

Broome County Division of Solid Waste Management

Operational Year 11 Semi-Annual Monitoring Report

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Colesville Landfill, Broome County, New York NYSDEC Site 704010

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1. Introduction

This Monitoring Report (report) was prepared on behalf of the Broome County Division of Solid Waste Management for the Colesville Landfill, located in Broome County, New York (site) to evaluate and document long-term monitoring (LTM) activities at the site. Remediation and monitoring activities are being conducted pursuant to the Record of Decision (ROD) issued in March 1991 and Explanation of Significant Differences (ESD) that were issued in September 2000 and July 2004, respectively. LTM activities (which include environmental effectiveness and remediation system performance monitoring) were performed in accordance with the LTM Plan (ARCADIS G&M, Inc. 2002), LTM Plan Addendum for Spring Water Remediation Systems (ARCADIS G&M. Inc. 2003), Interim Remedial Action Report (ARCADIS G&M, Inc. 2004), the Proposed Modifications to the Long Term Monitoring Program (ARCADIS G&M, Inc. 2005), and the In-Situ Reactive Zone Discontinuation Pilot Test Work Plan (hereinafter referred to as the "discontinuation pilot test" [ARCADIS of New York Inc. 2012]), which were approved by the United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (NYSDEC). These documents provide a detailed description of the LTM program, methodology, and rationale. Where applicable these elements are either summarized or incorporated by reference herein.

This report describes the results of the December 2012 and March 2013 groundwater quality monitoring, pilot test activities and data evaluation event conducted during Operational Year 11, Quarter Numbers 1 and 2 (October 1, 2012 to March 31, 2013) (hereinafter referred to as the reporting period). Following the detailed data analysis and discussion is a summary of findings, conclusions, and recommendations.

2. Methodology

The following section provides a summary of the environmental effectiveness and discontinuation pilot test monitoring methodology for the reporting period. A site plan showing the monitoring locations is provided on Figure 1.

2.1 Groundwater Monitoring

Groundwater monitoring performed during the reporting period included the following:

 Water-level (hydraulic) measurements were collected from 23 monitoring wells on March 26, 2013 (Table 1).



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- Groundwater samples were collected from the five quarterly monitoring wells (GMMW-2, GMMW-5, GMMW-6, PW-4 and TW-1) during the week of December 18, 2012) and from the six semi-annual monitoring wells (quarterly list of wells plus PW-7) during the week of March 25, 2013. The samples were selectively analyzed for volatile organic compounds (VOCs), dissolved gases, alternate electron acceptors (dissolved iron, dissolved manganese, total iron, total manganese, nitrate, nitrite and sulfate), and total organic carbon (TOC). Field parameters were also recorded at these monitoring locations (Table 2 and 3).
- Groundwater samples were collected from select injection wells (IW-3, IW-8 and IW-13) the weeks of December 18, 2012 and March 25, 2013. The samples were analyzed for TOC. Field parameters were also recorded at these monitoring locations (Table 3).

Groundwater samples were collected from monitoring wells utilizing passive diffusive bag (PDB) samplers (VOCs and dissolved gases) or as grab samples utilizing bailers or whale pump (TOC and alternate electron acceptors) in accordance with the LTM Plan (ARCADIS G&M, Inc. 2002) and/or the Proposed Modifications to the Long-Term Monitoring Program (ARCADIS G&M, Inc. 2005).

2.2 Surface Water Monitoring

Surface water samples were collected at the SW-2, SW-3, SW-4, and F-6 locations during the week of March 25, 2013. The samples were analyzed for VOCs and metals (Table 4). Field parameters were also recorded at these surface water locations (Appendix A). Surface water samples were collected mid-stream as grab samples in accordance with the LTM Plan (ARCADIS G&M, Inc. 2002) and/or the Proposed Modifications to the Long-Term Monitoring Program (ARCADIS G&M, Inc. 2005).

2.3 Spring Water and Sediment Monitoring

Spring water samples were collected at the SP-2, SP-3, and SP-4 sampling locations during the weeks of December 18, 2012 and March 25, 2013. The samples were analyzed for VOCs and metals (Table 5). Field parameters were also recorded at these spring locations (Appendix B). Spring water samples were collected as grab samples, where feasible, or with a peristaltic pump.

A sediment sample was collected at the SP-3 spring water location during the week of March 25, 2013. The sample was analyzed for metals (Table 6). Sediment samples



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were collected as grab samples from a sample matrix that was homogenized in a stainless steel bowl.

2.4 Spring Water Remediation System Performance Monitoring

SP-5 Spring Water Remediation System OM&M was conducted on December 19, 2012 and March 28, 2013. System OM&M was conducted in accordance with the LTM Plan Addendum for Spring Water Remediation Systems (ARCADIS G&M, Inc. 2003) and consisted of the collection of influent and effluent spring water samples for analysis of VOCs. The influent sample was collected after removing three well volumes from the influent monitoring well, which is located within the SP-5 treatment unit and screened below the liquid phase granular activated carbon (LPGAC) zone. The treatment system effluent sample was collected as a grab sample from the discharge pipe prior to entering the outfall stone apron. All spring water samples were analyzed for VOCs using USEPA Method 8260.

3. Groundwater Flow

Water-level measurements were made from existing wells on March 26, 2013. The measurements are provided in Table 1. Water-level elevation data for this reporting period was similar to prior rounds of data. Seasonal fluctuations are observed during each operating quarter; however, the data indicate groundwater flow directions consistent with the conceptual site model (CSM) of groundwater flow toward the discharge boundaries of the North Stream and Susquehanna River.

4. Groundwater Quality

Groundwater analytical results are provided in Tables 2 (VOCs) and 3 (general chemistry, field parameters and dissolved gases). Where applicable, the previous round of analytical results for the respective sampling location has been provided in the same table for comparative purposes. In addition, Figures A-1 through A-8 provided in Appendix A present the concentration of tetrachloroethylene (PCE)-related degradation compounds versus time or trichloroethane (TCA)-related degradation compounds versus time for monitoring wells GMMW-2, GMMW-5, GMMW-6, and TW-1. The concentration of VOCs has been converted into micromoles per liter (umol/L) by dividing the mass based concentration of a compound by the molecular weight. This conversion allows for the VOCs to be compared on a molecular basis as opposed to a mass basis. Because anaerobic in-situ reactive zones (IRZs) are constantly releasing adsorbed phase mass and degrading mass to daughter compounds with different



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molecular weights, the evaluation of anaerobic IRZs on a molecular basis is the appropriate methodology for analyzing the data.

As shown in Table 2 and on Figures A-1 through A-8, total VOC (TVOC) concentrations in all monitoring wells sampled during the reporting period remained stable to decreasing when comparing the March 2013 data to historical data. Specifically, the March 2013 TVOC concentration in mid-plume monitoring wells GMMW-2, GMMW-6, GMMW-5, TW-1, and PW-4 were 147 ug/L, 322 ug/L, 34 ug/L, 83 ug/L, and 22 ug/L, respectively. TVOC concentrations in landfill perimeter monitoring well PW-7 remained stable at a concentration of 400 µg/L.

The data continue to indicate that the dissolved phase plume is stable to decreasing in size. Furthermore, the data indicate that shutdown of the groundwater extraction and treatment and automated injection systems have not resulted in an adverse impact to groundwater quality.

Further discussion of groundwater quality, including a discussion of general chemistry and dissolved gas analytical data is provided in Section 5.

5. Discontinuation Pilot Test

The following section describes objectives and results of the discontinuation pilot test.

5.1 Discontinuation Pilot Test Objectives

Initiation of the discontinuation pilot test began in October 2012. As discussed in the discontinuation pilot test work plan (ARCADIS of New York Inc. 2012), the pilot test includes the temporary discontinuation of carbon injections and temporary shutdown of the groundwater extraction system to evaluate the resulting effect on groundwater and spring water quality. The objectives of the discontinuation pilot test are to:

- Demonstrate that there is little to no benefit to groundwater quality by continuing injections and groundwater extraction and treatment.
- Document the response of groundwater geochemistry including the evaluation of alternate electron acceptors such as dissolved iron and manganese.



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- Evaluate if nearby springs (e.g., SP-3) have a positive response to the discontinuation of injections, including a reduction in visible iron staining and reduction in overall spring water volume.
- Evaluate VOC and metals concentration trends in spring water relative to NYSDEC Division of Technical and Operational Guidance Series (TOGS) 1.1.1 Water Quality Standards and Guidance Values (NYS WQS); and,
- Evaluate metals concentration trends in sediment relative to NYSDEC Technical Guidance for Screening Contaminated Sediments (NYSDEC 1999) and Draft Screening and Assessment of Contaminated Sediments (NYSDEC 2013).

A discussion of the performance monitoring results relative to the discontinuation pilot test objectives is provided below.

5.2 Monitoring Results and Evaluation

The primary monitoring wells that are used to monitor and evaluate the discontinuation pilot test include monitoring wells GMMW-2, GMMW-5, GMMW-6, and TW-1. In addition, monitoring well PW-7, which is located upgradient of the discontinuation pilot test area, will be used as a background well to document the geochemistry of landfill impacted groundwater. Table 3 provides a summary of the geochemical monitoring results including general chemistry and dissolved gas parameters. In order to evaluate the geochemical analytical results relative to baseline conditions, the December 7, 1998 analytical results for monitoring well GMMW-5 have been provided in the same table. These historical data were collected to establish baseline conditions during the Enhanced Reductive Dechlorination Pilot Test (ARCADIS G&M, Inc. 1999) and are representative of conditions prior to the initiation of the IRZ injections.

Geochemical analytical data collected during the reporting period indicate that the groundwater geochemistry remains moderately to strongly anaerobic in and immediately downgradient of the reagent injection wells despite the discontinuation of reagent injections on May 1, 2012. Dissolved methane data from select wells located closest to the injection network indicate that the groundwater system is transitioning from strongly anaerobic to mild/moderately anaerobic. The concentration and speciation of chlorinated VOCs and end-products (ethene and ethane) support that enhanced natural attenuation processes (e.g., biologically mediated complete reductive dechlorination) continue to occur. These observations are supported by the following:



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- Nitrate concentrations in groundwater monitoring wells in close proximity and downgradiant of the anaerobic IRZ are low and considerably below the baseline concentration of 0.632 mg/L. The highest concentration (0.11 mg/L) is observed in close proximity to the anaerobic IRZ at monitoring well TW-1. The lowest concentration (0.039 mg/L) is observed downgradient of the discontinuation pilot test area at mid-plume monitoring well GMMW-2. The absence of nitrate is an indicator of reducing conditions.
- Dissolved (filtered) iron concentrations remained elevated and significantly higher than baseline conditions in close proximity to the anaerobic IRZ and downgradient flow path. The highest dissolved iron concentrations are observed in close proximity to the injection well network at monitoring wells GMMW-5 (23.8 mg/l) and TW-1 (87.3 mg/l) and slightly downgradient at GMMW-6 (14.8 mg/l). The concentration of dissolved iron at downgradient monitoring well GMMW-2 (<0.05 mg/l) is similar to the baseline data from GMMW-5. The presence of elevated dissolved iron is an indicator of reducing conditions.
- Dissolved (filtered) manganese concentrations remained elevated and significantly higher than baseline conditions in close proximity to the anaerobic IRZ and downgradient flow path. The highest dissolved manganese concentrations are observed in close proximity to the injection well network at monitoring well TW-1 (7.4 mg/l) and slightly downgradient at GMMW-6 (8.7 mg/l). The concentration of dissolved manganese at downgradient monitoring well GMMW-2 (1.5 mg/l) is similar to the baseline data from GMMW-5. The presence of elevated dissolved manganese is an indicator of reducing conditions.
- Methane concentrations remained elevated and significantly higher when compared to baseline conditions in close proximity to the anaerobic IRZ and downgradient flow path. The presence of methane at elevated concentrations is an indicator of strongly reducing conditions. However, methane concentrations are decreasing when comparing the analytical results from the March 2013 sampling event to the September 2012 sampling event at monitoring wells GMMW-5, GMMW-6, and TW-1. These data indicate that the groundwater geochemistry is beginning to shift from strongly to mild or moderately reducing conditions in wells closest to the injection well network.
- Ethene and/or ethane were detected at elevated concentrations at all monitoring
 wells located in close proximity to the anaerobic IRZ. As referenced in Section 5,
 the concentration of PCE, TCE, cis-1,2-DCE, and VC remain stable to decreasing.



