS	NS	NS	3.9	13.8	2.6	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-9	0.5	2.5	18.3	0.0	0.0	NS	NS	NS	NS	NS	NS	NS	0.0	0.1	19.2	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-10	5.6	8.6	5.3	0.0	0.0	NS	NS	NS	NS	NS	NS	NS	0.0	0.1	19.3	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-11	0.8	9.4	10.6	0.0	0.0	NS	NS	NS	NS	NS	NS	NS	0.0	0.1	19.2	NS	NS	NS	NS	NS	NS	NS	NS	NS
GVS-12	0.0	0.0	21.3	0.0	0.0	NS	NS	NS	NS	NS	NS	NS	0.0	0.1	19.2	NS	NS	NS	NS	NS	NS	NS	NS	NS
PMP-1	Not Found						Not Found						Not Found						Not Found					
PMP-2	0.0	0.2	20.7	0.0	0.0	0.0	NS	NS	NS	NS	NS	NS	0.0	0.1	19.6	NS	NS	0.2	NS	NS	NS	NS	NS	NS
PMP-3	0.0	0.5	20.7	0.0	0.0	0.0	NS	NS	NS	NS	NS	NS	0.0	0.1	20.1	NS	NS	1.0	NS	NS	NS	NS	NS	NS
PMP-4	0.0	0.1	21.1	0.0	0.0	0.1	NS	NS	NS	NS	NS	NS	0.0	0.6	19.2	NS	NS	0.0	NS	NS	NS	NS	NS	NS
PMP-5	1.0	0.0	21.3	0.0	0.0	9.3	NS	NS	NS	NS	NS	NS	0.0	0.2	19.9	NS	NS	0.1	NS	NS	NS	NS	NS	NS
PMP-6	0.0	0.0	21.4	0.0	0.0	0.0	NS	NS	NS	NS	NS	NS	0.3	0.3	20	NS	NS	0.1	NS	NS	NS	NS	NS	NS
PMP-7	0.0	0.8	20.9	0.0	0.0	0.0	NS	NS	NS	NS	NS	NS	0.0	0.2	20.2	NS	NS	0.0	NS	NS	NS	NS	NS	NS
PMP-8	0.0	0.3	21.4	0.0	0.0	0.0	NS	NS	NS	NS	NS	NS	0.0	0.1	20.4	NS	NS	0.0	NS	NS	NS	NS	NS	NS
PMP-9	0.0	0.0	21.5	0.0	0.0	0.0	NS	NS	NS	NS	NS	NS	0.0	0.5	19.9	NS	NS	0.0	NS	NS	NS	NS	NS	NS
PMP-10	0.0	0.3	21.3	0.0	0.0	0.0	NS	NS	NS	NS	NS	NS	0.0	0.3	20.3	NS	NS	0.0	NS	NS	NS	NS	NS	NS
PMP-11	0.0	0.9	19.2	0.0	0.0	61.9	NS	NS	NS	NS	NS	NS	0.0	0.3	19.8	NS	NS	0.0	NS	NS	NS	NS	NS	NS
PMP-12	0.0	0.1	21.4	0.0	0.0	0.2	NS	NS	NS	NS	NS	NS	0.0	0.1	20.5	NS	NS	0.1	NS	NS	NS	NS	NS	NS
PMP-13	0.0	0.6	21.3	0.0	0.0	0.0	NS	NS	NS	NS	NS	NS	0.0	0.2	20.4	NS	NS	0.1	NS	NS	NS	NS	NS	NS

Notes:
CH4 - Methane
CO2 - Carbon Dioxide
O2 - Oxygen
H2S - Hydrogen Sulfide
CO - Carbon Monoxide
VOC - Volatile Organic Compounds
ppm - parts per million
NS - Not Sampled
Gas Vent Stations are not monitored for Volatile Organic Compounds

Table 6
New York State Department of Environmental Conservation
Tuxedo Waste Disposal Site - Tuxedo, New York
Summary of Landfill Gas Monitoring Results

	Q3 2020						Q4 2020						Q1 2021						Q2 2021					
Station No.	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)
GVS-1	0	0.1	20.7	0	0	NS	0.1	0.1	20.7	0	0	NS	0	NS	13	0	0	NS	0.1	0.1	20.9	0	0	NS
GVS-2	0	0.1	19.5	0	0	NS	13.2	15.8	3.4	0	0	NS	3.6	NS	17	0	0	NS	0.2	0.5	21	0	0	NS
GVS-3	0	0	20	0	0	NS	0.3	0.5	20.1	0	0	NS	9.9	NS	10.7	0	0	NS	0	10.9	18.9	0	0	NS
GVS-4	0	1.5	18.9	0	0	NS	1.1	1.5	18.7	0	0	NS	Damaged						0	13	20.1	0	0	NS
GVS-5	0.2	0	20.1	0	0	NS	0.2	5	14.1	0	0	NS	0	NS		0	0	NS	0	13.9	20.9	0	0	NS
GVS-6	Damaged						Damaged						Damaged						0	4	19.9	0	0	NS
GVS-7	0.4	0	20.8	0	0	NS	7.7	14.6	3.6	0	0	NS	0	NS	1	0.1	8	NS	0	11.1	21	0.1	0.1	NS
GVS-8	0	1.4	18.6	0	0	NS	3.7	14	4.6	0	0	NS	0	NS	5	4	0	NS	0	13.7	19.9	3	3	NS
GVS-9	0	0	16.8	0	0	NS	1.1	14	2.8	0	0	NS	0	NS	11.1	0	0	NS	0	0.5	20.9	0	0	NS
GVS-10	0	0	20.1	0	0	NS	0.7	2.2	18.5	0	0	NS	0	NS	4.1	0	0	NS	0.3	0.3	11.1	0	0	NS
GVS-11	Damaged						Damaged						0	NS	13.5	0	0	NS	0	4	18.1	0	0	NS
GVS-12	0	0.2	20.9	0	0	NS	0	0.2	20.9	0	0	NS	Damaged						0.1	0.2	19	0	0	NS
PMP-1	Not Found						Not Found						Not Found						Not Found					
PMP-2	0	0	20	0	0	0	0	0	18.8	0	0	0	0	0	20.3	0	0	0	0	0	20.9	0	0.1	0
PMP-3	Not Found						Not Found						Not Found						Not Found					
PMP-4	0	0	19.9	0	0	0.1	0	0	19.8	0	0	0.1	0	0	20.1	0	0	0	0	0	21	0	0	0
PMP-5	0	0	20.4	0	0	0	0	0	19.9	0	0.5	0	0	0	20.2	0	0	0	0	0	20.1	0	0	0
PMP-6	0	0	20.1	0	0	0.2	0	0	20.2	0	0	0.1	0	0	20.4	0	0	0	0	0	20.4	0	0	0
PMP-7	0	0	19.3	0	0	0	0	0	20.3	0	0	0	0	0	20.1	0	0	0	0	0	20.3	0	0	0
PMP-8	0	0	20.1	0	0	0.1	0	0	20	0	0	0	0	0	20.9	0	0	0	0	0	20.9	0	0	0
PMP-9	0	0	20	0	0	0	0	0	20.1	0	0.3	0	0	0	20.9	0	0	0	0	0	20.1	0	0	0
PMP-10	0	0	20.5	0	0	0	0	0	20	0	0	0	0	0	20.9	0	0	0	0	0	20.4	0	0	0
PMP-11	0	0	19.7	0	0.2	0.1	0	0	19.3	0	0.2	0.4	0	0	20.4	0	0	0	0	0	21.3	0	0	0
PMP-12	0	0	20.2	0	0	0	0	0	18.7	0	0	0.2	0	0	21	0	0	0	0	0	20.1	0	0	0
PMP-13	0	0	20.8	0	0	0	0	0	21.3	0	0	0	0	0	21	0	0	0	0	0	21.3	0	0	0

Notes:
CH4 - Methane
CO2 - Carbon Dioxide
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	Q3 2021						Q4 2021						Q1 2022						Q2 2022					
Station No.	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)	CH4 LEL (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (%)	VOCs (ppm)
GVS-1	0	0.1	1.3	0	0	NS	0.1	NS	NS	0	NS	NS	0.1	NS	NS	0	NS	0	2.8	NS	NS	0	NS	0
GVS-2	0	0.1	20.6	0	0	NS	3.9	NS	NS	0	NS	NS	1.9	NS	NS	0	NS	0	0	NS	NS	0	NS	0
GVS-3	0	9.4	20.6	0	0	NS	1.3	NS	NS	0	NS	NS	0.1	NS	NS	0	NS	0	0	NS	NS	0	NS	0
GVS-4	0	11	20.8	0	0	NS	10.9	NS	NS	0	NS	NS	7.2	NS	NS	0	NS	1.9	0	NS	NS	0	NS	0
GVS-5	0	2.3	20.3	0	0	NS	0.1	NS	NS	0	NS	NS	0.1	NS	NS	0	NS	0	0	NS	NS	0	NS	0.4
GVS-6	0	8.8	20.1	0	0	NS	6.8	NS	NS	0	NS	NS	1.4	NS	NS	0	NS	0.5	0	NS	NS	0	NS	0
GVS-7	0	8.2	20.4	0	1	NS	11.8	NS	NS	0	NS	NS	11.2	NS	NS	0	NS	0.1	0	NS	NS	0	NS	0
GVS-8	0	11.2	20.2	0	0	NS	4	NS	NS	0	NS	NS	1.3	NS	NS	0	NS	0	0	NS	NS	0	NS	0
GVS-9	0	2.5	20.4	0	0	NS	1.5	NS	NS	0	NS	NS	8.1	NS	NS	0	NS	1.1	0	NS	NS	0	NS	0
GVS-10	0	8.6	20.2	0	0	NS	3.6	NS	NS	0	NS	NS	3.6	NS	NS	0	NS	0.4	0	NS	NS	0	NS	0
GVS-11	0	9.4	20	0	0	NS	1.7	NS	NS	0	NS	NS	1.2	NS	NS	0	NS	0	0	NS	NS	0	NS	0
GVS-12	0	0	19.7	0	0	NS	0.1	NS	NS	0	NS	NS	2	NS	NS	0	NS	0.2	0	NS	NS	1	NS	0.4
PMP-1	Not Found						Not Found						Not Found						Not Found					
PMP-2	1	0.1	18.8	0	0.1	0	1	NS	NS	0	NS	NS	0	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-3	Not Found						Not Found						Not Found						0	NS	NS	0	NS	0
PMP-4	2	0	19.8	0	0	0.1	1	NS	NS	0	NS	NS	1	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-5	0	0	19.9	0	0	0	1	NS	NS	0	NS	NS	0	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-6	1	0	20.9	0	0	0	1	NS	NS	0	NS	NS	1	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-7	0	0	20.3	0	0	0	1	NS	NS	0	NS	NS	0	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-8	2	0	20.1	0	0	0	1	NS	NS	0	NS	NS	0	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-9	0	0.1	20	0	0	0	1	NS	NS	0	NS	NS	0	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-10	0	0.3	21.3	0	0	0	1	NS	NS	0	NS	NS	0	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-11	0	0.9	21.3	0	0	0.4	1	NS	NS	0	NS	NS	0	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-12	0	0.1	21.4	0	0	0.2	1	NS	NS	0	NS	NS	0	NS	NS	0	NS	0	0	NS	NS	0	NS	0
PMP-13	0	0	21.3	0	0	0	1	NS	NS	0	NS	NS	0	NS	NS	0	NS	0	0	NS	NS	0	NS	0

Notes:
CH4 - Methane
CO2 - Carbon Dioxide
O2 - Oxygen
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Gas Vent Stations are not monitored for Volatile Organic Compounds

Appendix A

Institutional Control/Engineering Control Standby Consultant/Contractor Certification Form

Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details **Box 1**

Site No. 336035

Site Name Tuxedo Waste Disposal Site

Site Address: Route 17 Zip Code: 10987
City/Town: Tuxedo
County: Orange
Site Acreage: 12.0

Reporting Period: June 12, 2017 to June 12, 2022

	YES	NO
1. Is the information above correct?	X	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4. To your knowledge have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. To your knowledge is the site currently undergoing development?	☐	X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill	X	☐
7. Are all ICs/ECs in place and functioning as designed?	X	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

_____ _____
Signature of Standby Consultant/Contractor Date

SITE NO. 336035 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
9-1-11	Sarkis Khourouzian	
		Soil Management Plan
		Monitoring Plan
		Site Management Plan
		O&M Plan

ICs in ROD include site use restrictions

9-1-13	Patricia Iazzetti	
		Monitoring Plan
		O&M Plan
		Soil Management Plan
		Site Management Plan

IC:
1994 Consent Order with owner (Ronald Iazzetti) provides for a land-use restriction such that there is no disturbance or excavation of waste materials on site; no change in use unless written approval is obtained from the NYSDEC; access is granted to the NYSDEC and its agents for the purposes of inspection, sampling, testing and remediation; 60-day prior notification to NYSDEC of any proposed property transfer. The consent agreement is binding on all successors and assigns.

A Deed restriction was required by Consent Order to be filed with the County Clerk for parcel 9-1-13. Verification of placement of this DCR is needed.

A Site Management Plan is in place which species requirements for maintaiing the Engineering controls and adhering to requirements for or restrictions to land and groundwater use.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
9-1-11	
	Cover System
	Fencing/Access Control

Engineering Controls include fencing, a geotextile and soil cover, and groundwater monitoring well network.

9-1-13	
	Cover System

Cover system and monitoring wells. A small portion of the landfill cap and two monitoring wells are on this property and must be maintained.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification, including data and material prepared by previous contractors for the current certifying period, if any;

   b) 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 is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

_____ _____

Signature of Standby Consultant/Contractor Date

Box 6

IC/EC CERTIFICATIONS

Professional Engineer Signature

I certify that all information in Boxes 2 through 5 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 Kevin D. Sullivan at TRC Engineers, Inc.
print name

1090 Union Road, Suite 280

West Seneca, NY,
(print business address)

am certifying as a Professional Engineer.

Signature of Professional Engineer

11/29/2022
Date

Appendix B

Site Inspection Forms and Photographic Logs

TRC		**DATE: Thursday, March 21, 2019**
		REPORT NO. 20190321
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Light Rain	0830	40°F	None	0-5	ENE
Light Rain	1300	45°F	None	0-5	ENE

SITE CONDITIONS: Clear

WORK GOAL FOR DAY: Site inspection and groundwater sampling

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Steve Johansson	TRC Engineers, Inc.	08:00	14:00
Marnie Chancey	TRC Engineers, Inc.	08:00	14:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 2000 Plus		
Oil/Water Interface Probe	Heron		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Ryan Jorrey

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Thursday, March 21, 2019**
		REPORT NO. 20190321
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a quarterly site inspection and landfill gas monitoring event on Thursday, March 21, 2019 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The objective of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

TRC conducted a site walk and initial inspection while conducting the groundwater gauging event. All Site wells were in fair condition. All the caps on each well were damaged and need replacement. Monitoring well MW-7 was obstructed and could not be gauged.

The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was dry and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition. The drainage swales and channels did not contain any water. The drainage swales and channels appear to be in good condition do not contain any obstructions which could potentially prohibit stormwater flow. Vegetation in the drainage channels is currently short and would not impede the flow of water. The swales, channels and basin are stable with no noticeable areas of active erosion.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured and functioning. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents, and no gas odors or problems related to the gas venting system were observed during the site inspection. TRC conducted the gas monitoring event on all twelve gas vent stations (GVS), and twelve of thirteen of the perimeter monitoring points (PMP). TRC investigated the gas emissions at the 12, as well as, 12 of the 13 perimeter monitoring points (PMP). PMP-1 was not located, and therefore, was not monitored.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Steve Johansson	**PRINT NAME:** Nate Kranes

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: March 21, 2019

Photo 1: Looking southwest. View of the project and entry gate.

Photo 2: Looking north. View of drainage swale north of the entry gate.

Photo 3: Looking southeast. View of the southeast slope of the landfill cap.

Photo 4: Looking south. View of drainage swale on the western side of the site.

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: March 21, 2019

Photo 5: Looking northeast. View of landfill cap.

Photo 6: Looking east. View of drainage swale on eastern slope of landfill.

Photo 7: Looking west. View of perimeter monitoring point (PMP).

Photo 8: Looking southeast. View of gas vent station-1 (GVS-1).

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: March 21, 2019

Photo 9: View of MW-7, well is obstructed.

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TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Steve Johansson	3 of 3	NYSDEC	Tuxedo Waste Disposal Tuxedo Park, NY	TRC

		DATE: Monday, May 13, 2019
		REPORT NO. 20190513
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Rain	0830	50°F	None	0-5	ENE
Rain	1300	50°F	None	0-5	ENE

SITE CONDITIONS: Wet, rain

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Steve Johansson	TRC Engineers, Inc.	13:00	17:00
Nate Peterson	TRC Engineers, Inc.	13:00	17:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 2000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Nate Kranes

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Monday, May 13, 2019**
		REPORT NO. 20190513
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a quarterly site inspection and landfill gas monitoring event on Monday, May 13, 2019 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The objective of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

TRC conducted a site walk and inspection while conducting the groundwater gauging event. All Site wells were in fair condition. As previously noted, the caps on each well were damaged; and therefore, were replaced during the site inspection. Monitoring well MW-7 was obstructed and could not be gauged.

The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was wet and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition. The drainage swales and channels did not contain any water. The drainage swales and channels appear to be in good condition and do not contain any obstructions which could potentially prohibit stormwater flow. Vegetation in the drainage channels is currently short and would not impede the flow of water. The swales, channels and basin are stable with no noticeable areas of active erosion.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured and functioning. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents, and no gas odors or problems related to the gas venting system were observed during the site inspection. TRC conducted the gas monitoring event on all 12 gas vent stations (GVS), and 12 of 13 perimeter monitoring points (PMP). TRC investigated the gas emissions at the 12 GVS, as well as, 12 of the 13 perimeter monitoring points (PMP). PMP-1 was not located, and therefore, was not monitored.

PREPARED BY (OBSERVER): Steve Johansson	**REVIEWED BY:** Nate Kranes

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: May 13, 2019

Photo 1: Looking north. View of the north end of the Site and a drainage swale.

Photo 2: Looking southwest. View of the southeast slope of the landfill cap.

Photo 3: Looking south. View of the landfill cap and gas monitoring vents.

Photo 4: Looking south. View of drainage area on northern side of landfill.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Steve Johansson	1 of 1	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

TRC		**DATE: Wednesday, September 25, 2019**
		REPORT NO. 20190925
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS:	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Clear	1500	80°F	None	0-5	NE
Clear	1730	80°F	None	0-5	NE

SITE CONDITIONS: Dry, clear

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Andrew Fishman	TRC Engineers, Inc.	15:00	17:30
Nate Peterson	TRC Engineers, Inc.	15:00	17:30

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 2000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Steve Johansson

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Wednesday, September 25, 2019**
		REPORT NO. 20190514
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a quarterly site inspection and landfill gas monitoring event on Wednesday, September 25, 2019 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The objective of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

TRC conducted a site walk and inspection while conducting the landfill gas monitoring event. All Site wells were in fair condition. Caps on each well were replaced during the previous inspection and remain in good condition.

The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was dry and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition, but vegetation along the perimeter has reached approximately 7-8 feet in height in some places and will need to be mowed. The drainage swales and channels did not contain any water. The drainage swales and channels appear to be in good condition, but contain some vegetation which could potentially prohibit storm water flow if vegetation is allowed to continue to grow. The swales, channels and basin are stable with no noticeable areas of active erosion. TRC recommends trimming all vegetation on the landfill cap and within the swales and channels to maintain proper storm water flow and prevent the potential for blockages in culverts.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured and functioning. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents, and no gas odors or problems related to the gas venting system were observed during the site inspection. TRC conducted the gas monitoring event on all 12 gas vent stations (GVS) and combustible gas readings were within the acceptable range for each of the 12 GVSs. TRC was unable to access many of the perimeter monitoring points (PMP) due to overgrown vegetation around the perimeter of the landfill. TRC investigated the gas emissions at the 2 of the 13 PMPs and combustible gas readings were within the acceptable range.

PREPARED BY (OBSERVER): Nate Peterson	**REVIEWED BY:** Nate Kranes

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: September 25, 2019

Photo 1: Looking southeast. View of the northern gated enterence to the Site.

Photo 2: Looking north. View of vegitation in swale at the northern end of the site.

Photo 3: Looking southeast. View of the landfill cap and gas monitoring vent.

Photo 4: Looking east. View of drainage area on northern side of landfill.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Nate Peterson	1 of 1	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

TRC		**DATE: Thursday, December 12, 2019**
		REPORT NO. 20191212
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT Tuxedo Waste Disposal

LOCATION Tuxedo Park, New York

ATTACHMENTS Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Clear	12:00	28°F	None	0-5	NW
Clear	14:00	32°F	None	0-5	NW

SITE CONDITIONS: Clear, sunny

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Steve Johansson	TRC Engineers, Inc.	12:00	14:00
Caitlin Serowik	TRC Engineers, Inc.	12:00	14:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 2000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Steve Johansson

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Thursday, December 12, 2019**
		REPORT NO. 20191212
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a quarterly site inspection and landfill gas monitoring event on Thursday, December 12th, 2019, at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The objective of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

TRC conducted a site walk and inspection while conducting the landfill gas monitoring event. All site wells were in fair condition. Gas vent station 6 and perimeter monitoring points 1 and 11 require replacement bolts.

The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was wet and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition. The drainage swales and channels contained negligible amounts of water, accounted for by localized snow melt. The drainage swales and channels appear to be in good condition and do not contain any obstructions which could potentially prohibit stormwater. Vegetation in the drainage channels is currently short and would not impede the flow of water. The swales, channels and basin are stable with no noticeable areas of active erosion.

The landfill gas venting system was inspected for signs of damage during the site inspection. The passive landfill gas vents appeared in good condition, properly secured and functioning. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents, and no gas odors or problems related to the gas venting system were observed during the site inspection. TRC conducted the gas monitoring event on all 12 gas vent stations (GVS), and 12 of 13 perimeter monitoring points (PMP). PMP-1 was not located, and therefore, was not monitored.

PREPARED BY (OBSERVER): Caitlin Serowik	**REVIEWED BY:** Nate Kranes

NYSDEC Tuxedo Waste Disposal Site

Photograph Log

Date: December 12, 2019

Photo 1: Looking north. View towards the gated entrance of the Site.

Photo 2: Looking south. View of monitoring wells and vent stations.

Photo 3: Looking east. View of drainage area on northern side of landfill.

Photo 4: Looking west. View of landfill cap and western side of the landfill.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Steve Johansson	1 of 1	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

TRC		**DATE: Wednesday, March 11, 2020**
		REPORT NO. 20200311
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Mostly Cloudy	13:00	50°F	None	0-5	NE
Mostly Cloudy	15:00	55°F	None	0-5	NE

SITE CONDITIONS: Mostly cloudy

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Steve Johansson	TRC Engineers, Inc.	13:00	17:00
Cait Serowik	TRC Engineers, Inc.	13:00	17:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 5000		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Steve Johansson

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Wednesday, March 11, 2020**
		REPORT NO. 20200311
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a quarterly site inspection and landfill gas monitoring event on Wednesday, March 11, 2020 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The objective of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

TRC conducted a site walk and inspection while conducting the landfill gas monitoring event. All Site wells were in fair condition, with the exception of MW-7, which is obstructed as noted in previous inspection reports.

The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was wet and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition. The drainage swales and channels did not contain any water. The drainage swales and channels appear to be in good condition and do not contain any obstructions which could potentially prohibit stormwater flow. Vegetation in the drainage channels is currently short and would not impede the flow of water. The swales, channels and basin are stable with no noticeable areas of active erosion.

The landfill gas venting system was inspected for indications of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured and functioning. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents, and no gas odors or problems related to the gas venting system were observed during the site inspection. TRC conducted the gas monitoring event on all 12 gas vent stations (GVS) and combustible gas readings were within the acceptable range for each GVS. TRC also investigated the gas emissions at 12 of the 13 perimeter monitoring points (PMP) and all gas readings were within the acceptable range. As noted in previous inspections, PMP – 1 was unable to be located and was not monitored.

Landfill Gas Vent Stations (GVSs)					
Station No.	Combustible Gas				
ID	CH4 (%)	CO2	O2	CO	H2S (ppm)
GVS-1	0	2.4	16.5	Not Recorded	Not Recorded
GVS-2	3.7	7.8	10.4	Not Recorded	Not Recorded
GVS-3	6.7	7.3	11.8	Not Recorded	Not Recorded
GVS-4	6.9	14.4	3.2	Not Recorded	Not Recorded
GVS-5	0	7.4	9.7	Not Recorded	Not Recorded
GVS-6	0	0.1	19.2	Not Recorded	Not Recorded
GVS-7	8.3	15.4	1.6	Not Recorded	Not Recorded
GVS-8	3.9	13.8	2.6	Not Recorded	Not Recorded
GVS-9	0	0.1	19.2	Not Recorded	Not Recorded
GVS-10	0	0.1	19.3	Not Recorded	Not Recorded
GVS-11	0	0.1	19.2	Not Recorded	Not Recorded
GVS-12	0	0.1	19.2	Not Recorded	Not Recorded

Landfill Perimeter Monitoring Points (PMP)						
Station No.	Combustible Gas					
ID	LEL CH4 (%)	CO2	O2	CO	H2S (ppm)	VOCs
PMP-1	Not Found					
PMP-4	0	0.6	19.2	Not Recorded	Not Recorded	0
PMP-2	0	0.1	19.6	Not Recorded	Not Recorded	0.2
PMP-6	0.3	0.3	20	Not Recorded	Not Recorded	0.1
PMP-5	0	0.2	19.9	Not Recorded	Not Recorded	0.1
PMP-3	0	0.1	20.1	Not Recorded	Not Recorded	1
PMP-7	0	0.2	20.2	Not Recorded	Not Recorded	0
PMP-9	0	0.5	19.9	Not Recorded	Not Recorded	0
PMP-8	0	0.1	20.4	Not Recorded	Not Recorded	0
PMP-10	0	0.3	20.3	Not Recorded	Not Recorded	0
PMP-11	0	0.3	19.8	Not Recorded	Not Recorded	0
PMP-12	0	0.1	20.5	Not Recorded	Not Recorded	0.1
PMP-13	0	0.2	20.4	Not Recorded	Not Recorded	0.1

PREPARED BY (OBSERVER): Steve Johansson	**REVIEWED BY:** Nate Kranes

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: March 11, 2020

Photo 1: Looking north. View the northern end of the landfill cap.