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When combined with geochemical data, the results indicate that enhanced natural attenuation continue to occur through an anaerobic biologically mediated pathway.

• The concentration of TOC within injection and monitoring wells located in the vicinity of the injection network (e.g., GMMW-5, TW-1, IW-3, IW-8, and IW-13) decreased during the reporting period and ranged from below the limits of detection (TW-1) to 65.9 mg/L (IW-8) during the March 2013 sampling event. The data indicate that TOC remains at concentrations appropriate to support reductive dechlorination, but is limited to the general vicinity of the injection wells.

An evaluation of groundwater quality relative to shutdown of the extraction system will be completed during the next reporting period based upon the sampling results from the shut down recovery wells (GMPW-3, GMPW-4 and GMPW-5) and nearby monitoring wells (i.e., PW-3, PW-4, and W-18).

Based on quarterly site inspections of the presence of springs since the beginning of the pilot test, no trend in spring conditions has been discerned. A description and evaluation of spring water and sediment quality relative to the discontinuation pilot test is provided in Sections 6 and 7, respectively.

6. Spring Water Quality

The embankment of the North Stream was inspected for springs during the OM&M site visits on December 19, 2012 and March 28, 2013. During the December 19 inspection, no spring water was observed around the SP-4 area. Minor iron hydroxide staining was observed around the SP-2 and SP-4 area, with a higher degree of staining observed at the SP-3 area. During the March 28, 2013 inspection, spring water and iron hydroxide staining was observed in the SP-2 and SP-3 areas, with the SP-3 area being the most highly impacted with iron hydroxide staining. Minor iron staining was also observed in the SP-4 area. These observations have been generally consistent with conditions prior to the beginning of the pilot test.

Spring water samples were collected at the SP-2, SP-3 and SP-4 locations during the March 28, 2013 inspection. Spring water quality analytical results are summarized in Table 5. As shown in Table 5, spring water at the SP-2 location was non-detect for VOCs and consistent with the baseline round of monitoring data (ARCADIS of New York Inc. 2012). TVOC concentrations decreased at the SP-3 spring water location when compared to the previous rounds; however, several VOCs were detected at concentrations above NYSDEC Part 703 Water Quality Standards (WQS). Spring



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water at the SP-4 location exhibited higher concentrations of select VOCs when compared to previous rounds and historical data and several VOCs were also detected at concentrations above the NYSDEC WQS. Despite the presence of VOCs in spring water, non-detect to trace concentrations of VOCs are present in the surface water. These data continue to demonstrate that VOCs detected in the spring water are not adversely impacting surface water quality in the North Stream.

7. Sediment Quality

In conjunction with the spring water sampling effort in March 28, 2013, a sediment sample was collected within the North Stream in the vicinity of SP-3. Sediment quality analytical results are summarized in Table 6. As shown in Table 6, the sediment sample (SP-3C-SED) collected during the reporting period has metals concentrations that are generally consistent with the background sediment sample (SP-2-SED [opposite bank]), with the exception of significantly higher manganese concentrations. With respect to the NYSDEC Freshwater Sediment Screening Values, concentrations of arsenic, copper, iron, and nickel were detected below the Severe Effect Level (SEL) during the reporting period, but slightly higher than the Lowest Effect Level (LEL). The concentration of manganese of 1,140 mg/kg marginally exceeded the SEL screening criteria of 1,100 mg/kg.

The metals results for SP-3C-SED were also evaluated relative to Table 1a of the NYSDEC Draft Screening and Assessment of Contaminated Sediment document (NYSDEC 2013), which characterizes freshwater sediment as either Class A (low risk to aquatic life), Class B (slightly to moderately contaminated and additional testing is required to evaluate the potential risks to aquatic life, and Class C (sediments are considered to be highly contaminated and likely to pose a risk to aquatic life). The metals concentrations exhibited at the SP-3C-SED location fall under the Class A designation, with the exception of two metals that only slightly exceed the limits of the Class A designation. Specifically, arsenic exhibited a concentration of 10.2 mg/kg (with a Class A limit of < 10 mg/kg) and the nickel concentration was 23.0 mg/kg (with a Class A limit of < 23 mg/kg).

8. Surface Water Quality

Surface water quality analytical results are summarized in Table 4. As shown in Table 4, surface water quality remained consistent when compared to historical data. Specifically, the TVOC concentrations at the F-6, SW-2, and SW-3 sampling locations were below the limits of detection. The TVOC concentration at the SW-4 sampling



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location was 0.49 ug/L. The metals concentrations at the F-6, SW-3 and SW-4 sampling locations were also consistent with upgradient sample SW-2. These data indicate that surface water quality is not being adversely impacted by the landfill.

9. Spring Water Remediation System Performance

SP-5 Spring Water Remediation System OM&M was conducted on December 19, 2012 and March 28, 2013 in accordance with the LTM Plan Addendum for Spring Water Remediation Systems (ARCADIS G&M, Inc. 2003). SP-5 Spring Water Remediation System analytical results for this reporting period are provided in Table 7. As shown in Table 7, all effluent VOCs were treated to below their respective BPJ limits via the LPGAC; however, effluent TVOC analytical data (6.4 μ g/L in December 2012 and 26.57 μ g/L in March 2013) indicate that the LPGAC has achieved breakthrough and may require replacement. Influent TVOC concentrations remained stable when compared to September 2012 analytical data.

Table 8 contains the SP-5 spring water remediation system operating parameters recorded during the reporting period. As shown in Table 8, approximately 256,341 gallons of spring water was treated and approximately 0.08 lbs of mass was recovered during the reporting period. An estimated 3,941,582 gallons of spring water has been treated and an estimated 2.0 lbs of VOC mass has been recovered since system startup.

10. Conclusions

Based on the data obtained from the reporting period monitoring, ARCADIS concludes the following:

- Water level measurements in the project area (i.e., adjacent to the landfill western perimeter) and site-wide in the March 2013 round were consistent with previous rounds. The groundwater flow direction in the project area is toward the southwest from the western perimeter of the landfill. The groundwater flow direction in areas further to the east of the project area is toward the south/southwest.
- The concentration of VOCs remained stabled to decreasing during the reporting period when compared with historical data.
- Enhanced natural attenuation mechanisms (e.g., completed reductive dechlorination completed through a biologically mediated pathway) continue to



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degrade chlorinated VOCs within the discontinuation pilot test area despite the discontinuation of carbon injections as evidenced by stable to decreasing VOC concentrations and elevated ethene and/or ethane.

- The presence of elevated concentrations of reduced forms of alternate electron acceptors (e.g., dissolved iron, dissolved manganese, and dissolved methane) indicate that the groundwater geochemistry was strongly anaerobic during the reporting period. However, the concentration of methane declined at monitoring wells located closest to the injection well network which indicate that the geochemistry is transitioning from strongly anaerobic to mildly or moderately anaerobic.
- The concentration of TOC within injection and monitoring wells decreased during
 the reporting period and ranged from below the limits of detection (TW-1) to 65.9
 mg/L (IW-8) during the March 2013 sampling event. The data indicate that TOC
 remains at concentrations appropriate to support reductive dechlorination, but is
 limited to the general vicinity of the injection wells.
- There have not been any discernible trends in the appearance of spring areas thus far relative to the implementation of the pilot test.
- VOC and metals concentrations in surface water continue to be low or non-detect and consistent with historical data, despite the presence of VOCs and metals in the spring water at concentrations above NYSDEC WQS.
- The sediment sample collected during the reporting period exhibited similar concentrations when compared with previous rounds, and these concentrations are generally consistent with the background sediment sample (SP-2-SED [opposite bank]) with the exception of manganese. The results indicate that the sediment is generally categorized as Class A (low risk to aquatic life).

11. Recommendations

The following recommendations are made for this reporting period:

 Continue the IRZ Discontinuation Pilot Test and evaluate the resultant response on geochemical conditions in groundwater, volatile organic compound (VOC) concentration trends, and groundwater / surface water interactions.



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- Continue to inspect the former spring locations and the embankment of the North Stream.
- Collect a background sediment sample upstream of the SP-2 area to confirm background concentrations for the full suite of metals.

12. Project Schedule

Groundwater environmental effectiveness monitoring is scheduled to be conducted for Operational Year 12 on the quarterly schedule set forth in Table 4 of the discontinuation pilot test (ARCADIS of New York Inc. 2012). OM&M of the ARI and PT systems is temporarily discontinued as part of the IRZ Discontinuation Pilot Test Work Plan and will be restarted at the completion of the pilot test, or sooner if groundwater quality data indicates restart of the systems is necessary for the protection of public health or the environment.



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13. References

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- ARCADIS G&M, Inc. 2003. Long-Term Monitoring Plan Addendum for Spring Water Remediation Systems, Colesville Landfill, Broome County, New York, NYSDEC Site 704010. November 3, 2003.
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- New York State Department of Environmental Conservation (NYSDEC) 1999.

 Technical Guidance for Screening Contaminated Sediments. January 25, 1999.
- New York State Department of Environmental Conservation (NYSDEC) 2013. Draft Screening and Assessment of Contaminated Sediment. Draft version 4.0, January 24, 2013



Tables



Table 1. Water-Level Measurements, Colesville Landfill, Broome County, New York.

Well Identification	MP Elevatior (feet above msl)	3/26/2013 Depth to Water (feet below MP)	3/26/2013 Water-Table Elevatior (feet above msl	MP Description
GMMW-2	1,030.95	37.03	993.92	Inner casing
GMMW-3	1,028.02	34.74	993.28	Inner casing
GMMW-4	1,042.90	46.14	996.76	Inner casing
GMMW-5	1,043.66	49.61	994.05	Inner casing
GMMW-6	1,033.56	38.92	994.64	Inner casing
GMMW-7	1,045.43	48.22	997.21	Inner casing
PW-1	976.23	14.63	961.60	Inner casing
PW-2	975.28	5.88	969.40	Inner casing
PW-3	988.92	11.91	977.01	Inner casing
PW-4	1,001.75	17.37	984.38	Inner casing
PW-5	986.12	0.5	985.62	Inner casing
PW-7	1,042.47	41.00	1,001.47	Inner casing
PW-10 ⁽¹⁾	1,049.29			Inner casing
PW-11	1,052.37	53.60	998.77	Inner casing
PW-13	1,072.41	62.59	1,009.82	Inner casing
V-5	1,051.41	52.74	998.67	Inner casing
V-6	1,050.38	50.97	999.41	Inner casing
V-7	1,049.12	43.47	1,005.65	Inner casing
V-13	1,053.43	46.50	1,006.93	Inner casing
V-14S	957.68	5.77	951.91	Inner casing
V-16S	990.33	9.31	981.02	Outer casing
V-17S	959.13	9.06	950.07	Inner casing
V-18	973.56	10.15	963.41	Inner casing
V-20S	952.88	8.45	944.43	Inner casing

1. Measurement not collected due to obstruction in well at 11.21 feet below ${\tt N}$

msl Mean sea level MP Measuring point -- Not measured



Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Colesville Landfill, Broome County, New York.

Constituents	Sample ID:	GMMW-2	GMMW-2	GMMW-2	GMMW-5
(units in ug/L)	Date:	9/19/2012	12/18/2012	3/27/2013	9/20/2012
1,1,1-Trichloroethane		1.6	1.2	1.4	<2.0
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<2.0
1,1,2-trichloro-1,2,2-trifluoroe	ethane	<1.0	<1.0	<1.0	<2.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<2.0
1,1-Dichloroethane		55	49	49	<2.0
I,1-Dichloroethene		<1.0	<1.0	<1.0	<2.0
,2,4-Trichlorobenzene		<1.0	<1.0	<1.0	<2.0
,2-Dibromo-3-chloropropan	е	<1.0	<1.0	<1.0	<2.0
,2-Dibromoethane		<1.0	<1.0	<1.0	<2.0
,2-Dichlorobenzene		<1.0	<1.0	<1.0	<2.0
,2-Dichloroethane		<1.0	0.37 J	<1.0	0.66 J
,2-Dichloropropane		<1.0	<1.0	<1.0	<2.0
,3-Dichlorobenzene		<1.0	<1.0	<1.0	<2.0
,4-Dichlorobenzene		<1.0	<1.0	<1.0	<2.0
P-Butanone		<10	<10	<10	<20
?-Hexanone		<5.0	<5.0	<5.0	<10
-Methyl-2-pentanone		<5.0	<5.0	<5.0	<10
cetone		<10	<10	<10	<20
Benzene		2.2	2.1	2.1	1.4 J
Bromodichloromethane		<1.0	<1.0	<1.0	<2.0
Bromoform		<1.0	<1.0	<1.0	<2.0
Bromomethane		<1.0	<1.0	<1.0	<2.0
Carbon Disulfide		<1.0	<1.0	<1.0	<2.0
Carbon Tetrachloride		<1.0	<1.0	<1.0	<2.0
Chlorobenzene		28	25	29	14
Chloroethane		30	14	18	86
Chloroform		<1.0	<1.0	<1.0	<2.0
Chloromethane		<1.0	<1.0	<1.0	<2.0
sis-1,2-Dichloroethene		24	20	27	<2.0
is-1,3-Dichloropropene		<1.0	<1.0	<1.0	<2.0
Cyclohexane		0.32 J	<1.0	0.53 J	1.9 J
Dibromochloromethane		<1.0	<1.0	<1.0	<2.0
Dichlorodifluoromethane		<1.0	<1.0	<1.0	<2.0
Ethylbenzene		<1.0	<1.0	<1.0	<2.0
sopropylbenzene		<1.0	<1.0	<1.0	<2.0
Methyl acetate		<1.0	<1.0	<1.0	<2.0
lethyl tert-butyl ether		<1.0	<1.0	<1.0	<2.0
Methylcyclohexane		<1.0	<1.0	<1.0	<2.0
Methylene Chloride		0.52 J	<1.0	<1.0	<2.0
Styrene		<1.0	<1.0	<1.0	<2.0
etrachloroethene		<1.0	<1.0	<1.0	<2.0
oluene		<1.0	<1.0	<1.0	18
ans-1,2-Dichloroethene		<1.0	<1.0	<1.0	<2.0
ans-1,3-Dichloropropene		<1.0	<1.0	<1.0	<2.0
richloroethene		16	13	14	<2.0
richlorofluoromethane		<1.0	<1.0	<1.0	<2.0
/inyl Chloride		6.5	6.1	6.2	<2.0 <2.0
(ylenes (total)		6.5 <2.0	6.1 <2.0	6.2 <2.0	<2.0 <4.0
.,		72.0	72.0		\-1.0



Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Colesville Landfill, Broome County, New York.

Constituents (units in ug/L)	Sample ID: Date:	GMMW-5 12/18/2012	GMMW-5 3/26/2013	GMMW-6 9/19/2012	GMMW-6 12/18/2012
1,1,1-Trichloroethane		<1.0	<1.0	<1.0	0.92 J
1,1,2,2-Tetrachloroethane		<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoro	ethane	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		<1.0	0.43 J	110 D	120 D
1,1-Dichloroethene		<1.0	<1.0	<1.0	<1.0
,2,4-Trichlorobenzene		<1.0	<1.0	<1.0	<1.0
,2-Dibromo-3-chloropropar	ne	<1.0	<1.0	<1.0	<1.0
,2-Dibromoethane	.0	<1.0	<1.0	<1.0	<1.0
,2-Dichlorobenzene		<1.0	<1.0	<1.0	<1.0
,2-Dichloroethane		0.21 J	<1.0	0.85 J	0.81 J
,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0
,3-Dichlorobenzene		<1.0	<1.0	<1.0	<1.0
,4-Dichlorobenzene		<1.0	<1.0	<1.0	<1.0
2-Butanone		<10	<10	<10	<10
2-Butanone 2-Hexanone		<5.0	<5.0	<5.0	<5.0
I-Methyl-2-pentanone		<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0
		<10	<10	<10 B	<10
Acetone Benzene		0.69 J	<1.0	5.9	5.2
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0
Bromoform		<1.0	<1.0	<1.0	<1.0
Bromomethane		<1.0	<1.0	<1.0	<1.0
Carbon Disulfide		<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride		<1.0	<1.0	<1.0	<1.0
Chlorobenzene		10	4.2 J	26	22
Chloroethane		27	29	240 D	140 D
Chloroform		<1.0	<1.0	<1.0	<1.0
Chloromethane		<1.0	<1.0	<1.0	<1.0
sis-1,2-Dichloroethene		<1.0	<1.0	9.6	8.3
sis-1,3-Dichloropropene		<1.0	<1.0	<1.0	<1.0
Cyclohexane		0.30 J	<1.0	<1.0	2.9
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane		<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	0.89 J	<1.0
sopropylbenzene		<1.0	<1.0	<1.0	<1.0
Methyl acetate		<1.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether		<1.0	<1.0	<1.0	<1.0
Methylcyclohexane		<1.0	<1.0	<1.0	<1.0
Methylene Chloride		<1.0	<1.0	3.9	3.2
Styrene		<1.0	<1.0	<1.0	<1.0
etrachloroethene		<1.0	<1.0	<1.0	<1.0
oluene		2.7	<1.0	2.8	2.1
ans-1,2-Dichloroethene		<1.0	<1.0	0.93 J	<1.0
rans-1,3-Dichloropropene		<1.0	<1.0	<1.0	<1.0
richloroethene		<1.0	0.49 J	3.3	7.1
richlorofluoromethane		<1.0	<1.0	<1.0	<1.0
/inyl Chloride		<1.0	<1.0	11	7.8
(ylenes (total)		1.6 J	<1.0	1.7 J	1.2 J
Total VOCs		43 J	34 J	417 DJ	322 DJ



Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Colesville Landfill, Broome County, New York.

	Sample ID:	GMMW-6	PW-4	PW-4	PW-4
(units in ug/L)	Date:	3/26/2013	9/19/2012	12/18/2012	3/26/2013
1,1,1-Trichloroethane		<2.0	6.0	5.8	4.5
1,1,2,2-Tetrachloroethane		<2.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroetha	ane	<2.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<2.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		110 J	9.7	7.7	4.8
1,1-Dichloroethene		<2.0	<1.0	0.30 J	<1.0
1,2,4-Trichlorobenzene		<2.0	<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane		<2.0	<1.0	<1.0	<1.0
1,2-Dibromoethane		<2.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene		<2.0	<1.0	<1.0	<1.0
1,2-Dichloroethane		<2.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<2.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene		<2.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene		<2.0	<1.0	<1.0	<1.0
2-Butanone		<20	<10	<10	<10
2-Hexanone		<10	<5.0	<5.0	<5.0
4-Methyl-2-pentanone		<10	<5.0	<5.0	<5.0
Acetone		<20	<10	<10	<10
Benzene		5.0	<1.0	<1.0	<1.0
Bromodichloromethane		<2.0	<1.0	<1.0	<1.0
Bromoform		<2.0	<1.0	<1.0	<1.0
Bromomethane		<2.0	<1.0	<1.0	<1.0
Carbon Disulfide		<2.0	<1.0	<1.0	<1.0
Carbon Tetrachloride		<2.0	<1.0	<1.0	<1.0
Chlorobenzene		26	<1.0	<1.0	<1.0
Chloroethane		150	3.5	1.0	<1.0
Chloroform		<2.0	0.56 J	0.53 J	<1.0
Chloromethane		<2.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene		13	5.2	4.4	2.9
cis-1,3-Dichloropropene		<2.0	<1.0	<1.0	<1.0
Cyclohexane		<2.0	<1.0	0.69 J	<1.0
Dibromochloromethane		<2.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane		<2.0	1.8	<1.0	<1.0
Ethylbenzene		<2.0	<1.0	<1.0	<1.0
Isopropylbenzene		<2.0	<1.0	<1.0	<1.0
Methyl acetate		<2.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether		<2.0	<1.0	<1.0	<1.0
Methylcyclohexane		<2.0	<1.0	<1.0	<1.0
Methylene Chloride		4.6	<1.0	<1.0	<1.0
Styrene		<2.0	<1.0	<1.0	<1.0
Tetrachloroethene		<2.0	<1.0	<1.0	<1.0
Toluene		<2.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene		<2.0	<1.0	<1.0	<1.0 <1.0
rans-1,3-Dichloropropene		<2.0	<1.0	<1.0	<1.0
Trichloroethene		<2.0 5.3	<1.0 15	<1.0 14	<1.0 10
Trichloroethene Trichlorofluoromethane		5.3 <2.0	<1.0	<1.0	<1.0
Vinyl Chloride		<2.0 7.7	<1.0 <1.0	<1.0	<1.0 <1.0
Xylenes (total)		<4.0	<1.0 <2.0	<1.0 <2.0	<1.0 <2.0
ryionos (total)		\7.0	\Z.U	\ 2.0	\2.0



Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Colesville Landfill, Broome County, New York.