Photo 2: Looking south. View of drainage swale south of the entry gate.

Photo 3: Looking southeast. View of the southeast slope of the landfill cap.

Photo 4: Looking south. View of south portion of landfill cap.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Steve Johansson	1 of 1	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

TRC		**DATE: Tuesday, June 23, 2020**
		REPORT NO. 20200623
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Mostly Cloudy	13:00	50°F	None	0-5	SE
Mostly Cloudy	16:00	55°F	None	0-5	SE

SITE CONDITIONS: Partly cloudy

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Steve Johansson	TRC Engineers, Inc.	13:00	16:00
Cait Serowik	TRC Engineers, Inc.	13:00	16:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 5000		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Steve Johansson

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Tuesday, June 23, 2020**
		REPORT NO. 20200623
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a quarterly site inspection and landfill gas monitoring event on Tuesday, June 23, 2020 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The objective of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

TRC conducted a site walk and inspection while conducting the landfill gas monitoring event. All Site wells were in fair condition, with the exception of MW-7, which is obstructed as noted in previous inspection reports.

The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was dry and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition. The drainage swales and channels did not contain any water. The drainage swales and channels appear to be in good condition, however the vegetation in the drainage channels is tall and dense and could impede the flow of water. The swales, channels and basin are stable with no noticeable areas of active erosion.

The landfill gas venting system was inspected for indications of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured and functioning. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents, and no gas odors or problems related to the gas venting system were observed during the site inspection. TRC conducted the gas monitoring event on all 12 gas vent stations (GVS) and combustible gas readings were within the acceptable range for each GVS. TRC also investigated the gas emissions at 11 of the 13 perimeter monitoring points (PMP) and all gas readings were within the acceptable range. PMP-5 was unable to be located, as vegetation in the vicinity was very dense. As noted in previous inspections, PMP – 1 was unable to be located and was not monitored.

PREPARED BY (OBSERVER): Caitlin Serowik	**REVIEWED BY:** Nate Kranes

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: June 23, 2020

Photo 1: Looking north. View the southern end of the landfill cap.

Photo 2: Looking south. View of drainage swale south of the entry gate.

Photo 3: Looking southeast at the entrance gate.

Photo 4: Looking south. View of south portion of landfill cap.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Cait Serowik	1 of 1	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

		DATE: Wednesday, July 22, 2020
		REPORT NO. 20200722
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Clear	0800	80°F	None	0-5	E
Clear	1300	90°F	None	0-5	E

SITE CONDITIONS: Clear

WORK GOAL FOR DAY: Site inspection and groundwater sampling

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Steve Johansson	TRC Engineers, Inc.	08:00	13:00
Caitlin Serowik	TRC Engineers, Inc.	08:00	13:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 2000 Plus		
Oil/Water Interface Probe	Heron		
YSI	Pro DSS		
Peristaltic Pump	Geotech		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Steven Johansson

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Wednesday, July 22, 2020**
		REPORT NO. 20200722
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a quarterly site inspection, landfill gas monitoring event, annual groundwater gauging, and groundwater sampling on Wednesday, July 22, 2020 at the Tuxedo Waste Disposal Site (Site) located on State Route 17, approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. A site inspection was performed that documented the conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

TRC conducted a site walk and initial inspection while conducting the groundwater gauging event. Site wells were in fair condition with the exception of monitoring wells MW-7, RI-5A and RI-3 that were obstructed and could not be gauged or sampled and monitoring well MW-1 that could not be located. MW-5 contained a wasp's nest in the well cover and was not able to be gauged or inspected.

The landfill inspection involved walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was dry and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition. The drainage swales and channels did not contain any water. The drainage swales and channels appear to be in good condition do not contain any obstructions which could potentially prohibit stormwater flow. Vegetation in the drainage channels is currently high and could impede the flow of water during a rainfall event. The swales, channels and basin are stable with no noticeable areas of active erosion.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured and functioning. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents, and no gas odors or problems related to the gas venting system were observed during the site inspection. TRC conducted the gas monitoring event on all twelve gas vent stations (GVS), and twelve of thirteen of the perimeter monitoring points (PMP). TRC investigated the gas emissions at the 12, as well as, 12 of the 13 perimeter monitoring points (PMP). PMP-1 was not located, and therefore, was not monitored.

TRC collected groundwater samples from the 7 accessible Site monitoring wells. The groundwater samples were submitted to TestAmerica Laboratories, Inc. for analysis using EPA method 6010 for TAL Metals and EPA method 7470 for Mercury. Overall the third quarter inspection showed the Site to be in good condition. The landfill cap and drainage system appear to be functioning as intended. Tall vegetation located in the drainage swales should be addressed to prevent an obstruction of storm water flow.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Caitlin Serowik	**PRINT NAME:** Nathan Kranes

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: July 22, 2020

Photo 1: Looking northeast. View the northern end of the landfill cap.

Photo 2: Looking northeast. View of drainage swale north of the entry gate.

Photo 3: View looking north. Looking at the drainage swale at the north most portion of the Site.

Photo 4: Looking southeast at the entrance gate.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Cait Serowik	1 of 2	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: July 22, 2020

Photo 5: Looking south. View the monitoring well RI-2.

Photo 6: Looking west. View of monitoring well MW-5.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Cait Serowik	2 of 2	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

TRC		**DATE: Wednesday, December 9, 2020**
		REPORT NO. 20201209
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Cloudy	0845	32°F	None	7	WSW
Cloudy	1245	34°F	None	10	WSW

SITE CONDITIONS: Cloudy

WORK GOAL FOR DAY: Site inspection and groundwater sampling

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Steve Johansson	TRC Engineers, Inc.	11:00	14:00
Caitlin Serowik	TRC Engineers, Inc.	11:00	14:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 2000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Steven Johansson

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Wednesday, December 9, 2020**
		REPORT NO. 20201209
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a quarterly site inspection and landfill gas monitoring event on Wednesday, December 9, 2020 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The purpose of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

TRC conducted a site walk, inspection, as well as a landfill gas monitoring event. The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was dry and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition. The drainage swales and channels did not contain any water and appear to be in good condition, with the vegetation in the drainage channels is currently short and should not impede the flow of water. The swales, channels and basin are stable with no noticeable areas of active erosion.

The landfill gas venting system was inspected for indications of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured, and functioning, with the exception of GVS-4, GVS-6, and GVS-11. These three vents appeared to have been severely damaged during the last mowing event conducted on Site. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents. TRC conducted the gas monitoring event on the nine gas vent stations that were not damaged, and the combustible gas readings were within the acceptable range for each GVS. TRC also investigated the gas emissions at 11 of the 13 perimeter monitoring points (PMP) and all gas readings were within the acceptable range. PMP-3 was unable to be monitored as it too was damaged during the last mowing event. As noted in previous inspections, PMP – 1 was unable to be located and was not monitored.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Caitlin Serowik	**PRINT NAME:** Nathan Kranes

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: December 9, 2020

Photo 1: Looking northeast. View the northern end of the landfill cap.

Photo 2: Looking north. View of drainage swale north of the entry gate.

Photo 3: View looking east. Looking at damaged gas vent GVS-4

Photo 4: Looking downward at damaged gas vent GSV-6

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Cait Serowik	1 of 2	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: December 9, 2020

Photo 5: Looking northeast. Overview of landfill cap.

Photo 6: Looking southeast at the locked entrance gate.

TRC		**DATE: Monday, March 22, 2021**
		REPORT NO. 20210323
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Cloudy	10:00	42°F	None	var.	SE
Cloudy	14:00	51°F	None	var.	SE

SITE CONDITIONS: Cloudy

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring event

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Steve Johansson	TRC Engineers, Inc.	12:00	15:00
Caitlin Serowik	TRC Engineers, Inc.	12:00	15:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 2000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Steven Johansson

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Monday, March 22, 2021**
		REPORT NO. 20210323
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) performed a quarterly site inspection and landfill gas monitoring event on Wednesday, December 9, 2020 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The purpose of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

The team conducted a site walk, inspection, as well as a landfill gas monitoring event. The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was dry and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition. The drainage swales and channels did not contain any water and appear to be in good condition. The swales, channels and basin are stable with no noticeable areas of active erosion. It was noted by the team that the dead vegetation in the drainage channels is currently tall and dense may impede the flow of water if not addressed.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured, and functioning, with the exception of GVS-4, GVS-6, and GVS-11. These vents, as noted in the previous inspection report, are severely damaged during from last mowing event conducted on Site and are not functioning as intended. An injection well near GVS-5 was also noted to be cracked and damaged, likely from the same moving event The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents. TRC conducted the gas monitoring event on the nine gas vent stations that were not damaged, and the combustible gas readings were within the acceptable range for each GVS. TRC also investigated the gas emissions at 12 of the 13 perimeter monitoring points (PMP) and all gas readings were within the acceptable range. PMP-3 was unable to be monitored, as it was not able to be located and may have been destroyed by a car. The team plans to return to the site during the second quarter to repair the damaged gas vents.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Caitlin Serowik	**PRINT NAME:** Nate Kranes

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: March 22, 2021

Photo 1: Looking east at GVS-1.

Photo 2: Looking southeast. View of damaged GVS-4.

Photo 3: View looking southeast at damaged GVS-6 that has completely detached from the base.

Photo 4: View looking downward at damaged GVS-6 at a close up of the broken PVC base.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Cait Serowik	1 of 2	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: March 22, 2021

Photo 5: Looking north at an overview of the landfill cap.

Photo 6: View of the dense debris and dead vegetation located in the drainage swales.

Photo 7: Looking north at an overview of the northern portion of the site.

Photo 8: View of the locked entrance gate upon demobilizing from the site.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Cait Serowik	2 of 2	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

TRC		**DATE: Wednesday, June 2, 2021**
		REPORT NO. 20210602
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Overcast	10:00	60°F	None	var.	SE
Showers	14:00	72°F	Yes	var.	SE

SITE CONDITIONS: Overcast, showers

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring event

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Steve Johansson	TRC Engineers, Inc.	12:00	16:00
Caitlin Serowik	TRC Engineers, Inc.	12:00	16:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 2000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Stephen Johansson

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Wednesday, June 2, 2021**
		REPORT NO. 20210602
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a quarterly site inspection and landfill gas monitoring event on Wednesday, June 2, 2021 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The purpose of the site inspection was to document conditions of the landfill gas vents, access roads, guard rails, landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, and fence lines. The team returned to the site on Thursday, June 3, 2021 to repair the three previously damaged gas vents and restore their functionality as part of the remedy.

The team performed a site walk, inspection, and a landfill gas monitoring event. The landfill cap inspection involved walking the perimeter of the landfill and the top of the landfill. The landfill cap appeared intact and in good condition. It was dry and the soil stable, with no visible erosion, cracks, settlement, or seeps. No animal burrows were noted throughout the cap. The drainage swales and channels did not contain water and are in good condition. The swales and channels are stable with no visible areas of active erosion. As noted in the last quarter inspection by the team, the dead vegetation in the drainage channels, as well as this season's new vegetation, is currently tall and dense. This may impede the flow of water if not addressed, especially in the event of a high intensity storm.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was restricted to visible portions of the system and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition. They were properly secured and functioning correctly, with the exception of GVS-4, GVS-6, and GVS-11. These vents were severely damaged from the last mowing event conducted on Site and were not functioning as intended. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition, without any evidence of settlement along lines or vent pipes. No animal borrows or voids were observed around the gas vents. TRC conducted the gas monitoring event following on the nine gas vent stations that were not damaged. The combustible gas readings were within the acceptable range for each GVS. TRC also investigated the gas emissions at 12 of the 13 perimeter monitoring points (PMP) and all gas readings were within the acceptable range. PMP-3 was unable to be monitored as it was not able to be located. It may have been destroyed by a car.

The following day, the team returned to the site to repair the three damaged landfill gas vents, GVS-4, GVS-6, and GVS-11. The team was able to replace the severely damaged PVC pipes above and below the ground surface, and return the vents to their prior, functioning state.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Caitlin Serowik	**PRINT NAME:** Harry Fuller

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: June 3 & 4, 2021

Photo 1: View looking north at an overview of the northern portion of the landfill cap.

Photo 2: Looking south. View of the high vegetation (both alive and dead) located in all of the drainage swales.

Photo 3: View looking east. Overview of the area of monitoring well RI-4.

Photo 4: View looking east at the repaired gas vent, GVS-4.

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: June 3 & 4, 2021

Photo 5: Looking east at the repaired gas vent, GVS-11.