Constituents (units in ug/L)	Sample ID: Date:	PW-7 9/19/2012	PW-7 3/27/2013	TW-1 9/20/2012	TW-1 12/18/2012
1,1,1-Trichloroethane		<1.0	<2.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane		<1.0	<2.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoro	ethane	<1.0	<2.0	<1.0	<1.0
1,1,2-Trichloroethane		0.51 J	0.49 J	<1.0	<1.0
1,1-Dichloroethane		160 D	180	<1.0	<1.0
1,1-Dichloroethene		0.38 J	<2.0	<1.0	<1.0
1,2,4-Trichlorobenzene		<1.0	<2.0	<1.0	<1.0
1,2-Dibromo-3-chloropropar	ne	<1.0	<2.0	<1.0	<1.0
,2-Dibromoethane		<1.0	<2.0	<1.0	<1.0
,2-Dichlorobenzene		<1.0	<2.0	<1.0	<1.0
,2-Dichloroethane		1.1	<2.0	<1.0	0.25 J
,2-Dichloropropane		<1.0	<2.0	<1.0	<1.0
,3-Dichlorobenzene		<1.0	<2.0	<1.0	<1.0
,4-Dichlorobenzene		<1.0	<2.0	<1.0	<1.0
2-Butanone		<10	<20	2.9 J	<10
-Hexanone		<5.0	<10	<5.0	<5.0
-Methyl-2-pentanone		<5.0	<10	<5.0	<5.0
Acetone		<10	<20	<10	<10
Benzene		1.1	1.9 J	2.2	3.1
Bromodichloromethane		<1.0	<2.0	<1.0	<1.0
Bromoform		<1.0	<2.0	<1.0	<1.0
Bromomethane		<1.0	<2.0	<1.0	<1.0
Carbon Disulfide		<1.0	<2.0	<1.0	<1.0
Carbon Tetrachloride		<1.0	<2.0	<1.0	<1.0
Chlorobenzene		34	15	7.7	5.5
Chloroethane		71	81	100 D	63
Chloroform		<1.0	<2.0	<1.0	<1.0
Chloromethane		<1.0	<2.0	<1.0	<1.0
cis-1,2-Dichloroethene		75	79	1.8	1.7
sis-1,3-Dichloropropene		<1.0	<2.0	<1.0	<1.0
Cyclohexane		<1.0	<2.0	7.7	1.4
Dibromochloromethane		<1.0	<2.0	<1.0	<1.0
Dichlorodifluoromethane		<1.0	<2.0	<1.0	<1.0
Ethylbenzene		13	<2.0	<1.0	<1.0
sopropylbenzene		1.3	<2.0	<1.0	<1.0
Methyl acetate		<1.0	<2.0	<1.0	<1.0
Methyl tert-butyl ether		<1.0	<2.0	<1.0	<1.0
Methylcyclohexane		<1.0	<2.0 <2.0	<1.0	<1.0 <1.0
Methylene Chloride		0.68 J	2.0	<1.0	<1.0 <1.0
Styrene		<1.0	2.0 <2.0	<1.0	<1.0 <1.0
etrachloroethene		0.52 J	<2.0	<1.0	<1.0 <1.0
oluene					
		<1.0	<2.0	6.1	0.85 J
rans-1,2-Dichloroethene		<1.0	<2.0	<1.0	<1.0
rans-1,3-Dichloropropene		<1.0	<2.0	<1.0	<1.0
richloroethene		11	9.4	1.4	0.81 J
richlorofluoromethane		<1.0	<2.0	<1.0	<1.0
/inyl Chloride (ylenes (total)		44 0.87 J	31 <4.0	1.6 <2.0	1.1 <2.0
Total VOCs		414 DJ	400 J	131 DJ	78 J



Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Colesville Landfill, Broome County, New York.

Constituents	Sample ID:	TW-1
(units in ug/L)	Date:	3/27/2013
1,1,1-Trichloroethane		<1.0
1,1,2,2-Tetrachloroethane		<1.0
1,1,2-trichloro-1,2,2-trifluoroe	ethane	<1.0
1,1,2-Trichloroethane		<1.0
1,1-Dichloroethane		<1.0
1,1-Dichloroethene		<1.0
1,2,4-Trichlorobenzene		<1.0
1,2-Dibromo-3-chloropropane	Α	<1.0
1,2-Dibromoethane	0	<1.0
1,2-Dichlorobenzene		<1.0
1,2-Dichloroethane		<1.0
1,2-Dichloropropane		<1.0
1,3-Dichlorobenzene		<1.0
1,4-Dichlorobenzene		<1.0
•		<1.0
2-Butanone		
2-Hexanone		<5.0
4-Methyl-2-pentanone		<5.0
Acetone		<10
Benzene		3.6
Bromodichloromethane		<1.0
Bromoform		<1.0
Bromomethane		<1.0
Carbon Disulfide		<1.0
Carbon Tetrachloride		<1.0
Chlorobenzene		4.3
Chloroethane		70
Chloroform		<1.0
Chloromethane		<1.0
cis-1,2-Dichloroethene		1.4
cis-1,3-Dichloropropene		<1.0
Cyclohexane		<1.0
Dibromochloromethane		<1.0
Dichlorodifluoromethane		<1.0
Ethylbenzene		<1.0
Isopropylbenzene		<1.0
Methyl acetate		<1.0
Methyl tert-butyl ether		<1.0
Methylcyclohexane		<1.0
Methylene Chloride		<1.0
Styrene		<1.0
Tetrachloroethene		<1.0
Toluene		0.75 J
trans-1,2-Dichloroethene		<1.0
trans-1,3-Dichloropropene		<1.0
Trichloroethene		0.55 J
Trichlorofluoromethane		0.55 J <1.0
Vinyl Chloride		<1.0 0.92 J
Xylenes (total)		0.92 J 1.5 J
Total VOCs		83 J



Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Colesville Landfill, Broome County, New York.

Notes and Abbreviations:

Bold constituent detected above method detection limit.

B Compound considered non-detect at the listed value due to associated blank contamination.

D Concentration is based on a diluted sample analysis.

J Estimated value.
ug/L Micrograms per liter.

VOCs Volatile organic compounds.
< Analyte below detection limit.



Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Colesville Landfill, Broome County, New York.

Parameters		Typical Baseline Values for Discontinuation Pilot Test Area (1) Sample ID: Date:	GMMW-2 9/19/2012	GMMW-2 12/18/2012	GMMW-2 3/27/2013	GMMW-5 9/20/2012	GMMW-5 12/18/2012	GMMW-5 3/26/2013
GENERAL CHEMISTR	<u>Units</u> Y							
Total Organic Carbon	mg/L	6.6	<1.0	1.5	2.6	19.2	17.3	12.4
FIELD PARAMETERS								
pH Specific Conductance Temperature	Standard units mmhos/cm deg C	6.88 0.420 13	6.36 0.560 11.8	6.50 0.622 9.9	6.83 0.619 10.4	6.54 0.710 14.2	6.42 0.299 9.9	6.46 0.336 9.3
DISSOLVED GASES Ethane Ethene Methane	ng/L ng/L ug/L	2,590 7,700 0.45	910 3,600 14,000	380 3,000 13,000	420 1,900 12,000	8,900 35 18,000	7,900 53 12,000	8,300 150 4,500
MISCELLANEOUS								
Ferrous Iron Iron Iron (Filtered) Manganese	mg/L mg/L mg/L mg/L	0.27 0.493 0.455 2.15	 	 	 0.200 <0.05 1.50	 	 	 19.4 J 23.8 J 1.20 J
Manganese (Filtered) Nitrate	mg/L mg/L	1.79 0.632	 	 	1.5 0.039 J	 	 	1.6 J 0.051
Nitrite Sulfate	mg/L mg/L	0.026 4.38		 	R 4.7 J			R 3.9 J

Bold constituent detected above method detection limit.

B Compound considered non-detect at the listed value due to associated blank contamination.

deg C Degrees Celsius.

R The sample results are rejected; due to significant quality control problems, the analysis is invalid and provides no information as to whether the compound

is present or not.

J Estimated value.
mg/L Milligrams per liter.
mmhos/cm Millimhos per centimeter.

mV Millivolts.

^{1.} Value represent data from monitoring well GMMW-5 collected on December 7, 1998.



Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Colesville Landfill, Broome County, New York.

Parameters		Typical Baseline Values for Discontinuation Pilot Test Area (1) Sample ID: Date:	GMMW-6 9/19/2012	GMMW-6 12/18/2012	GMMW-6 3/26/2013	PW-4 9/19/2012	PW-4 12/18/2012	PW-4 3/26/2013
GENERAL CHEMISTR	<u>Units</u> Y							
Total Organic Carbon	mg/L	6.6	2.6	3.1	3.8	<1.0	<1.0	2.8
FIELD PARAMETERS								
pH Specific Conductance Temperature	Standard units mmhos/cm deg C	6.88 0.420 13	6.63 0.930 12.0	6.58 0.858 9.9	6.72 0.826 9.0	7.01 0.330 17.2	6.73 0.531 10.9	6.39 0.541 9.0
DISSOLVED GASES								
Ethane Ethene Methane	ng/L ng/L ug/L	2,590 7,700 0.45	7,800 5,100 13,000	16,000 12,000 9,000	11,000 15,000 4,600	11 J 27 0.13	98 22 J 3.0	33 47 1.1
MISCELLANEOUS								
Ferrous Iron Iron	mg/L mg/L	0.27 0.493			 17.8			
Iron (Filtered)	mg/L	0.455			14.8			
Manganese (Filtered)	mg/L	2.15			8.50 8.7			
Manganese (Filtered) Nitrate	mg/L mg/L	1.79 0.632			8.7 R			
Nitrite	mg/L	0.032	 	 	R	 	 	
Sulfate	mg/L	4.38			13.4 J			

Bold constituent detected above method detection limit.

B Compound considered non-detect at the listed value due to associated blank contamination.

deg C Degrees Celsius.

R The sample results are rejected; due to significant quality control problems, the analysis is invalid and provides no information as to whether the compound

is present or not.

J Estimated value.
mg/L Milligrams per liter.
mmhos/cm Millimhos per centimeter.

mV Millivolts.

^{1.} Value represent data from monitoring well GMMW-5 collected on December 7, 1998.



Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Colesville Landfill, Broome County, New York.

Parameters		Typical Baseline Values for Discontinuation Sample ID: Pilot Test Area (1) Date:	PW-7 9/19/2012	PW-7 3/27/2013	TW-1 9/20/2012	TW-1 12/18/2012	TW-1 3/27/2013	IW-3 9/20/2012
GENERAL CHEMISTR	<u>Units</u>							
Total Organic Carbon	<u>·</u> mg/L	6.6		<1.0	14.8	24.5	<1.0	7.8
FIELD PARAMETERS	J							
pH Specific Conductance Temperature	Standard units mmhos/cm deg C	6.88 0.420 13	6.12 0.360 14.3	6.35 0.306 11.2	6.37 0.940 14.4	6.34 1.099 10.6	6.71 1.137 9.1	6.29 0.740 14.4
DISSOLVED GASES								
Ethane Ethene Methane	ng/L ng/L ug/L	2,590 7,700 0.45	 	260 2,000 500	4,900 700 10,000	6,500 260 9,500	4,100 400 7,400	
MISCELLANEOUS								
Ferrous Iron Iron Iron (Filtered) Manganese Manganese (Filtered)	mg/L mg/L mg/L mg/L mg/L	0.27 0.493 0.455 2.15 1.79	 	 189 20.5 7.5 7.2	 	 	 87.9 87.3 5.20 J 7.4 J	
Nitrate	mg/L	0.632		0.55 J			0.11 J	
Nitrite Sulfate	mg/L mg/L	0.026 4.38		R 18.4 J	 	 	R 24.1 J	

Bold constituent detected above method detection limit.

B Compound considered non-detect at the listed value due to associated blank contamination.

deg C Degrees Celsius.

R The sample results are rejected; due to significant quality control problems, the analysis is invalid and provides no information as to whether the compound

is present or not.

J Estimated value.
mg/L Milligrams per liter.
mmhos/cm Millimhos per centimeter.

mV Millivolts.

^{1.} Value represent data from monitoring well GMMW-5 collected on December 7, 1998.



Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Colesville Landfill, Broome County, New York.

Parameters		Typical Baseline Values for Discontinuation Pilot Test Area (1) Sample ID: Date:	IW-3 12/18/2012	IW-3 3/28/2013	IW-8 12/19/2012	IW-8 9/20/2012	IW-8 3/27/2013	IW-13 9/20/2012
GENERAL CHEMISTR	<u>Units</u> Y							
Total Organic Carbon	mg/L	6.6	9.1	6.4	113	328	65.9	97.1
FIELD PARAMETERS								
pH	Standard units	6.88	6.13	6.68	6.24	5.92	6.65	6.16
Specific Conductance	mmhos/cm	0.420		0.600		1.380	1.048	1.030
Temperature	deg C	13		8.1		16.6	10.4	15.7
DISSOLVED GASES								
Ethane	ng/L	2,590						
Ethene	ng/L	7,700						
Methane	ug/L	0.45						
MISCELLANEOUS								
Ferrous Iron	mg/L	0.27						
lron	mg/L	0.493						
Iron (Filtered)	mg/L	0.455						
Manganese	mg/L	2.15						
Manganese (Filtered)	mg/L	1.79						
Vitrate	mg/L	0.632						
Nitrite	mg/L	0.026						
Sulfate	mg/L	4.38						

Bold constituent detected above method detection limit.

B Compound considered non-detect at the listed value due to associated blank contamination.

deg C Degrees Celsius.

R The sample results are rejected; due to significant quality control problems, the analysis is invalid and provides no information as to whether the compound

is present or not.

J Estimated value.

mg/L Milligrams per liter.

mmhos/cm Millimhos per centimeter.

mV Millivolts.

^{1.} Value represent data from monitoring well GMMW-5 collected on December 7, 1998.



Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Colesville Landfill, Broome County, New York.

		Typical Baseline		
Parameters		Values for Discontinuation Sample ID Pilot Test Area (1) Date		IW-13 3/28/2013
		Thot Toot Alloa	. 12/10/2012	0,20,2010
	<u>Units</u>			
GENERAL CHEMISTRY	<u>(</u>			
Total Organic Carbon	mg/L	6.6	61.1	46.2
FIELD PARAMETERS				
рН	Standard units	6.88	6.28	6.66
Specific Conductance	mmhos/cm	0.420		0.921
Temperature	deg C	13		10.3
DISSOLVED GASES				
Ethane	ng/L	2,590		
Ethene	ng/L	7,700		
Methane	ug/L	0.45		
MISCELLANEOUS				
Ferrous Iron	mg/L	0.27		
Iron	mg/L	0.493		
Iron (Filtered)	mg/L	0.455		
Manganese Manganese (Filtered)	mg/L	2.15 1.79		
Nitrate	mg/L mg/L	0.632		
Nitrite	mg/L	0.026		
Sulfate	mg/L	4.38		

Bold constituent detected above method detection limit.

B Compound considered non-detect at the listed value due to associated blank contamination.

deg C Degrees Celsius.

R The sample results are rejected; due to significant quality control problems, the analysis is invalid and provides no information as to whether the compound

is present or not.

Estimated value.

Milligrams per liter.

mmhos/cm Millimhos per centimeter.

mV Millivolts.

mg/L

^{1.} Value represent data from monitoring well GMMW-5 collected on December 7, 1998.



Table 4. Concentrations of Volatile Organic Compounds and Selected Metals Detected in Surface Water, Colesville Landfill, Broome County, New York.

Sample ID: Constituents Date:		SW-2 3/28/2013	SW-3 3/28/2013	SW-4 3/28/2013	
Volatile organic compounds (VOCs) (Units in	ı ug/L)				
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0	
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0	
1,1,2-trichloro-1,2,2-trifluoroethane	<1.0	<1.0	<1.0	<1.0	
1,1,2-Trichloroethane	<1.0	<1.0	<1.0	<1.0	
I,1-Dichloroethane	<1.0	<1.0	<1.0	0.49 J	
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0	
,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1.0	
,2-Dibromo-3-chloropropane	<1.0	<1.0	<1.0	<1.0	
1,2-Dibromoethane	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0	
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0	
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0	
2-Butanone	<10	<10	<10	<10	
2-Hexanone	<5.0	<5.0	<5.0	<5.0	
4-Methyl-2-pentanone	<5.0	<5.0	<5.0	<5.0	
Acetone	<10	<10	<10	<10	
Benzene	<1.0	<1.0	<1.0	<1.0	
Bromodichloromethane	<1.0	<1.0	<1.0	<1.0	
Bromoform	<1.0	<1.0	<1.0	<1.0	
Bromomethane	<1.0	<1.0	<1.0	<1.0	
Carbon Disulfide	<1.0	<1.0	<1.0	<1.0	
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1.0	
Chlorobenzene	<1.0	<1.0	<1.0	<1.0	
Chloroethane	<1.0	<1.0	<1.0	<1.0	
Chloroform	<1.0	<1.0	<1.0	<1.0	
Chloromethane	<1.0	<1.0	<1.0	<1.0	
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0	
Cyclohexane	<1.0	<1.0	<1.0	<1.0	
Dibromochloromethane	<1.0	<1.0	<1.0	<1.0	
Dichlorodifluoromethane	<1.0	<1.0	<1.0	<1.0	
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	
sopropylbenzene	<1.0	<1.0	<1.0	<1.0	
Methyl acetate	<1.0	<1.0	<1.0	<1.0	
Methyl tert-butyl ether	<1.0	<1.0	<1.0	<1.0	
Methylcyclohexane	<1.0	<1.0	<1.0	<1.0	
Methylene Chloride	<1.0	<1.0	<1.0	<1.0	
Styrene	<1.0	<1.0	<1.0	<1.0	
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0	
Γoluene	<1.0	<1.0	<1.0	<1.0	
rans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0	
rans-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0	
Trichloroethene	<1.0	<1.0	<1.0	<1.0	
Trichlorofluoromethane	<1.0	<1.0	<1.0	<1.0	
Vinyl Chloride	<1.0	<1.0	<1.0	<1.0	
Kylenes (total)	<2.0	<2.0	<2.0	<2.0	
Fotal VOCs	NA	NA	NA	0.49 J	
Metals (Units in mg/L)					
Aluminum	0.077 J	0.13 J	0.11 J	0.085 J	
Antimony	<0.020	<0.020	<0.020	<0.020	
Arsenic	<0.010	<0.010	<0.010	<0.010	
Barium	0.0066	0.0067	0.0065	0.0066	
Beryllium	<0.0020	<0.0020	<0.0020	<0.0020	
Cadmium	<0.0010	<0.0010	<0.0010	<0.0010	
Calcium	8.7	5.3	7.2	7.9	

See notes on last page.



Table 4. Concentrations of Volatile Organic Compounds and Selected Metals Detected in Surface Water, Colesville Landfill, Broome County, New York.

Constituents	Sample ID: Date:	F-6 3/28/2013	SW-2 3/28/2013	SW-3 3/28/2013	SW-4 3/28/2013
Constituents	Date.	3/20/2013	3/20/2013	3/20/2013	3/20/2013
Metals (Units in mg/L)	(Continued)				
Chromium		< 0.0040	<0.0040	< 0.0040	<0.0040
Cobalt		< 0.0040	< 0.0040	< 0.0040	< 0.0040
Copper		< 0.010	< 0.010	< 0.010	< 0.010
ron		0.16	0.16	0.13	0.18
Lead		< 0.0050	< 0.0050	< 0.0050	< 0.0050
Magnesium		2.4	1.9	2.2	2.3
langanese		0.064	0.025	0.021	0.061
ercury		< 0.00020	< 0.00020	<0.00020	< 0.00020
ickel		< 0.010	< 0.010	< 0.010	< 0.010
otassium		0.87	0.92	0.91	0.87
Selenium		<0.015	< 0.015	< 0.015	< 0.015
Silver		< 0.0030	< 0.0030	< 0.0030	< 0.0030
Sodium		5.1	4.9	5.0	5.0
hallium		<0.020	<0.020	<0.020	< 0.020
anadium		< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc		< 0.010	0.0016 J	<0.010	< 0.010

Bold constituent detected above method detection limit.

J Estimated value.
mg/L Milligrams per liter.
NA Not applicable.
ug/L Micrograms per liter.
< Analyte below detection limit.
-- Not analyzed or collected.



Table 5. Concentrations of Volatile Organic Compounds and Selected Metals Detected in Spring Water, Colesville Landfill, Broome County, New York.

Constituents (units in ug/L)	Sample ID: Date:	SP-2 7/13/2012	SP-2 3/28/2013	SP-3 7/13/2012	SP-3 3/28/2013	SP-4 9/20/2012	SP-4 3/28/2013
1	NYSDEC Part 703 WQS						
1,1,1-Trichloroethane	5	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	5	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane		<5.0 Q	<1.0	<5.0 Q	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	1	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<5.0	<1.0	76	41	1.8	14
1,1-Dichloroethene	5 5	<5.0	<1.0	<5.0 <5.0 Q	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene 1,2-Dibromo-3-chloropropane	o.04	<5.0 Q <5.0	<1.0 <1.0	<5.0 Q <5.0	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
1,2-Dibromoethane	0.0006	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	3	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	0.6	<5.0	<1.0	<5.0	<1.0	<1.0	0.51 J
1,2-Dichloropropane	1	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	3	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	3	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
2-Butanone	50	<10	<10	<10	<10	<10	<10
2-Hexanone	50	<10	<5.0	<10	<5.0	<5.0	<5.0
4-Methyl-2-pentanone	NA	<10	<5.0	<10	<5.0	<5.0	<5.0
Acetone	50	<10	<10	<10	<10	<10	<10
Benzene	10	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Bromodichloromethane	50	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Bromoform	50	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Bromomethane	5	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Carbon Disulfide	60	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	5 5	<5.0 Q	<1.0	<5.0 Q 42	<1.0	<1.0	<1.0
Chlorobenzene Chloroethane	5 5	<5.0 <5.0	<1.0 <1.0	18	3.5 7.0	<1.0 <1.0	4.0 55
	5 7			<5.0			
Chloroform Chloromethane	<i>7</i> 5	<5.0 <5.0 Q	<1.0 <1.0	<5.0 Q	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0
cis-1,2-Dichloroethene	5	<5.0 Q	<1.0	24 Q	14	<1.0	0.88 J
cis-1,3-Dichloropropene	0.4	<5.0 Q	<1.0	<5.0 Q	<1.0	<1.0	<1.0
Cyclohexane	NA	<5.0 Q	<1.0	<5.0 Q	<1.0	<1.0	<1.0
Dibromochloromethane	50	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	5	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Ethylbenzene	5	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
sopropylbenzene	5	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Methyl acetate	NA	<5.0 Q	<1.0	<5.0 Q	<1.0	<1.0	<1.0
Methyl tert-butyl ether	10	<5.0 Q	<1.0	<5.0 Q	<1.0	<1.0	<1.0
Methylcyclohexane	NA	<5.0 Q	<1.0	<5.0 Q	<1.0	<1.0	<1.0
Methylene Chloride	5	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Styrene	50	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
Tetrachloroethene	5	<5.0 Q	<1.0	<5.0 Q	<1.0	<1.0	<1.0
Toluene	6000	12	<1.0	<5.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	5	<5.0	<1.0	<5.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	0.4	<5.0 Q	<1.0	<5.0 Q	<1.0	<1.0	<1.0
Trichloroethene	5	<5.0	<1.0	7.0	4.8	<1.0	0.78 J
Trichlorofluoromethane Vinyl Chloride	0.4 2	<5.0 Q	<1.0	<5.0 Q	<1.0 2.1	<1.0	<1.0
Xylenes (total)	5	<5.0 <5.0	<1.0 <2.0	21 <5.0	<2.0	<1.0 <2.0	<1.0 <2.0
Total VOCs	NA	12	NA	188	72	1.8	75 J
Metals (Units in mg/L)							
Aluminum	0.100	NA	0.39	NA	<0.20		<0.20
Antimony	0.003	NA	<0.020	NA	<0.020		< 0.020
Arsenic	0.15	NA	<0.010	NA	<0.010		0.023
Barium	1	NA	0.0087	NA	0.015		0.065
Beryllium	0.003	NA	<0.0020	NA	<0.0020		< 0.0020
Cadmium	0.01	NA	< 0.0010	NA	< 0.0010		< 0.0010
Calcium	NA	NA	7.20	NA	21.3		61.8
Chromium	0.05	NA	<0.0040	< 0.0500	<0.0040		<0.0040
Cobalt	0.005	NA	< 0.0040	< 0.0500	0.0013 J		0.0012 J

See notes on last page.