Photo 6: View looking north at an overview of the landfill cap.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Cait Serowik	2 of 2	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

TRC		**DATE: Monday, July 26, 2021**
		REPORT NO. 20210726
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Sunny	12:00	84°F	None	12MPH	WNW
Sunny	14:30	86°F	None	7MPH	W

SITE CONDITIONS: Clear

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring event

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Harry Fuller	TRC Engineers, Inc.	12:00	15:00
Caitlin Serowik	TRC Engineers, Inc.	12:00	15:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000	Not Applicable	Not Applicable
Landfill Gas Meter	GEM 2000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER:

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Monday, July 26, 2021**
		REPORT NO. 20210726
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) performed a quarterly site inspection and landfill gas monitoring event on Wednesday, December 9, 2020 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The purpose of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines.

The team conducted a site walk, inspection, as well as a landfill gas monitoring event. The inspection was limited to the visible extent of the landfill, as vegetation is high and dense and hindered the teams' observation. The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was dry and the soil stable, with no visible erosion, cracks, settlement or seeps. The landfill cap appeared intact and in good condition. The swales, channels and basin are stable with no noticeable areas of active erosion. Vegetation is high throughout the site, including the drainage swales and basins, and may impede the flow of water in the event of a high rain volume or a severe storm event.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured, and functioning. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents. TRC conducted the gas monitoring each gas vent station, and the combustible gas readings were within the acceptable range for each GVS. TRC also investigated the gas emissions at 12 of the 13 perimeter monitoring points (PMP) and all gas readings were within the acceptable range. As noted on previous inspections, PMP-3 was unable to be monitored, as it was not able to be located and may have been destroyed by a car.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Harry Fuller	**PRINT NAME:** Caitlin Serowik

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: July 26, 2021

Photo 1: Looking east at GVS-5.

Photo 2: Looking South along the perimeter of the site.

Photo 3: View of the locked entrance gate upon leaving the site.

Photo 4: View looking West showing an overview of the site conditions.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Cait Serowik	1 of 1	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

TRC		**DATE: Wednesday, January 5, 2022**
		REPORT NO. 20220105
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0000.0000
		LOGBOOK NO. -- PAGES -- to --

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log, Gas Monitoring Form

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Sunny	09:50	34°F	Rain	8MPH	NE
Sunny	13:50	34°F	None	8MPH	NE

SITE CONDITIONS: 34 F, Rain, Wind 8 mph NE

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring event

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Taylor Shanley	TRC Engineers, Inc.	09:50	13:50

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000		
Landfill Gas Meter	GEM 2000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER:

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Wednesday, January 5, 2022**
		REPORT NO. 20220105
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) performed a quarterly site inspection and landfill gas monitoring event on Wednesday, January 5, 2022 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The purpose of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines as outlined in the Site Management Plan.

TRC conducted a site walk, inspection, as well as a landfill gas monitoring event. The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was dry and the soil stable, with no visible erosion, cracks, settlement, or seeps. The landfill cap appeared intact and in good condition. The swales, channels and basin are stable with no noticeable areas of active erosion. Vegetation is low throughout the site, with most vegetation being dead due to the seasonal conditions. The drainage swales and basins contain some denser areas of dead vegetation, which may impede the flow of water in the event of a high rain volume or a severe storm event.. A hole was noted in the northern end of the fence. TRC recommends that regular maintenance be performed to remove the dead vegetation and that the fence be repaired.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured, and functioning. All wind turbine ventilators appeared to be functioning except for the ventilator on GVS-6. The wind turbine ventilator on GVS-6 was unable to rotate freely due to damage and is recommended that it be replaced. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents.

TRC conducted the gas monitoring at each gas vent station, and the combustible gas readings were within the acceptable range for each GVS. TRC also investigated the gas emissions at 12 of the 13 perimeter monitoring points (PMP) and all gas readings were within the acceptable range. PMP-8 was noted to be lopsided and unstable and is recommended that it be replaced. PMP-1 was unable to be located and may have been destroyed by a car or destroyed during mowing. TRC recommends that the condition of this monitoring point be investigated more thoroughly during the next site inspection.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Taylor Shanley	**PRINT NAME:** Matthew Hoskins, P.G.

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: January 5, 2022

Photo 1: Looking northeast at drainage swale in northern portion of the Site.

Photo 2: Overview of Site looking north, taken from the access road.

Photo 3: View of hole in the northern end of fence

Photo 4: View of damaged wind turbine ventilator on GVS-6, looking east.

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: January 5, 2022

Photo 5: View of lopsided PMP-8, looking east.

Photo 6: View of eastern side of landfill, looking south.

Photo 7: Overview of Site taken from northern portion, looking south.

Photo 8: View of GVS-4 looking east.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Taylor Shanley	2 of 2	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

AECOM Technical Services Northeast, Inc.
40 British American Blvd, Latham, NY 12110
T 518.951.2200 F 518.951.2300
www.aecom.com

Combustible Gas Monitoring Sampling Form

Date: 01/05/2022

Project Name and Number: Tuxedo Waste Disposal #320919.05

Inspector's Name: Taylor Shanley

Job Title of Inspector: Staff Engineer

Description of Work Performed: Site Inspection and Landfill Gas Monitoring

Purge Duration: 3min.

Station No.	Combustible Gas	
Gas Vent Station	CH_4 %	H_2S (ppm)
1	0.1	0
2	3.9	0
3	1.3	0
4	10.9	0
5	0.1	0
6	6.8	0
7	11.8	0
8	4.0	2
9	1.5	0
10	3.6	3
11	1.7	0
12	0.1	0

Station No.	Combustible Gas		
Perimeter Monitoring Point	LEL %	H_2S (ppm)	
1	~~1~~	~~0~~	unable to locate
2	1	0	
3	2	0	
4	1	0	
5	1	0	
6	1	0	
7	1	0	
8	1	0	
9	1	0	
10	1	0	
11	1	0	
12	1	0	
13	1	0	

Combustible Gas Measurements Using: GEM™ 2000 Landfill Gas Monitor

Comments: Unable to locate PMP-1

AECOM

TRC		**DATE: Monday, February 14, 2022**
		REPORT NO. 20220214
		PAGE NO. 1 OF 2
		PROJECT NO. 320919.0005.0000
		LOGBOOK NO. 550F PAGES 69-70

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log, Gas Monitoring Form

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Sunny	11:30	22°F	None	13 MPH	SE
Sunny	14:30	22°F	None	11 MPH	SE

SITE CONDITIONS: 22 F, Clear, Wind 13 mph SE

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring event

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Taylor Shanley	TRC Engineers, Inc.	11:30	14:30

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000		
Landfill Gas Meter	GEM 5000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Taylor Shanley

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Monday, February 14, 2022**
		REPORT NO. 20220214
		PAGE NO. 2 OF 2
		PROJECT NO. 320919.0000.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) performed a quarterly site inspection and landfill gas monitoring event on Monday, February 14, 2022 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The purpose of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines as outlined in the Site Management Plan.

TRC conducted a site walk, inspection, as well as a landfill gas monitoring event. The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was covered with snow inhibiting the ability to observe soil stability including signs of erosion, cracks, settlement, or seeps. The landfill cap appeared intact and in good condition. The swales, channels and basin are stable with no noticeable areas of active erosion. Vegetation is low throughout the site, with most vegetation being dead due to the seasonal conditions. The drainage swales and basins contain some denser areas of dead vegetation, which may impede the flow of water in the event of a high rain volume or a severe storm event.. A hole was noted in the northern end of the fence. TRC recommends that regular maintenance be performed to remove the dead vegetation and that the fence be repaired.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured, and functioning. All wind turbine ventilators appeared to be functioning except for the ventilator on GVS-6, as was noted during the previous inspection. The wind turbine ventilator on GVS-6 was unable to rotate freely due to damage and is recommended that it be replaced. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents.

TRC conducted the gas monitoring at each gas vent station (GVS), and the combustible gas readings were within the acceptable range for each GVS. TRC also investigated the gas emissions at 11 of the 13 perimeter monitoring points (PMP) and all gas readings were within the acceptable range. PMP-8 was noted to be lopsided and unstable and is recommended that it be replaced. PMP-1 and PMP-3 were unable to be located and may have been destroyed by a snow plowing or destroyed during mowing. Remnants of PMP-1 and PMP-3 were not visible due to snow cover. TRC recommends that the condition of these monitoring points be investigated more thoroughly during the next site inspection.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Taylor Shanley	**PRINT NAME:** Matthew Hoskins, P.G.

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: February 14, 2022

Photo 1: View of entrance gate to the Site, looking south.

Photo 2: Overview of Site looking south, taken from the access road.

Photo 3: View of drainage swale in the northern portion of Site, looking north.

Photo 4: View of damaged wind turbine ventilator on GVS-6, looking east.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Taylor Shanley	1 of 2	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

NYSDEC Tuxedo Waste Disposal Site
Photograph Log
Date: February 14, 2022

Photo 5: View of general area of PMP-3, looking west.

Photo 6: View of general area of PMP-1, looking north.

Photo 7: View of damaged portion of fence in northern portion of Site, looking north.

Photo 8: View of lopsided PMP-8, looking east.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
320919.0000 .0000	Taylor Shanley	2 of 2	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

AECOM Technical Services Northeast, Inc.
40 British American Blvd, Latham, NY 12110
T 518.951.2200 F 518.951.2300
www.aecom.com

Combustible Gas Monitoring Sampling Form

Date: 2-14-22

Project Name and Number: Tuxedo Landfill

Inspector's Name: Taylor Shanley

Job Title of Inspector: Staff Engineer

Description of Work Performed: Site Inspection & Gas Monitoring

Purge Duration: 3 min.

Station No.	Combustible Gas		
Gas Vent Station	CH_4 %	H_2S (ppm)	PID (ppm)
1	0.1	0	0.0
2	1.9	0	0.0
3	0.1	0	0.0
4	7.2	1	1.9
5	0.1	0	0.0
6	1.4	0	0.5
7	11.2	0	0.1
8	1.3	0	0.0
9	8.1	0	1.1
10	3.6	0	0.4
11	1.2	0	0.0
12	2.0	0	0.2

Station No.	Combustible Gas		
Perimeter Monitoring Point	LEL %	H_2S (ppm)	PID (ppm)
1			
2	0	0	0.0
3			
4	1	0	0.0
5	0	0	0.0
6	1	0	0.0
7	0	0	0.0
8	0	0	0.0
9	0	0	0.0
10	0	0	0.0
11	0	0	0.0
12	0	0	0.0
13	0	0	0.0

Combustible Gas Measurements Using: ~~GEM™ 2000~~ 5000 Landfill Gas Monitor

Comments:

Recommend replacing turbine vent on GVS-6

Could not locate PMP-3 and PMP-1

Recommend repairing fence

AECOM

TRC		**DATE: Tuesday, May 17, 2022**
		REPORT NO. 20220517
		PAGE NO. 1 OF 2
		PROJECT NO. 470744.0005.0000
		LOGBOOK NO. 550F PAGES 9-10

DAILY FIELD ACTIVITY REPORT

PROJECT	Tuxedo Waste Disposal
LOCATION	Tuxedo Park, New York
ATTACHMENTS	Photo Log, Gas Monitoring Form

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Sunny	13:15	68°F	None	13 MPH	SE
Sunny	15:00	68°F	None	13 MPH	SE

SITE CONDITIONS: 68 F, Clear, Wind 13 mph SE

WORK GOAL FOR DAY: Site inspection and landfill gas monitoring event

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Taylor Shanley	TRC Engineers, Inc.	13:15	15:00
Rich DePolo	TRC Engineers, Inc.	13:15	15:00
Matthew Hoskins	TRC Engineers, Inc.	13:15	15:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000		
Landfill Gas Meter	GEM 5000 Plus		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Taylor Shanley

H & S NOTES: Site work performed in Level D PPE

TRC		**DATE: Tuesday, May 17, 2022**
		REPORT NO. 20220517
		PAGE NO. 2 OF 2
		PROJECT NO. 470744.0005.0000

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) performed a quarterly site inspection and landfill gas monitoring event on Tuesday, May 17, 2022 at the Tuxedo Waste Disposal Site (Site) located on State Route 17 approximately one mile north of the Village of Tuxedo Park in the Town of Tuxedo, NY. The purpose of the site inspection was to document conditions of the landfill cap, detention basin, perimeter drainage channel, drainage swales, groundwater monitoring wells, landfill gas vents, access roads, guard rails, and fence lines as outlined in the Site Management Plan.

TRC conducted a site walk, inspection, and a landfill gas monitoring event. The landfill inspection included walking the perimeter of the landfill, areas of the landfill slope and the top of the landfill. The landfill cap was dry and stable with no signs of erosion, cracks, settlement, or seeps. The landfill cap appeared intact and in good condition. The swales, channels and basin are stable with no noticeable areas of active erosion. Vegetation is high on the landfill cap and surrounding the landfill and looks healthy. The drainage swales and basins contain some denser areas of dead vegetation, which may impede the flow of water in the event of a high rain volume or a severe storm event.. A hole was noted in the northern end of the fence. Damage was also observed in the southern portion of the fence. Fence repairs are scheduled to be made this summer.