Table 5. Concentrations of Volatile Organic Compounds and Selected Metals Detected in Spring Water, Colesville Landfill, Broome County, New York.

Constituents	Sample ID:	SP-2	SP-2	SP-3	SP-3	SP-4	SP-4	
(units in ug/L)	Date:	7/13/2012	3/28/2013	7/13/2012	3/28/2013	9/20/2012	3/28/2013	
	NYSDEC Part 703 WQS							

Metals (Units in mg/L) (Continued)

Copper	NA	NA	<0.010	NA	<0.010	 <0.010
Iron	0.3	NA	0.51	16.0	0.84	 7.1
Lead	0.025	NA	<0.0050	NA	<0.0050	 <0.0050
Magnesium	35	NA	2.0	7.00	5.0	 14.7
Manganese	0.3	NA	0.12	4.40	1.4	 4.7
Mercury	0.0000007	NA	<0.00020	NA	<0.00020	 <0.00020
Nickel	0.1	NA	< 0.010	NA	0.0019 J	 < 0.010
Potassium	NA	NA	0.75	NA	1.1	 1.3
Selenium	0.0046	NA	< 0.015	NA	< 0.015	 < 0.015
Silver	0.0001	NA	< 0.0030	< 0.0500	< 0.0030	 < 0.0030
Sodium	20	NA	4.5	NA	3.8	 9.4
Thallium	0.008	NA	< 0.020	NA	< 0.020	 < 0.020
Vanadium	0.014	NA	< 0.0050	< 0.300	< 0.0050	 < 0.0050
Zinc	0.066	NA	0.0023 J	NA	0.0020 J	 <0.010

Notes and Abbreviations:

Bold constituent detected above method detection limit.

Exceeds WQS.

J Estimated value.
mg/L Milligrams per liter.
NA Not applicable

VOCs Volatile organic compounds.
ug/L Micrograms per liter.
< Analyte below detection limit.
-- Not analyzed or collected.

Q Outyling QC recoveries were associated with this parameter, as noted in the Upsate Laboratories, Inc. analytical report.



Table 6. Concentrations of Metals Detected in Sediment Samples Associated with Springs, Colesville Landfill, Broome County, New York.

			Location ID: Sample ID: Date:	SED-2 SP-2-SED (Opposite Bank) 7/13/2012 (1)	SED-2 SP-2-SED 7/13/2012	SED-3 SP-3-SED 7/13/2012 (2)	SED-3 SP-3-SED (Outlet) 8/8/2012 (3)	SED-3 SP-3-SED (Stream Sediment) 8/8/2012 ⁽⁴⁾	SED-3 SP-3C-SED 3/28/2013 ⁽⁵
		water Sediment g Values ^a	Duto.	1710/2012	1710/2012	1710/2012	0/0/2012	0/0/2012	0/20/2010
	Lowest Effects Level (LEL)	Severe Effects Level (SEL)	NOAA SQuiRT values ^b						
Constituents									
Metals (Units in mg/kg)									
Aluminum	NA	NA	NA				9,000	8,100	9,360
Antimony	2	25	NA				<6.50	<5.60	<19.4
Arsenic	6	33	NA				16.0	14.0	10.2
Barium	NA	NA	NA				<190 Q	<170 Q	44.3
Beryllium	NA	NA	NA				<3.20	<2.80	0.39
Cadmium	0.6	9	NA				<3.20	<2.80	0.19 J
Calcium	NA	NA	NA				810	630	917
Chromium	26	110	NA	15.0 J	18.0 J	34.0 J	18.0 J	15.0 J	13.2
Cobalt	NA	NA	50+ ^c	<32.0	<32.0	<83.0	<32.0	<28.0	10.3
Copper	16	110	NA				21.0	19.0	18.9
Iron	20,000	40,000	NA	19,000 B	23,000 B	55,000 B	24,000	19,000	23,100
Lead	31	110	NA				12.0	19.0	14.1
Magnesium	NA	NA	NA	2,700	2,800	4,600	2,900	2,500	3,260
Manganese	460	1100	NA	300	1,200	10,000	640	490	1,140
Mercury	0.15	1.3	NA				<0.112	<0.0911	<0.026
Nickel	16	50	NA				17.0 QJ	15.0 QJ	23.0
Potassium	NA	NA	NA				730	490	793
Selenium	NA	NA	NA				<3.90 Q	<3.40 Q	0.60 J
Silver	1	2.2	NA	<32.0 Q	<32.0 Q	<83.0 Q	<32.0	<28.0	< 0.65
Sodium	NA	NA	NA				<320	<280	30.0 J
Thallium	NA	NA	NA				<3.90	<3.40	<7.8
Vanadium	NA	NA	NA	<190	<190	<500	<190	<170	13.0
Zinc	120	270	NA				47.0	45.0	59.6
<u>Miscellaneous</u>									
Percent Moisture (% by wt.)	NA	NA	NA	20.8	21.1	70	27.7	18.4	27.0

See acronyms and notes on the last page.



Table 6. Concentrations of Metals Detected in Sediment Samples Associated with Springs, Colesville Landfill, Broome County, New York.

Notes and Abbreviations:

3.

	1/1 1/1 1/1 1/05=0 /444	
2	Values obtained from NVSDEC 1000	Technical Guidance for Screening Contaminated Sediments.

b Values obtained from NOAAs Screening Quick Reference Tables (Buchman, MF. 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1,

Seattle, WA. Office of Response and Restoration Division, NOAA, 34 pp.)

c Value from Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario, Canada. Aug 1993. Value is Lowest Effects Level (LEL)

from Canadian Sediment Guidelines.

1. Background sediment sample collected by Broome County upstream and on the opposite bank from SP-2 spring sample location.

2. Sediment/iron oxide film composite sample collected by Broome County from the SP-3 spring sample location.

Sample collected by Broome County from the SP-3 spring outlet area in close proximity to the North Stream.

4. Sample collected by Broome County from North Stream sediment at the SP-3 spring area.

5. Sediment composite sample collected by ARCADIS from SP-3 spring sample location as part of the spring water and sediment monitoring program of the In-Situ Reactive Zone

Discontinuation Pilot Test.

Bold constituent detected above method detection limit.

B Analyte detected in the associated Method Blank.

J Analyte detected below qantitation limit.

mg/kg Milligrams per kilogram.

NA Not applicable.

Q Outlying QC recoveries were associates with this parameter.

Exceeds Lowest Effects Level.

Exceeds Severe Effects Level.

Analyte below detection limit.

Constituent not analyzed.



Table 7. Concentrations of Volatile Organic Compounds Detected in Aqueous Samples Collected from the SP-5 Spring Water Remediation System, Colesville Landfill, Broome County, New York.

Constituents	Model Technology Sample ID:	SP-5 INF.	SP-5 INF.	SP-5 INF.	SP-5 EFF.	SP-5 EFF.	SP-5 EFF
(units in ug/L)	BPJ Limits ^{1,2} Date:	9/20/2012	12/19/2012	3/28/2013	9/20/2012	12/19/2012	3/28/2013
VOCs							
1,1,1-Trichloroethane	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloro-1,2,2-trifluoroethane	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
,1-Dichloroethane	10	12	12	12	1.7	1.1	8.5
1,1-Dichloroethene	10-100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
,2-Dibromo-3-chloropropane	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
,2-Dichlorobenzene	10-50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
,2-Dichloroethane	10-100	0.33 J	0.32 J	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone	NA	<10	<10	<10	<10	<10	<10
2-Hexanone	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1-Methyl-2-pentanone	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	NA	<10	<10	<10	<10	<10	<10
Benzene	5	1.3	1.4	1.4	<1.0	<1.0	0.97 J
Bromodichloromethane	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	10-50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	10-25	20	17	19	<1.0	<1.0	15
Chloroethane	10	9.7	2.0	0.65 J	5.3	5.3	<1.0
Chloroform	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	10	1.6	1.5	0.97 J	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyclohexane	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
sopropylbenzene	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl acetate	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylcyclohexane	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	10-100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Γetrachloroethene	10-50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Foluene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
rans-1,2-Dichloroethene	10-100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
rans-1,3-Dichloropropene	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Frichloroethene	10	2.6	2.5	2.7	<1.0	<1.0	2.1
Frichlorofluoromethane	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	NA	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fotal VOCs		48 J	37 J	37 J	7.0	6.4	27 J

- 1. Model Technology Best Professional Judgment (BPJ) Limits recommended for carbon adsorption with appropriate pretreatment from Attachment C of TOGS 1.2.1.
- 2. When a range is listed for the BPJ limit, a variation in available references was found. Recommended daily maximum limits should be in this range.

Bold constituent detected above method detection limit.

< Analyte below detection limit.

EFF. Effluent.
INF. Influent.
J Estimated value.
NA No BPJ limit listed.
ug/L Micrograms per liter.
VOCs Volatile organic compounds.



Table 8. SP-5 Spring Water Remediation System Mass Removal Rate of Volatile Organic Compounds, Colesville Landfill, Broome County, New York.

Date Sampled	Total VOC Influent Concentration (ug/L)	Effluent Flowrate (gpm)	Depth to Water (feet btc)	Total Spring Water Treated ⁽¹⁾ Between Sampling Intervals (gal)	Influent Concentration (2) Geometric Mean (ug/L)	Total Estimated Mass ⁽³⁾ Removed (lbs)
9/20/2012	48	0.29	NM	NA	NA	NA
12/19/2012	37	1.1	0.00	71,823	42	0.025
3/28/2013	37	1.6	0.30	184,517	37	0.057

Total Estimated Mass Removed During Reporting Period (lbs) = 0.082

Total Estimated Mass Removed Since System Startup (lbs) = 2.0

Total Effluent Treated During Reporting Period (gallons) = 256,341

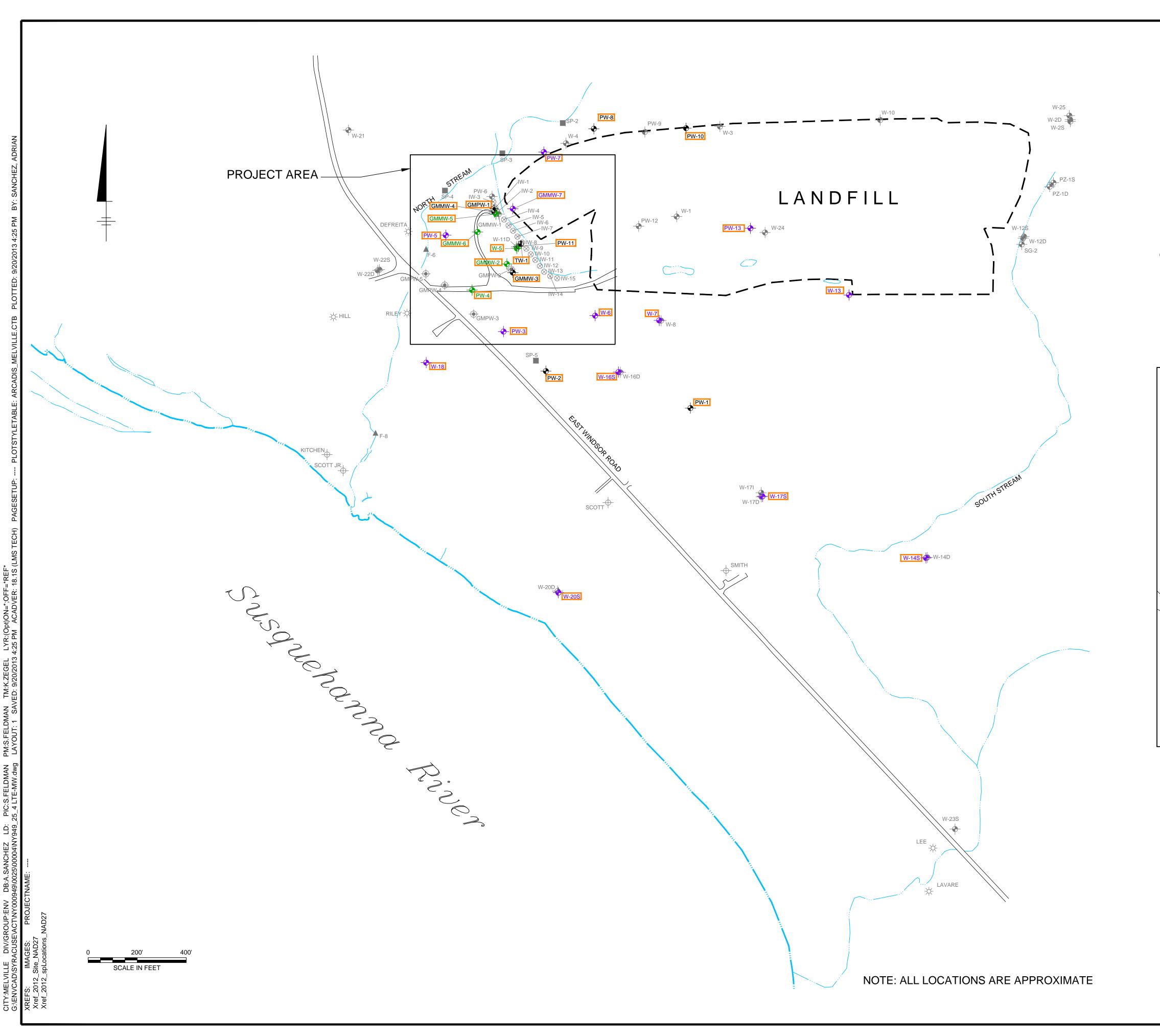
Total Effluent Treated Since System Startup (gallons) = 3,941,582

Notes and Abbreviations:

- 1. Total Spring Water Treated Between Sampling Intervals = Effluent Flowrate Geometric Mean x 1440 min/day x days between sampling events.
- 2. Influent Concentration Geometric Mean = (Influent Concentration for prior sampling event x Influent Concentration for current sampling event)^(1/2).
- 3. Total Mass Removed = (Total Groundwater Treated Between Sampling Intervals) x Influent Concentration Geometric Mean x 3.7854 L/gal x (1 lbs / 453,592,370 ug).
- btc Below top of casing.
- gal Gallons.
- gpm Gallons per minute.
- lbs Pounds.
- NA Not applicable.
- NM Not measured.
- ug/L Micrograms per liter.
- VOC Volatile organic compound.



Figures



EXPLANATION

LONG-TERM MONITORING PLAN DESIGNATIONS

UCATION AND DESIGNATION OF MONITORING WELL

LOCATION AND DESIGNATION OF EXISTING HOMEOWNER WELL

LOCATION AND DESIGNATION OF FORMER HOMEOWNER WELL

LOCATION AND DESIGNATION OF INJECTION WELL

LOCATION AND DESIGNATION OF PRODUCTION WELL

LOCATION AND DESIGNATION OF TEST MONITORING WELL

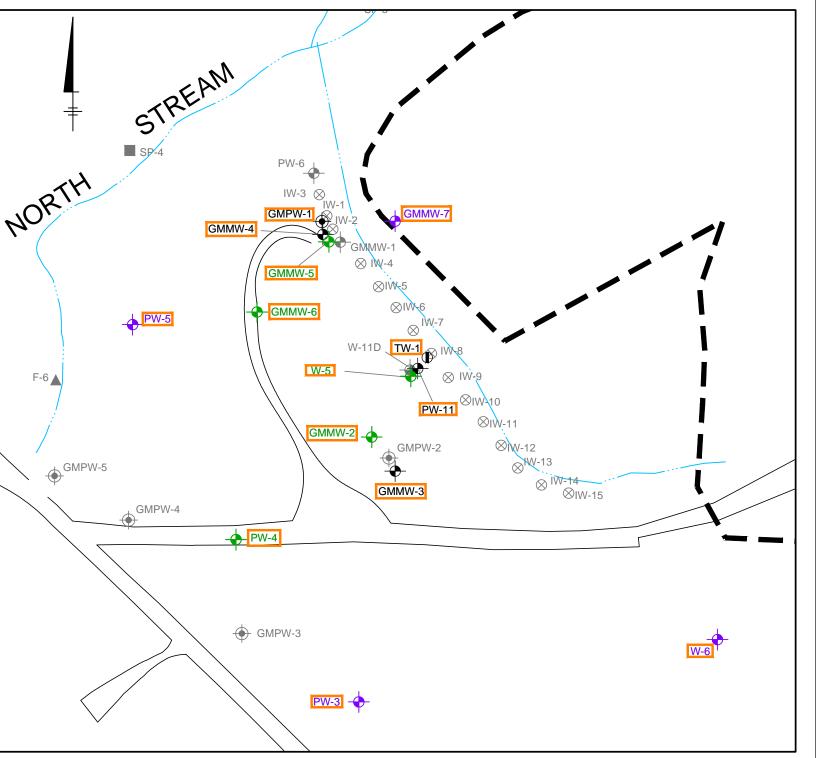
F-6 ▲ LOCATION AND DESIGNATION OF SURFACE WATER SAMPLE