The landfill gas venting system was inspected for signs of damage during the site inspection. The inspection was limited to visible portions of the system, and the ground surface over the gas collection lines. The passive landfill gas vents appeared in good condition, properly secured, and functioning. All wind turbine ventilators appeared to be functioning except for the ventilators on GVS-4 and GVS-6. The wind turbine ventilators on GVS-4 and GVS-6 were unable to rotate freely due to damage. Repairs for the wind turbine ventilators have been scheduled for this summer. The ground surface above the gas collection system lines and around the gas collection vents appeared to be in good condition without any evidence of settlement along lines or vent pipes. No animal borrows, or voids, were observed around the gas vents.

TRC conducted the gas monitoring at each gas vent station (GVS), and the combustible gas readings were within the acceptable range for each GVS. TRC also investigated the gas emissions at 12 of the 13 perimeter monitoring points (PMP) and all gas readings were within the acceptable range. PMP-3 was noted as damaged during mowing activities with approximately 6” of PVC stick-up left. It is recommended that PMP-3 be repaired with a 1” coupling and 3’ section of PVC. The repair will be made at the time of fence and wind turbine ventilator repairs. PMP-8 was noted to be leaning and unstable but appears to be functioning properly. PMP-1 was unable to be located and may have been destroyed during snow plowing or mowing. Remnants of PMP-1 were not observed.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Taylor Shanley	**PRINT NAME:** Matthew Hoskins, P.G.

NYSDEC Tuxedo Waste Disposal Site – Site No. 336035

Photograph Log

Date: May 17, 2022

Photo 1: View of entrance gate to the Site, looking south.

Photo 2: View of fence damage to be repaired at northern end of fence, looking north.

Photo 3: View of fence damage to be repaired at southern end of fence, looking south.

Photo 4: Overview of Site from entrance gate, looking south.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
470744.0005 .0000	Taylor Shanley	1 of 3	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

NYSDEC Tuxedo Waste Disposal Site – Site No. 336035

Photograph Log

Date: May 17, 2022

Photo 5: View of drainage swale in northern portion of Site, looking north.

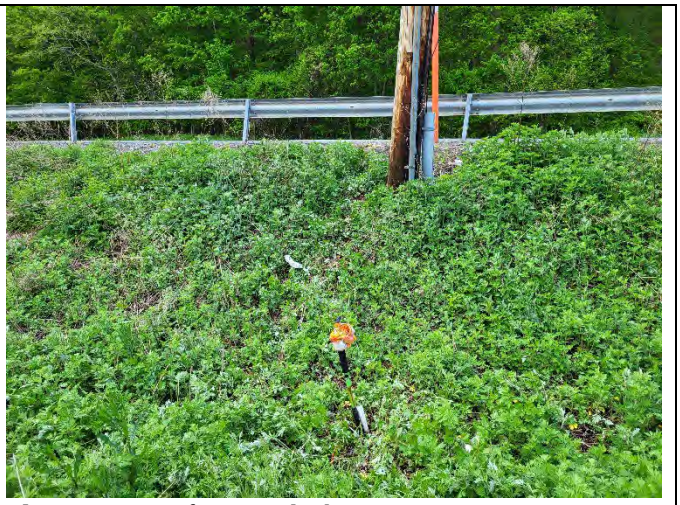

Photo 6: View of PMP-3, looking west.

Photo 7: View of PMP-8, looking east.

Photo 8: View of PMP-9, looking southeast.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
470744.0005 .0000	Taylor Shanley	2 of 3	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

NYSDEC Tuxedo Waste Disposal Site – Site No. 336035

Photograph Log

Date: May 17, 2022

Photo 9: View of GVS-6 with damaged wind turbine ventilator, looking west.

Photo 10: View of drainage swale on east side of landfill cap, looking west.

Photo 11: View of landfill cap taken from central portion, looking southwest.

Photo 12: View of general area of PMP-1, looking north.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
470744.0005 .0000	Taylor Shanley	3 of 3	NYSDEC	Tuxedo Waste Disposal Site Tuxedo Park, NY	TRC

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40 British American Blvd, Latham, NY 12110
T 518.951.2200 F 518.951.2300
www.aecom.com

Combustible Gas Monitoring Sampling Form

Date: 5/17/22

Project Name and Number: Tuxedo

Inspector's Name: T. Shanley, R. DePolo

Job Title of Inspector:

Description of Work Performed: Inspection & Gas Monitoring

Purge Duration: 60 sec

Station No.	Combustible Gas		PID (ppm)
Gas Vent Station	CH_4 %	H_2S (ppm)	
1	2.8	0	0.0
2	0.0	0	0.0
3	0.0	0	0.0
4	0.0	0	0.0
5	0.0	0	0.4
6	0.0	0	0.0
7	0.0	0	0.0
8	0.0	0	0.0
9	0.0	0	0.0
10	0.0	0	0.0
11	0.0	0	0.0
12	0.0	0 (TS) 1	0.4

Station No.	Combustible Gas		PID (ppm)
Perimeter Monitoring Point	LEL %	H_2S (ppm)	
1	Destroyed - no remnants		
2	0.0	0	0.0
3	0.0 (destroyed)	0	0.0
4	0.0	0	0.0
5	0.0	0	0.0
6	0.0	0	0.0
7	0.0	0	0.0
8	0.0	0	0.0
9	0.0	0	0.0
10	0.0	0	0.0
11	0.0	0	0.0
12	0.0	0	0.0
13	0.0	0	0.0

Combustible Gas Measurements Using: GEM™ ~~2000~~ 5000 Landfill Gas Monitor

Comments: 8" PVC gas vents

GVS 4 - new turbine vent

GVS 6 - new turbine vent

PMP 3 - Broken PVC, only about 1/2' stickup
get 2" CL and 3' PVC to repair

AECOM

Appendix C

Groundwater Sampling Logs – July 2020

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	NYSDEC WA45 - Site Management Portfolio	**LOCATION ID**	RI-4
PROJECT NUMBER	320919.0000.0000	**DATE**	7/23/2020
SAMPLE ID	TWD-RI-4	**START TIME**	8:05
SAMPLE TIME	8:45	**END TIME**	8:45
		SITE NAME/NUMBER	Tuxedo Waste Disposal (Site No. 336035)
		PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	15.26 FT	**FINAL DTW (BMP)**	16.34 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	16.91 FT	**SCREEN LENGTH**	10 FT	**PID AMBIENT AIR**	PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	1.65 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.40 GAL	**PID WELL MOUTH**	0 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.61 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.93 GAL	**DRAWDOWN/ TOTAL PURGED**	1.08	**PRESSURE TO PUMP**	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
805	**BEGIN PURGING**									
815	15.61	250	16.40	0.363	5.33	0.43	0.0	221.8	17.91	
825	16.02	250	15.93	0.370	5.35	0.24	0.0	219.7	17.91	
830	16.20	250	15.89	0.369	5.38	0.18	0.0	217.1	17.91	
835	16.34	250	15.85	0.371	5.40	0.15	0.0	215.0	17.91	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

15.9	**0.371**	**5.4**	**0.2**	**0**	**215**	

TEMP.: nearest degree (ex. 10.1 = 10)

COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)

pH: nearest tenth (ex. 5.53 = 5.5)

DO: nearest tenth (ex. 3.51 = 3.5)

TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)

ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] _____
- [ ] WATTERA
- [ ] OTHER
- [ ] OTHER

DECON FLUIDS USED
- [X] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[ ]	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO	
PURGE WATER CONTAINERIZED	[ ]	[X]	NUMBER OF GALLONS GENERATED: 2.93
NO-PURGE METHOD UTILIZED	[ ]	[X]	If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

Sampler Signature: Caitlin Serowik Print Name: Caitlin Serowik

Checked By: Date: 7/23/2020

SKETCH/NOTES

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	NYSDEC WA45 - Site Management Portfolio
PROJECT NUMBER	320919.0000.0000
SAMPLE ID	TWD-MW-2
SAMPLE TIME	14:20

LOCATION ID	MW-2
DATE	7/22/2020
START TIME	14:20
END TIME	15:05
SITE NAME/NUMBER	Tuxedo Waste Disposal (Site No. 336035)
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [ ] 2 [X] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	24.98 FT	**FINAL DTW (BMP)**	25.95 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	90.60 FT	**SCREEN LENGTH**	65 FT	**PID AMBIENT AIR**	PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	65.62 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.36 GAL	**PID WELL MOUTH**	0 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	24.21 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.93 GAL	**DRAWDOWN/ TOTAL PURGED**	0.97	**PRESSURE TO PUMP**	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1420	**BEGIN PURGING**									
1430	25.85	250	26.79	0.131	7.26	0.33	1.6	-60.0	25.98	
1440	25.95	250	26.58	0.118	7.16	0.59	0.0	-23.2	25.98	
1445	25.95	250	26.49	0.113	7.14	0.99	0.0	28.0	25.98	
1450	25.95	250	26.56	0.110	7.13	1.06	0.0	31.4	25.98	
1455	25.95	250	26.87	0.109	7.13	1.09	0	29.0	25.98	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	26.9	**0.109**	**7.1**	**1.1**	**0**	**29**

TEMP.: nearest degree (ex. 10.1 = 10)

COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)

pH: nearest tenth (ex. 5.53 = 5.5)

DO: nearest tenth (ex. 3.51 = 3.5)

TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)

ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] _____
- [ ] WATTERA
- [ ] OTHER _____
- [ ] OTHER _____

DECON FLUIDS USED
- [X] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [ ] WL METER _____
- [ ] PID _____
- [ ] WQ METER _____
- [ ] TURB. METER _____
- [ ] PUMP _____
- [ ] OTHER _____
- [ ] FILTERS NO. ___ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[ ]	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	[ ]	[X]
NO-PURGE METHOD UTILIZED	[ ]	[X]

NUMBER OF GALLONS GENERATED: 2.93

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

Sampler Signature: Caitlin Serowik Print Name: Caitlin Serowik

Checked By: Date: 7/22/2020

SKETCH/NOTES

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	NYSDEC WA45 - Site Management Portfolio
PROJECT NUMBER	320919.0000.0000
SAMPLE ID	TWD-MW-3
SAMPLE TIME	15:40

LOCATION ID	MW-3
DATE	7/23/2020
START TIME	14:20
END TIME	15:05
SITE NAME/NUMBER	Tuxedo Waste Disposal (Site No. 336035)
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [X] OTHER 3 inch.

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	17.5 FT	**FINAL DTW (BMP)**	17.65 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	30.40 FT	**SCREEN LENGTH**	17 FT	**PID AMBIENT AIR**	PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	12.90 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.06 GAL	**PID WELL MOUTH**	0 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	4.76 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.93 GAL	**DRAWDOWN/ TOTAL PURGED**	0.15	**PRESSURE TO PUMP**	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1540	**BEGIN PURGING**									
1550	17.65	250	21.21	0.296	7.44	1.58	0.0	149.0	31.4	
1600	17.65	250	20.19	0.312	7.26	1.23	0.0	156.0	31.4	
1605	17.65	250	19.98	0.314	7.27	1.24	0.0	159.0	31.4	
1610	17.65	250	19.85	0.314	7.34	1.23	0.0	161.0	31.4	
1615	17.65	250	19.62	0.315	7.3	1.21	0	163.0	31.4	
1620	17.65	250	19.45	0.317	7.29	1.22	0	166	31.4	
1625	17.65	250	19.31	0.318	7.28	1.22	0	168	31.4	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

19.3	**0.318**	**7.3**	**1.2**	**0**	**168**	

TEMP.: nearest degree (ex. 10.1 = 10)

COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)

pH: nearest tenth (ex. 5.53 = 5.5)

DO: nearest tenth (ex. 3.51 = 3.5)

TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)

ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] WATTERA
- [ ] OTHER
- [ ] OTHER

DECON FLUIDS USED
- [X] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[ ]	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO	
PURGE WATER CONTAINERIZED	[ ]	[X]	NUMBER OF GALLONS GENERATED: 2.93
NO-PURGE METHOD UTILIZED	[ ]	[X]	If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

Sampler Signature: Caitlin Serowik Print Name: Caitlin Serowik

Checked By: Date: 7/23/2020

SKETCH/NOTES

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	NYSDEC WA45 - Site Management Portfolio
PROJECT NUMBER	320919.0000.0000
SAMPLE ID	TWD-MW-4
SAMPLE TIME	15:40

LOCATION ID	MW-4
DATE	7/23/2020
START TIME	14:40
END TIME	15:20
SITE NAME/NUMBER	Tuxedo Waste Disposal (Site No. 336035)
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	17.18 FT	**FINAL DTW (BMP)**	17.2 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	26.42 FT	**SCREEN LENGTH**	10 FT	**PID AMBIENT AIR**	PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	9.24 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.01 GAL	**PID WELL MOUTH**	0 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	3.41 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.93 GAL	**DRAWDOWN/ TOTAL PURGED**	0.02	**PRESSURE TO PUMP**	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1440	**BEGIN PURGING**									
1450	17.20	250	17.70	0.337	5.33	0.18	0.0	75.5	27.42	
1500	17.20	250	17.36	0.340	5.34	0.15	0.0	92.1	27.42	
1505	17.20	250	17.13	0.340	5.34	0.11	0.0	103.2	27.42	
1510	17.20	250	17.12	0.340	5.35	0.09	0.0	115.1	27.42	
1515	17.2	250	17.40	0.340	5.33	0.08	0.0	119.0	27.42	
1520	17.2	250	17.14	0.340	5.33	0.07	0.0	124.8	27.42	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

17.1	**0.34**	**5.3**	**0.1**	**0**	**125**	

TEMP.: nearest degree (ex. 10.1 = 10)

COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)

pH: nearest tenth (ex. 5.53 = 5.5)

DO: nearest tenth (ex. 3.51 = 3.5)

TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)

ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] _____
- [ ] WATTERA
- [ ] OTHER
- [ ] OTHER

DECON FLUIDS USED
- [X] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[ ]	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	[ ]	[X]
NO-PURGE METHOD UTILIZED	[ ]	[X]

NUMBER OF GALLONS GENERATED: 2.93

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Caitlin Serowik Print Name: Caitlin Serowik

Checked By: Date: 7/23/2020

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	NYSDEC WA45 - Site Management Portfolio
PROJECT NUMBER	320919.0000.0000
SAMPLE ID	TWD-MW-5
SAMPLE TIME	

LOCATION ID	MW-5
DATE	7/23/2020
START TIME	
END TIME	
SITE NAME/NUMBER	Tuxedo Waste Disposal (Site No. 336035)
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	FT	**FINAL DTW (BMP)**	FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	FT	**SCREEN LENGTH**	FT	**PID AMBIENT AIR**	PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	GAL	**PID WELL MOUTH**	0 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	GAL	**DRAWDOWN/ TOTAL PURGED**	0.00	**PRESSURE TO PUMP**	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
	WeLL WAS COVERED IN A WASPS NEST AND WAS NOT SAMPLED.									

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	19.3	**0.318**	**7.3**	**1.2**	**0**	**168**

TEMP.: nearest degree (ex. 10.1 = 10)

COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)

pH: nearest tenth (ex. 5.53 = 5.5)

DO: nearest tenth (ex. 3.51 = 3.5)

TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)

ORP: 2 SF (44.1 = 44, 191 = 190)

EOUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] _____
- [ ] WATTERA
- [ ] OTHER
- [ ] OTHER

DECON FLUIDS USED
- [ ] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [ ] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [ ] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER
- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[ ]	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO	
PURGE WATER CONTAINERIZED	[ ]	[X]	NUMBER OF GALLONS GENERATED: 0.00
NO-PURGE METHOD UTILIZED	[ ]	[X]	If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

Sampler Signature: Caitlin Serowik Print Name: Caitlin Serowik

Checked By: Date: 7/23/2020

SKETCH/NOTES

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	NYSDEC WA45 - Site Management Portfolio
PROJECT NUMBER	320919.0000.0000
SAMPLE ID	TWD-MW-6
SAMPLE TIME	9:35

LOCATION ID	MW-6
DATE	7/23/2020
START TIME	8:55
END TIME	9:35
SITE NAME/NUMBER	Tuxedo Waste Disposal (Site No. 336035)
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	8.98 FT	**FINAL DTW (BMP)**	17.2 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	18.40 FT	**SCREEN LENGTH**	10 FT	**PID AMBIENT AIR**	PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	9.42 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	3.03 GAL	**PID WELL MOUTH**	0 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	3.48 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.93 GAL	**DRAWDOWN/ TOTAL PURGED**	8.22	**PRESSURE TO PUMP**	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
855	**BEGIN PURGING**									
905	9.54	250	15.61	0.366	6.08	0.38	1.6	23.1	19.4	
915	9.56	250	15.87	0.366	6.09	0.25	4.5	-44.2	19.4	
920	9.56	250	15.98	0.371	6.07	0.25	1.9	-69.7	19.4	
925	9.56	250	16.13	0.374	6.07	0.19	0.0	-79.4	19.4	
930	9.56	250	16.40	0.375	6.07	0.17	0.0	-81.0	19.4	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	16.4	**0.375**	**6.1**	**0.2**	**0**	**-81**

TEMP.: nearest degree (ex. 10.1 = 10)

COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)

pH: nearest tenth (ex. 5.53 = 5.5)

DO: nearest tenth (ex. 3.51 = 3.5)

TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)

ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] WATTERA
- [ ] OTHER
- [ ] OTHER

DECON FLUIDS USED
- [X] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[ ]	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO	
PURGE WATER CONTAINERIZED	[ ]	[X]	NUMBER OF GALLONS GENERATED: 2.93
NO-PURGE METHOD UTILIZED	[ ]	[X]	If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Caitlin Serowik Print Name: Caitlin Serowik

Checked By: Date: 7/23/2020

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	NYSDEC WA45 - Site Management Portfolio
PROJECT NUMBER	320919.0000.0000
SAMPLE ID	TWD-RI-1
SAMPLE TIME	14:20

LOCATION ID	RI-1
DATE	7/23/2020
START TIME	13:15
END TIME	14:20
SITE NAME/NUMBER	Tuxedo Waste Disposal (Site No. 336035)
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	11.87 FT	**FINAL DTW (BMP)**	14.22 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	95.80 FT	**SCREEN LENGTH**	20.3 FT	**PID AMBIENT AIR**	PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	83.93 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.87 GAL	**PID WELL MOUTH**	0 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	30.97 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.93 GAL	**DRAWDOWN/ TOTAL PURGED**	2.35	**PRESSURE TO PUMP**	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1315	**BEGIN PURGING**									
1325	13.91	250	15.56	0.372	7.30	0.35	0.0	-146.6	96.8	
1335	14.08	250	15.03	0.372	7.28	0.24	0.0	-162.1	96.8	
1340	14.16	250	15.05	0.394	7.28	0.19	0.0	-169.0	96.8	
1345	14.22	250	15.10	0.395	7.17	0.21	0.0	-149.6	96.8	
1350	14.22	250	14.93	0.422	6.71	1.06	0.0	-33.1	96.8	
1355	14.22	250	14.71	0.42	6.64	1.16	0	5.0	96.8	
1400	14.22	250	14.72	0.419	6.6	1.18	0	25.7	96.8	
1405	14.22	250	14.75	0.417	6.58	1.19	0	41.9	96.8	
1410	14.22	250	14.66	0.423	6.57	1.16	0	48.0	96.8	
1415	14.22	250	15.09	0.418	6.56	1.11	0	51.2	96.8	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	15.1	**0.418**	**6.6**	**1.1**	**0**	**51**

TEMP.: nearest degree (ex. 10.1 = 10)

COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)

pH: nearest tenth (ex. 5.53 = 5.5)

DO: nearest tenth (ex. 3.51 = 3.5)

TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)

ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER _____
- [ ] WATTERA
- [ ] OTHER _____
- [ ] OTHER _____

DECON FLUIDS USED
- [X] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. ____ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[ ]	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO	
PURGE WATER CONTAINERIZED	[ ]	[X]	NUMBER OF GALLONS GENERATED: 2.93
NO-PURGE METHOD UTILIZED	[ ]	[X]	If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Caitlin Serowik Print Name: Caitlin Serowik

Checked By: Date: 7/23/2020

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	NYSDEC WA45 - Site Management Portfolio
PROJECT NUMBER	320919.0000.0000
SAMPLE ID	TWD-RI-2
SAMPLE TIME	10:35

LOCATION ID	RI-2
DATE	7/23/2020
START TIME	9:50
END TIME	10:35
SITE NAME/NUMBER	Tuxedo Waste Disposal (Site No. 336035)
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [ ] 2 [X] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	10.72 FT	**FINAL DTW (BMP)**	10.76 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	70.70 FT	**SCREEN LENGTH**	10 FT	**PID AMBIENT AIR**	PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	59.98 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.01 GAL	**PID WELL MOUTH**	0 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	22.13 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.93 GAL	**DRAWDOWN/ TOTAL PURGED**	0.04	**PRESSURE TO PUMP**	PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
950	**BEGIN PURGING**									
1000	10.76	250	14.51	0.374	6.05	1.57	33.1	95.0	71.7	
1010	10.76	250	14.89	0.372	6.01	1.34	29.2	100.8	71.7	
1015	10.76	250	14.82	0.371	6.00	1.35	30.7	102.7	71.7	
1020	10.76	250	14.77	0.370	6.00	1.21	28.8	104.1	71.7	
1025	10.76	250	14.75	0.370	6	1.19	28.1	105.9	71.7	
1030	10.76	250	14.80	0.369	5.99	1.15	29.2	106.1	96.8	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	14.8	**0.369**	**6**	**1.2**	**29**	**106**

TEMP.: nearest degree (ex. 10.1 = 10)

COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)

pH: nearest tenth (ex. 5.53 = 5.5)

DO: nearest tenth (ex. 3.51 = 3.5)

TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)

ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER _____
- [ ] WATTERA
- [ ] OTHER _____
- [ ] OTHER _____

DECON FLUIDS USED
- [X] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER _____
- [ ] FILTERS NO. ____ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[ ]	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO	
PURGE WATER CONTAINERIZED	[ ]	[X]	NUMBER OF GALLONS GENERATED: 2.93
NO-PURGE METHOD UTILIZED	[ ]	[X]	If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

Sampler Signature: Caitlin Serowik Print Name: Caitlin Serowik

Checked By: Date: 7/23/2020

SKETCH/NOTES

Appendix D

Data Usability Summary Reports – Groundwater and Residential – July 2020

Data Usability Summary Report

Site: Tuxedo Waste Disposal
Laboratory: Eurofins TestAmerica Buffalo – Amherst, NY and Burlington, VT
SDG No.: 480-172889-1
Parameters: Per- and Poly-fluoroalkyl Substances (PFAS), 1,4-Dioxane
Data Reviewer: Kristen Morin/TRC
Peer Reviewer: Elizabeth Denly/TRC
Date: August 19, 2020

Samples Reviewed and Evaluation Summary

1 Residential Well Sample: TWD-WP-RES-1

The above-listed residential well sample was collected on July 23, 2020 and was analyzed for the following parameters:

- 1,4-Dioxane by SW-846 8270D with Selective Ion Monitoring (SIM)
- PFAS (21 target analytes) based on EPA Method 537.1 (modified) using Test America – Burlington, VT standard operating procedure (SOP) BR-LC-009, revision 4.0, effective date 04/12/19.

The sample was analyzed for 1,4-dioxane by TestAmerica – Buffalo, NY and for PFAS by TestAmerica – Burlington, VT. The data validation was performed in accordance with the following guidance, modified for the methodologies utilized:

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review (EPA-540-R-2017-002), January 2017
- USEPA National Functional Guidelines for High Resolution Superfund Methods Data Review (EPA-542-B-16-001), April 2016
- USEPA Data Review and Validation Guidelines for Perfluoroalkyl Substances (PFASs) Analyzed Using EPA Method 537 (EPA 910-R-18-001), November 2018
- New York State Department of Environmental Conservation Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids, January 2020

The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- * Data Completeness
- * Holding Times and Sample Preservation
- * GC/MS Tunes (1,4-Dioxane only)
- Initial and Continuing Calibrations
- Blanks
- * Surrogate Recoveries (1,4-Dioxane only)
- * Isotopically Labeled Surrogate Results (PFAS only)
- * Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- * Laboratory Control Sample (LCS) Results
- * Internal Standards
- NA Field Duplicate Results
- Sample Results and Reported Quantitation Limits (QLs)

* • Target Compound Identification

* - All criteria were met.
NA - Field duplicates were not associated with this sample set.

Overall Evaluation of Data and Potential Usability Issues

All results are usable for project objectives. There were no qualifications applied to the data because of sampling error. Qualifications applied to the data because of analytical error are discussed below.

- Potential uncertainty exists for the result for PFPeA in sample TWD-WP-RES-1 which was below the lowest calibration standard and QL. This result was qualified as estimated (J) in the associated sample. This result can be used for project objectives as an estimated value, which may have a minor impact on the data usability.

Data Completeness

The data package was a complete Level IV data deliverable.

Holding Times and Sample Preservation

All holding time and sample preservation criteria were met.

GC/MS Tunes (1,4-Dioxane only)

All criteria were met in the 1,4-dioxane analyses.

Initial and Continuing Calibrations

1,4-Dioxane

The percent relative standard deviation (%RSD) was within the method acceptance criteria in the initial calibration (IC). The percent difference (%D) met the method acceptance criteria in the continuing calibration (CC) standard associated with the sample in this data set

PFAS

The %RSDs were within the acceptance criteria in the IC. The %Ds met the acceptance criteria in the CC standards associated with the sample in this data set with one exception. The %D for 6:2 FTS (53.0%) in the closing CC standard (CCV 200-157374/47 analyzed on 07/29/20 at 22:14) associated with sample TWD-WP-RES-1 was above the acceptance criteria (30%). The laboratory stated in the case narrative that this high %D was due to carryover from the preceding sample. Since the %D for 6:2 FTS was within the acceptance criteria in the opening CC standard associated with sample TWD-WP-RES-1 and since 6:2 FTS was not detected in sample TWD-WP-RES-1, professional judgment was used and no qualification was taken on this basis.

Blanks

1,4-Dioxane was not detected in the associated method blank.

The following table summarizes the PFAS compound found in the laboratory method blank, the concentration detected, and the resulting validation actions.

Blank ID	Compound	Result (ng/L)	Validation Action
MB 200-157326/1-A	PFNA	0.288 J	Qualification was not required since PFNA was not detected in the associated sample.
Associated samples: TWD-WP-RES-1			
Criteria: • If concentration in sample <QL, replace result with QL flagged with "U" • If concentration in sample ≥QL and <10x blank concentration, qualify result as estimated, biased high (J+) • If concentration in sample ≥QL and ≥10x blank concentration, no qualification			

Surrogate Recoveries (1,4-Dioxane only)

The surrogate percent recoveries (%Rs) met the laboratory acceptance criteria.

Isotopically Labeled Surrogate Results (PFAS only)

Eighteen isotopically labeled surrogate were spiked into the sample prior to extraction for isotope dilution quantitation. The %Rs were within the acceptance criteria.

MS/MSD Results

MS/MSD analyses were performed on sample TWD-WP-RES-1 for 1,4-dioxane and PFAS. The %Rs and relative percent differences met the laboratory acceptance criteria for 1,4-dioxane and PFAS.

LCS Results

The LCS %Rs were within the laboratory acceptance criteria for the 1,4-dioxane and PFAS analyses.

Internal Standards

1,4-Dioxane

The %Rs for the internal standard 1,4-dichlorobenzene-d_4 met the laboratory limits of 50-150% in the 1,4-dioxane analyses.

PFAS

The isotopically labeled internal standard 13C2-PFOA was added to each sample prior to injection to monitor for ion suppression/enhancement at the instrument level. The %Rs met the laboratory limits of 50-150% in the PFAS analyses.

Field Duplicate Results

There were no field duplicates associated with this data set.

Sample Results and Reported Quantitation Limits

Sample calculations were spot-checked; there were no errors noted. The result for PFPeA in sample TWD-WP-RES-1 was below the lowest calibration standard and QL. This result was qualified as estimated (J) in the associated sample by the laboratory.

There were no dilutions performed on the sample in this data set.

Target Compound Identification

1,4-Dioxane

All criteria were met for 1,4-dioxane.

PFAS

Extracted ion chromatograms were reviewed to verify the target compound identifications. The laboratory manually integrated several peaks to ensure the inclusion of linear and branched isomers for PFOA, PFOS, NEtFOSAA, NMeFOSAA, and/or PFHxS; and/or to ensure proper integration of all PFAS.

Two precursor/product ion transitions were used for identification for all compounds except for PFBA, PFPeA, PFOSA, NMeFOSAA, NEtFOSAA, 6:2 FTS, and 8:2 FTS which only used one precursor/product ion transition for identification. Ratios between the two precursor/product ion transitions were not evaluated since only PFPeA, which only used one precursor/product ion transition for identification, was detected in sample TWD-WP-RES-1.

QUALIFIED FORM 1s

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-172889-1

SDG No.:

Client Sample ID: TWD-WP-RES-1 Lab Sample ID: 480-172889-5

Matrix: Water Lab File ID: Z001632.D

Analysis Method: 8270D SIM ID Date Collected: 07/23/2020 11:30

Extract. Method: 3510C Date Extracted: 07/27/2020 15:06

Sample wt/vol: 1000(mL) Date Analyzed: 07/29/2020 17:44

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 542744 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	24		15-110

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Burlington Job No.: 480-172889-1

SDG No.:

Client Sample ID: TWD-WP-RES-1 Lab Sample ID: 480-172889-5

Matrix: Water Lab File ID: PA200729A43.d

Analysis Method: 537 (modified) Date Collected: 07/23/2020 11:30

Extraction Method: 3535 Date Extracted: 07/28/2020 17:04

Sample wt/vol: 288.8(mL) Date Analyzed: 07/29/2020 21:41

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: C-18 ID: 4.6(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 157374 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		1.7	0.87
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.65	J	1.7	0.55
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.7	0.66
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.79
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.7	0.70
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.67
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.68
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.51
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.52
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.80
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.42
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.69
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.82
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.53
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.78
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		8.7	8.7
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	1.5
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	1.3
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	4.8
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	2.5

QC NONCONFORMANCE DOCUMENTATION

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Burlington Job No.: 480-172889-1

SDG No.:

Lab Sample ID: CCV 200-157374/47 Calibration Date: 07/29/2020 22:14

Instrument ID: LC812 Calib Start Date: 07/16/2020 13:57

GC Column: C-18 ID: 4.60(mm) Calib End Date: 07/16/2020 14:39

Lab File ID: PA200729A47.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.7997	0.7474		2.34	2.50	-6.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.8357	0.8014		2.40	2.50	-4.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.8435	0.9448		2.48	2.21	12.0	40.0
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	AveID	1.533	1.407		2.14	2.34	-8.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8152	0.8007		2.46	2.50	-1.8	40.0
Perfluoropentanesulfonic acid	AveID	1.029	1.033		2.36	2.35	0.4	50.0
HFPO-DA	AveID	1.975	1.590		2.01	2.50	-19.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	0.9265	0.8844		2.17	2.28	-4.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.8230	0.8668		2.63	2.50	5.3	40.0
DONA	AveID	2.349	2.503		2.51	2.36	6.6	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9462	0.9863		2.48	2.38	4.2	50.0
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	AveID	0.6742	1.032		3.63	2.37	53.0*	40.0
Perfluorooctanoic acid (PFOA)	AveID	0.8736	0.8455		2.42	2.50	-3.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.8605	0.8809		2.37	2.32	2.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.8868	0.8044		2.27	2.50	-9.3	40.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	AveID	0.7301	0.7954		2.54	2.33	8.9	50.0
Perfluorononanesulfonic acid	AveID	0.7323	0.7639		2.50	2.40	4.3	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.7913	0.7834		2.48	2.50	-1.0	40.0
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	AveID	0.2991	0.2902		2.32	2.40	-3.0	40.0
Perfluorooctanesulfonamide (PFOSA)	AveID	0.7662	0.7824		2.55	2.50	2.1	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7295	0.6223		2.13	2.50	-14.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5470	0.4266		1.88	2.41	-22.0	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.6515	0.6682		2.56	2.50	2.6	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7628	0.6446		2.11	2.50	-15.5	40.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	AveID	0.6394	0.6287		2.32	2.36	-1.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.7784	0.7685		2.47	2.50	-1.3	40.0
10:2 FTS	AveID	0.1704	0.1629		2.30	2.41	-4.4	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.1758	0.1739		2.39	2.42	-1.1	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.6528	0.7671		2.94	2.50	17.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1866	0.1775		2.38	2.50	-4.9	40.0

FORM VII 537 (modified)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Burlington Job No.: 480-172889-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 200-157326/1-A

Matrix: Water Lab File ID: PA200729A22.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 07/28/2020 17:04

Sample wt/vol: 250(mL) Date Analyzed: 07/29/2020 18:47

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: C-18 ID: 4.6(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 157374 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		2.0	1.0
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.63
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.76
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.91
335-67-1	Perfluorooctanoic acid (PFOA)	ND		2.0	0.81
375-95-1	Perfluorononanoic acid (PFNA)	0.288	J	2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	ND		2.0	0.77
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.78
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.59
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.60
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.92
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.49
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.80
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.95
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.61
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.90
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		10	10
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	1.7
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.5
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		20	5.5
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		20	2.9

Data Usability Summary Report

Site: Tuxedo Waste Disposal
Laboratory: Eurofins TestAmerica Buffalo – Amherst, NY
SDG No.: 480-172889-1
Parameters: Metals
Data Reviewer: Amy Bass/TRC
Peer Reviewer: Elizabeth Denly/TRC
Date: August 18, 2020

Sample Reviewed and Evaluation Summary

7 Groundwater Samples: TWD-MW-2, TWD-MW-3, TWD-MW-4, TWD-MW-6, TWD-RI-1, TWD-RI-2, TWD-RI-4

The above-listed groundwater samples were collected on July 22 and 23, 2020, and were analyzed for the following parameters:

- Total Metals by SW-846 Methods 6010C/7470A

The data validation was performed in accordance with *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA-540-R-2017-001),* January 2017, modified for the methodologies utilized.

The data were evaluated based on the following parameters:

	•	Overall Evaluation of Data and Potential Usability Issues
*	•	Data Completeness
*	•	Holding Times and Sample Preservation
*	•	Initial and Continuing Calibrations
	•	Interference Check Sample (ICS) Results
	•	Blanks
*	•	Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
NA	•	Laboratory Duplicate Results
*	•	Inductively Coupled Plasma (ICP) Serial Dilution Results
*	•	Laboratory Control Sample (LCS) Results
NA	•	Field Duplicate Results
	•	Sample Results and Reported Quantitation Limits (QLs)

*	-	All criteria were met.
NA	-	Field duplicates and laboratory duplicates were not associated with this sample set.

Overall Evaluation of Data and Potential Usability Issues

All results are usable for the project objectives. Qualifications applied to the data as a result of sampling error were not required. Qualifications applied to the data as a result of analytical error are discussed below.

- Potential uncertainty exists for select metals results that were detected between the method detection limit (MDL) and QL. These results were qualified as estimated (J) by the laboratory. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

- The positive results for copper in all samples were qualified as nondetect (U) due to method blank contamination. These results can be used for project objectives as nondetects, which may have a minor impact on the data usability

Data Completeness

The data package was a complete Level IV data deliverable package.

Holding Times and Sample Preservation

All holding time and sample preservation criteria were met.

Initial and Continuing Calibrations

All initial calibration correlation coefficients for the metals analyses were >0.995. The initial calibration verification and continuing calibration verification percent recoveries (%Rs) for the metals analyses met the method acceptance limits (90-110%), and the low-level continuing calibration verification %Rs were within the method acceptance limits of 70-130%.

ICS Results

All analytes recovered within the acceptance limits in the ICSAB sample analyses.

Several analytes (cadmium, lead, manganese, potassium, vanadium, and zinc) were detected as positive or negative interference in the ICSA analysis at levels exceeding the MDL but below the QL; barium was detected as positive interference in the ICSA analysis at a level exceeding the MDL and the QL. Results for the interferents (aluminum, calcium, iron, and magnesium) in all samples were either nondetect or were detected at concentrations less than 50% of the concentrations spiked into the ICSA; thus, ICS interferences were not evaluated for these samples. No validation actions were required on this basis.

Blanks

The following table summarizes the only metal detected in the associated laboratory method blank, the concentration detected, and the resulting validation actions.

Method Blank ID	Analyte	Blank Concentration (mg/L)	Validation Actions
MB 480-542332/1-A	Copper	0.00236 J	The positive results for copper in the associated samples were qualified as nondetect (U) at the QL since all concentrations were < the QL.
Associated samples: TWD-MW-2, TWD-MW-3, TWD-MW-4, TWD-MW-6, TWD-RI-1, TWD-RI-2, TWD-RI-4			

The following table lists the analytes (other than copper) that were detected in the relevant calibration blanks, the associated samples, and the resulting validation actions. Copper was also detected, but the concentration was below the method blank concentration; therefore, no further validation actions were required.

Analyte	Blank Concentration (mg/L)	Validation Actions
CCB: 480-542653/26 (7/29/2020 @ 02:15)		
Potassium	0.103 J	Qualification was not required since the positive results for potassium in the associated samples were >10× the blank concentration.
Associated samples: TWD-MW-2, TWD-MW-3, TWD-MW-4, TWD-MW-6, TWD-RI-1		

MS/MSD Results

MS/MSD analyses for metals and mercury, and the post digestion spike (PDS) analysis for metals were performed on sample TWD-MW-2. All MS/MSD %Rs and MS/MSD relative percent differences (RPDs) were within the acceptance limits (75-125% for %R; ≤20% for RPD). All PDS %Rs were also within the acceptance limits (80-120%).

Laboratory Duplicate Results

Laboratory duplicate analyses were not performed on any samples in this data set.

ICP Serial Dilution Results

The ICP serial dilution analysis was performed on sample TWD-MW-2 for metals and mercury. All percent differences (%Ds) for analytes that were reported at >50× the MDL (calcium and magnesium) in sample TWD-MW-2 were within the acceptance criteria (≤ 10%). No qualifications were required.

LCS Results

LCS analyses were included for metals and mercury. The LCS %Rs met the acceptance criteria (80-120%).

Field Duplicate Results

No field duplicate pairs were submitted with this sample set.

Sample Results and Reported Quantitation Limits

Select metal results were reported between the MDL and QL in the associated samples. These results were qualified as estimated (J) by the laboratory.

Sample calculations were spot-checked and no errors were noted.

No dilutions were performed for the metals or mercury analyses.

QUALIFIED FORM 1s

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: TWD-MW-2 | Lab Sample ID: 480-172889-1

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-172889-1

SDG ID.:

Matrix: Water | Date Sampled: 07/23/2020 15:05

Reporting Basis: WET | Date Received: 07/25/2020 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	0.16	0.20	0.060	mg/L	J		1	6010C
7440-36-0	Antimony	ND	0.020	0.0068	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.015	0.0056	mg/L			1	6010C
7440-39-3	Barium	0.0080	0.0020	0.00070	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	22.6	0.50	0.10	mg/L			1	6010C
7440-47-3	Chromium	0.0010	0.0040	0.0010	mg/L	J		1	6010C
7440-48-4	Cobalt	ND	0.0040	0.00063	mg/L			1	6010C
7440-50-8	Copper	ND ~~0.0020~~	0.010	0.0016	mg/L	~~J~~ U	~~B~~	1	6010C
7439-89-6	Iron	0.17	0.050	0.019	mg/L			1	6010C
7439-92-1	Lead	ND	0.010	0.0030	mg/L			1	6010C
7439-95-4	Magnesium	6.1	0.20	0.043	mg/L			1	6010C
7439-96-5	Manganese	0.0083	0.0030	0.00040	mg/L			1	6010C
7440-02-0	Nickel	ND	0.010	0.0013	mg/L			1	6010C
7440-09-7	Potassium	1.2	0.50	0.10	mg/L			1	6010C
7782-49-2	Selenium	ND	0.025	0.0087	mg/L			1	6010C
7440-22-4	Silver	ND	0.0060	0.0017	mg/L			1	6010C
7440-23-5	Sodium	4.7	1.0	0.32	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.010	mg/L			1	6010C
7440-62-2	Vanadium	0.0031	0.0050	0.0015	mg/L	J		1	6010C
7440-66-6	Zinc	0.0032	0.010	0.0015	mg/L	J		1	6010C
7439-97-6	Mercury	ND	0.00020	0.00012	mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: TWD-RI-4 | Lab Sample ID: 480-172889-2

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-172889-1

SDG ID.:

Matrix: Water | Date Sampled: 07/23/2020 08:05

Reporting Basis: WET | Date Received: 07/25/2020 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	0.20	0.060	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0068	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.015	0.0056	mg/L			1	6010C
7440-39-3	Barium	0.031	0.0020	0.00070	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	81.4	0.50	0.10	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0040	0.0010	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0040	0.00063	mg/L			1	6010C
7440-50-8	Copper	ND ~~0.0016~~	0.010	0.0016	mg/L	~~J~~ U	~~B~~	1	6010C
7439-89-6	Iron	ND	0.050	0.019	mg/L			1	6010C
7439-92-1	Lead	0.0038	0.010	0.0030	mg/L	J		1	6010C
7439-95-4	Magnesium	7.6	0.20	0.043	mg/L			1	6010C
7439-96-5	Manganese	0.0062	0.0030	0.00040	mg/L			1	6010C
7440-02-0	Nickel	0.0046	0.010	0.0013	mg/L	J		1	6010C
7440-09-7	Potassium	5.4	0.50	0.10	mg/L			1	6010C
7782-49-2	Selenium	ND	0.025	0.0087	mg/L			1	6010C
7440-22-4	Silver	ND	0.0060	0.0017	mg/L			1	6010C
7440-23-5	Sodium	5.6	1.0	0.32	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.010	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0015	mg/L			1	6010C
7440-66-6	Zinc	0.0086	0.010	0.0015	mg/L	J		1	6010C
7439-97-6	Mercury	ND	0.00020	0.00012	mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: TWD-RI-2 | Lab Sample ID: 480-172889-3

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-172889-1

SDG ID.:

Matrix: Water | Date Sampled: 07/23/2020 10:35

Reporting Basis: WET | Date Received: 07/25/2020 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	0.22	0.20	0.060	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0068	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.015	0.0056	mg/L			1	6010C
7440-39-3	Barium	0.0098	0.0020	0.00070	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	35.3	0.50	0.10	mg/L			1	6010C
7440-47-3	Chromium	0.13	0.0040	0.0010	mg/L			1	6010C
7440-48-4	Cobalt	0.0017	0.0040	0.00063	mg/L	J		1	6010C
7440-50-8	Copper	ND ~~0.0052~~	0.010	0.0016	mg/L	~~J~~ U	~~B~~	1	6010C
7439-89-6	Iron	0.81	0.050	0.019	mg/L			1	6010C
7439-92-1	Lead	ND	0.010	0.0030	mg/L			1	6010C
7439-95-4	Magnesium	9.5	0.20	0.043	mg/L			1	6010C
7439-96-5	Manganese	0.060	0.0030	0.00040	mg/L			1	6010C
7440-02-0	Nickel	0.11	0.010	0.0013	mg/L			1	6010C
7440-09-7	Potassium	1.3	0.50	0.10	mg/L			1	6010C
7782-49-2	Selenium	ND	0.025	0.0087	mg/L			1	6010C
7440-22-4	Silver	ND	0.0060	0.0017	mg/L			1	6010C
7440-23-5	Sodium	44.3	1.0	0.32	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.010	mg/L			1	6010C
7440-62-2	Vanadium	0.0018	0.0050	0.0015	mg/L	J		1	6010C
7440-66-6	Zinc	0.0017	0.010	0.0015	mg/L	J		1	6010C
7439-97-6	Mercury	ND	0.00020	0.00012	mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: TWD-MW-6 | Lab Sample ID: 480-172889-4

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-172889-1

SDG ID.:

Matrix: Water | Date Sampled: 07/23/2020 09:35

Reporting Basis: WET | Date Received: 07/25/2020 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	0.20	0.060	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0068	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.015	0.0056	mg/L			1	6010C
7440-39-3	Barium	0.036	0.0020	0.00070	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	90.3	0.50	0.10	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0040	0.0010	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0040	0.00063	mg/L			1	6010C
7440-50-8	Copper	ND ~~0.0017~~	0.010	0.0016	mg/L	~~J~~ U	~~B~~	1	6010C
7439-89-6	Iron	2.3	0.050	0.019	mg/L			1	6010C
7439-92-1	Lead	ND	0.010	0.0030	mg/L			1	6010C
7439-95-4	Magnesium	6.8	0.20	0.043	mg/L			1	6010C
7439-96-5	Manganese	0.98	0.0030	0.00040	mg/L			1	6010C
7440-02-0	Nickel	ND	0.010	0.0013	mg/L			1	6010C
7440-09-7	Potassium	2.6	0.50	0.10	mg/L			1	6010C
7782-49-2	Selenium	ND	0.025	0.0087	mg/L			1	6010C
7440-22-4	Silver	ND	0.0060	0.0017	mg/L			1	6010C
7440-23-5	Sodium	4.9	1.0	0.32	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.010	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0015	mg/L			1	6010C
7440-66-6	Zinc	ND	0.010	0.0015	mg/L			1	6010C
7439-97-6	Mercury	ND	0.00020	0.00012	mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: TWD-RI-1 | Lab Sample ID: 480-172889-6

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-172889-1

SDG ID.:

Matrix: Water | Date Sampled: 07/23/2020 14:20

Reporting Basis: WET | Date Received: 07/25/2020 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	0.34	0.20	0.060	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0068	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.015	0.0056	mg/L			1	6010C
7440-39-3	Barium	0.0090	0.0020	0.00070	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	61.8	0.50	0.10	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0040	0.0010	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0040	0.00063	mg/L			1	6010C
7440-50-8	Copper	ND ~~0.0027~~	0.010	0.0016	mg/L	~~J~~ U	~~B~~	1	6010C
7439-89-6	Iron	0.10	0.050	0.019	mg/L			1	6010C
7439-92-1	Lead	ND	0.010	0.0030	mg/L			1	6010C
7439-95-4	Magnesium	9.7	0.20	0.043	mg/L			1	6010C
7439-96-5	Manganese	0.0046	0.0030	0.00040	mg/L			1	6010C
7440-02-0	Nickel	ND	0.010	0.0013	mg/L			1	6010C
7440-09-7	Potassium	2.2	0.50	0.10	mg/L			1	6010C
7782-49-2	Selenium	ND	0.025	0.0087	mg/L			1	6010C
7440-22-4	Silver	ND	0.0060	0.0017	mg/L			1	6010C
7440-23-5	Sodium	31.7	1.0	0.32	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.010	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0015	mg/L			1	6010C
7440-66-6	Zinc	0.0024	0.010	0.0015	mg/L	J		1	6010C
7439-97-6	Mercury	ND	0.00020	0.00012	mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: TWD-MW-4 | Lab Sample ID: 480-172889-7

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-172889-1

SDG ID.:

Matrix: Water | Date Sampled: 07/23/2020 15:25

Reporting Basis: WET | Date Received: 07/25/2020 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	0.20	0.060	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0068	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.015	0.0056	mg/L			1	6010C
7440-39-3	Barium	0.017	0.0020	0.00070	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	41.3	0.50	0.10	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0040	0.0010	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0040	0.00063	mg/L			1	6010C
7440-50-8	Copper	ND ~~0.0024~~	0.010	0.0016	mg/L	J U	B	1	6010C
7439-89-6	Iron	0.032	0.050	0.019	mg/L	J		1	6010C
7439-92-1	Lead	ND	0.010	0.0030	mg/L			1	6010C
7439-95-4	Magnesium	8.2	0.20	0.043	mg/L			1	6010C
7439-96-5	Manganese	0.0067	0.0030	0.00040	mg/L			1	6010C
7440-02-0	Nickel	ND	0.010	0.0013	mg/L			1	6010C
7440-09-7	Potassium	1.7	0.50	0.10	mg/L			1	6010C
7782-49-2	Selenium	ND	0.025	0.0087	mg/L			1	6010C
7440-22-4	Silver	ND	0.0060	0.0017	mg/L			1	6010C
7440-23-5	Sodium	41.4	1.0	0.32	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.010	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0015	mg/L			1	6010C
7440-66-6	Zinc	0.0017	0.010	0.0015	mg/L	J		1	6010C
7439-97-6	Mercury	ND	0.00020	0.00012	mg/L			1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: TWD-MW-3 | Lab Sample ID: 480-172889-8

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-172889-1

SDG ID.:

Matrix: Water | Date Sampled: 07/23/2020 16:30

Reporting Basis: WET | Date Received: 07/25/2020 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	ND	0.20	0.060	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0068	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.015	0.0056	mg/L			1	6010C
7440-39-3	Barium	0.011	0.0020	0.00070	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	19.5	0.50	0.10	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0040	0.0010	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0040	0.00063	mg/L			1	6010C
7440-50-8	Copper	ND ~~0.0026~~	0.010	0.0016	mg/L	~~J~~ U	~~B~~	1	6010C
7439-89-6	Iron	ND	0.050	0.019	mg/L			1	6010C
7439-92-1	Lead	ND	0.010	0.0030	mg/L			1	6010C
7439-95-4	Magnesium	4.9	0.20	0.043	mg/L			1	6010C
7439-96-5	Manganese	0.00068	0.0030	0.00040	mg/L	J		1	6010C
7440-02-0	Nickel	ND	0.010	0.0013	mg/L			1	6010C
7440-09-7	Potassium	1.2	0.50	0.10	mg/L			1	6010C
7782-49-2	Selenium	ND	0.025	0.0087	mg/L			1	6010C
7440-22-4	Silver	ND	0.0060	0.0017	mg/L			1	6010C
7440-23-5	Sodium	53.6	1.0	0.32	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.010	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0015	mg/L			1	6010C
7440-66-6	Zinc	ND	0.010	0.0015	mg/L			1	6010C
7439-97-6	Mercury	ND	0.00020	0.00012	mg/L			1	7470A

QC NONCONFORMANCE DOCUMENTATION

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-172889-1

SDG No.:

Concentration Units: mg/L Lab Sample ID: MB 480-542332/1-A

Instrument Code: ICAP2 Batch No.: 542653

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND		^	6010C
7440-41-7	Beryllium	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-70-2	Calcium	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-50-8	Copper	0.00236	J		6010C
7439-89-6	Iron	ND			6010C
7439-92-1	Lead	ND			6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7440-02-0	Nickel	ND			6010C
7440-09-7	Potassium	ND			6010C
7782-49-2	Selenium	ND			6010C
7440-22-4	Silver	ND			6010C
7440-23-5	Sodium	ND			6010C
7440-28-0	Thallium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-66-6	Zinc	ND			6010C

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-172889-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	ICB 480-542653/6 07/28/2020 15:01		CCB 480-542653/19 07/29/2020 01:30 No samples associated		CCB 480-542653/26 07/29/2020 02:15		CCB 480-542653/38 07/29/2020 02:59	
		Found	C	Found	C	Found	C	Found	C
Aluminum	0.20	ND		ND		ND		ND	
Antimony	0.020	ND		ND		ND		ND	
Arsenic	0.015	ND		ND		ND		ND	
Barium	0.0020	ND		ND		ND		ND	
Beryllium	0.0020	ND		ND		ND		ND	
Cadmium	0.0020	ND		ND		ND		ND	
Calcium	0.50	ND		ND		ND		ND	
Chromium	0.0040	ND		ND		ND		ND	
Cobalt	0.0040	ND		ND		ND		ND	
Copper	0.010	ND		ND		0.00170	J	< MB ND	
Iron	0.050	ND		ND		ND		ND	
Lead	0.010	ND		ND		ND		ND	
Magnesium	0.20	ND		ND		ND		ND	
Manganese	0.0030	ND		ND		ND		ND	
Nickel	0.010	ND		ND		ND		ND	
Potassium	0.50	ND		0.193	J	0.103	J	ND	
Selenium	0.025	ND		ND		ND		ND	
Silver	0.0060	ND		ND		ND		ND	
Sodium	1.0	ND		ND		ND		ND	
Thallium	0.020	ND		ND		ND		ND	
Vanadium	0.0050	ND		ND		ND		ND	
Zinc	0.010	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.