SP-2 LOCATION AND DESIGNATION OF SPRING SAMPLE

CMMW-5- LOCATION AND DESIGNATION OF QUARTERLY MONITORING WELL

PW-3 - LOCATION AND DESIGNATION OF ANNUAL MONITORING WELL

LOCATION AND DESIGNATION OF
WELLS INCLUDED IN ANNUAL
HYDRAULIC MEASUREMENT PROGRAM



SITE PLAN SHOWING PROJECT AREA

COLESVILLE LANDFILL COLESVILLE, NEW YORK SEMI-ANNUAL MONITORING REPORT

LONG-TERM EFFECTIVENESS MONITORING LOCATIONS



FIGURE



Appendix A

Degradation Trend Figures

Figure A-1. Concentrations of PCE Daughter Products Versus Time in GMMW-05

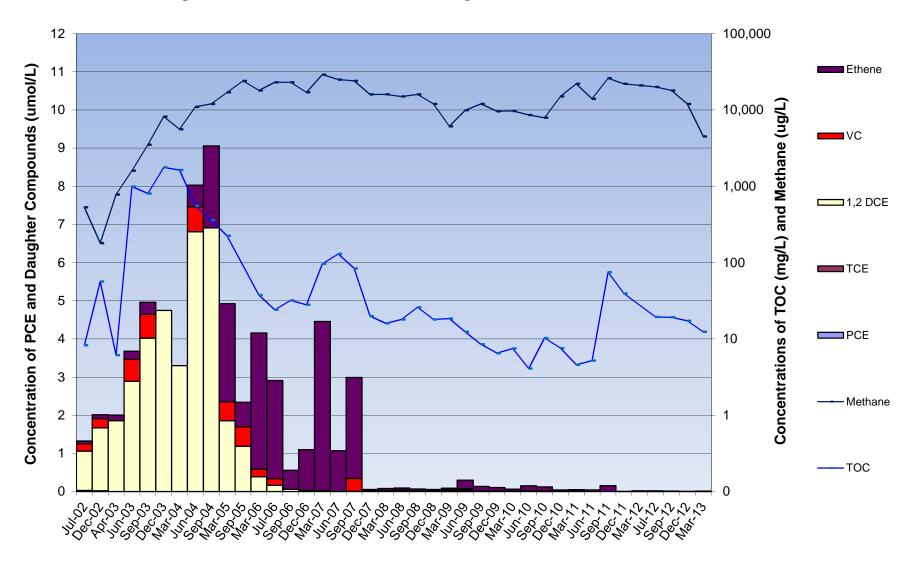


Figure A-2. Concentrations of PCE Daughter Products Versus Time in GMMW-06

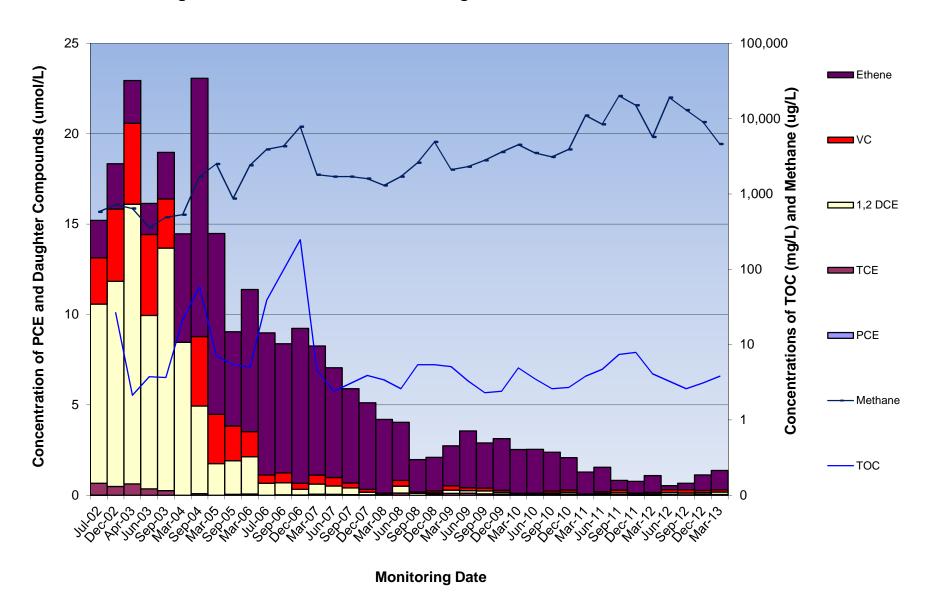


Figure A-3. Concentrations of PCE Daughter Products Versus Time in GMMW-02

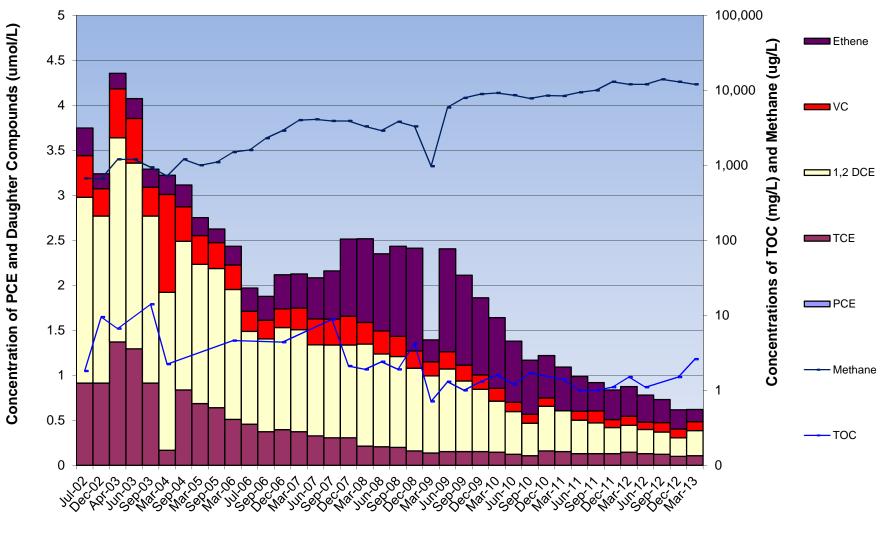


Figure A-4. Concentrations of PCE Daughter Products Versus Time in TW-1

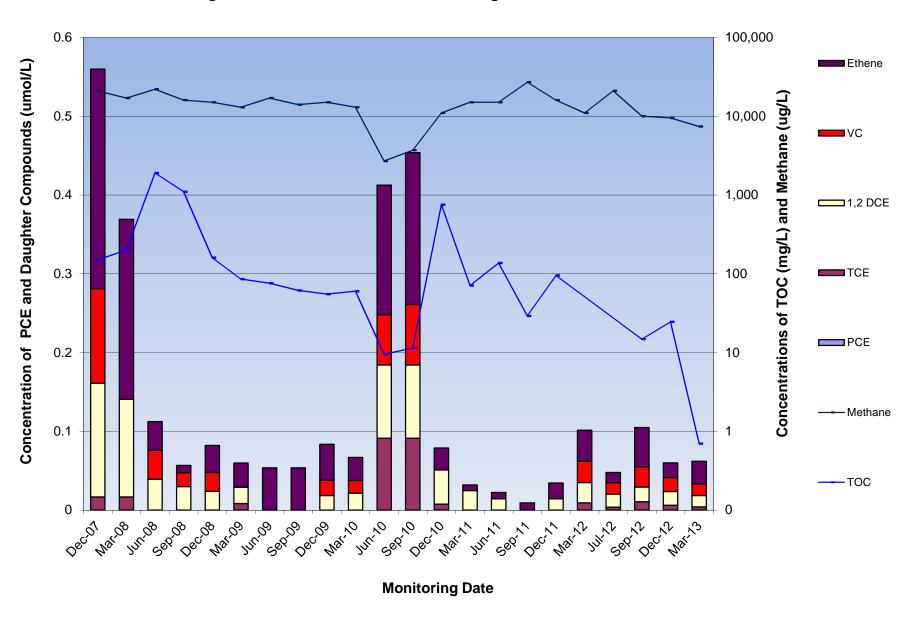


Figure A-5. Concentrations of 1,1,1-TCA Daughter Products Versus Time in GMMW-05

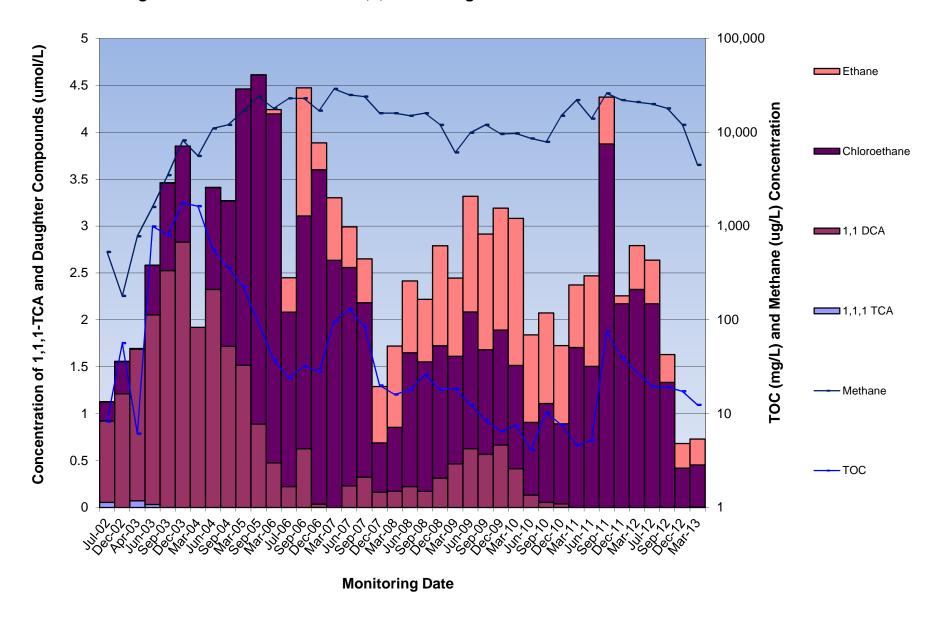


Figure A-6. Concentrations of 1,1,1-TCA Daughter Products Versus Time in GMMW-06

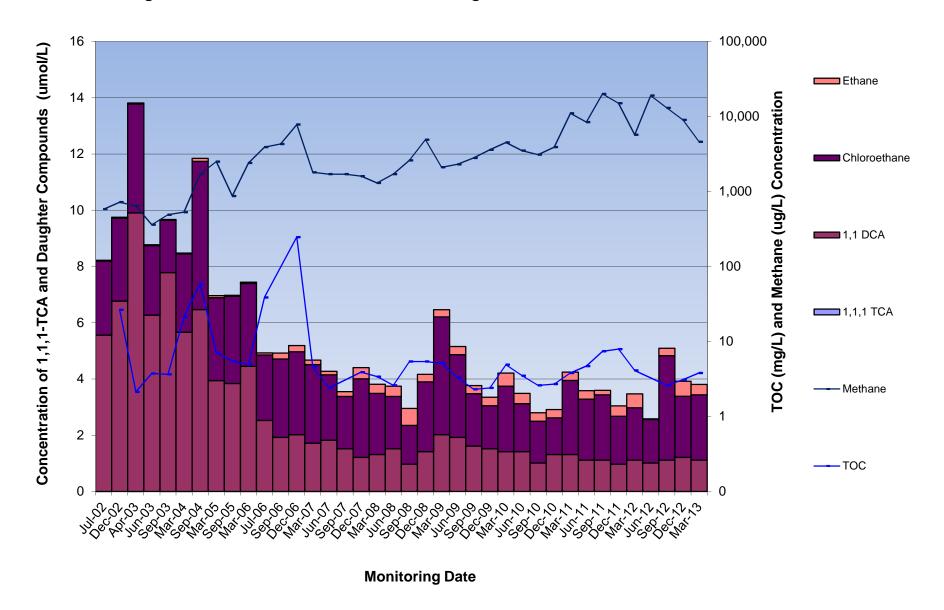


Figure A-7. Concentrations of 1,1,1-TCA Daughter Products Versus Time in GMMW-02

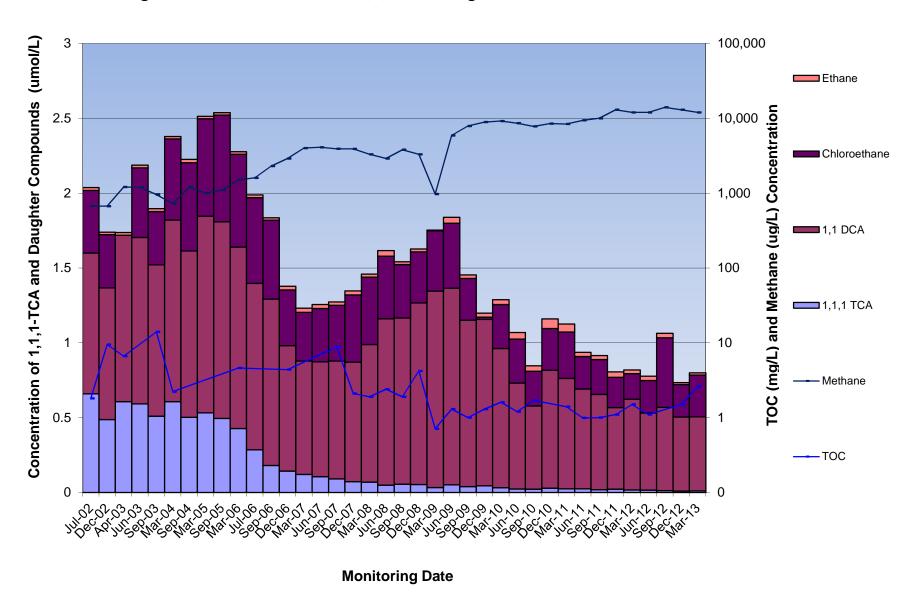
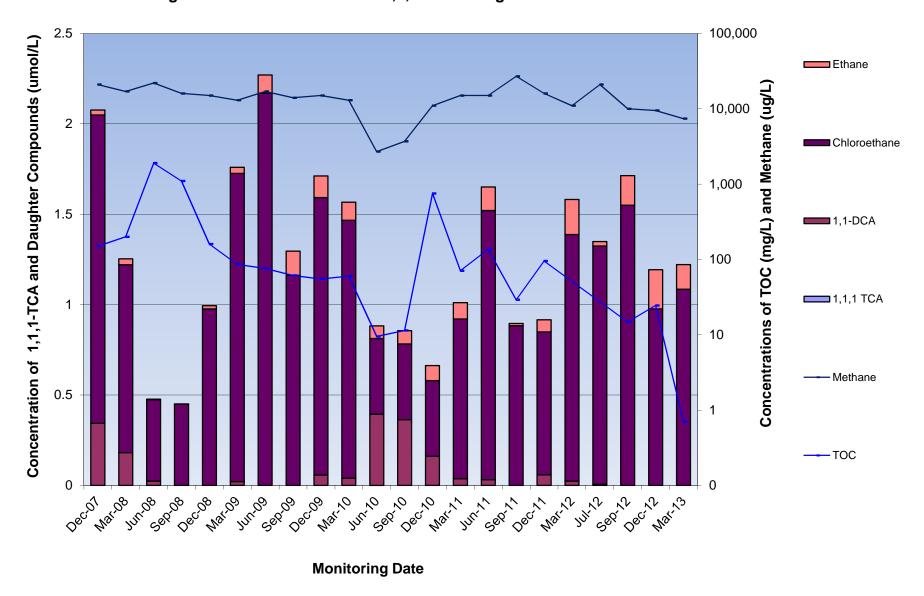


Figure A-8. Concentrations of 1,1,1-TCA Daughter Products Versus Time in TW-1





Appendix **B**

Groundwater Sampling Logs

Colesville Colesville	e Landfill	Project No.	NY000949.0	<u>)025 </u>	ge 1 of 1
Site Location _ Colesville	e, NY			Dat	e 12/18/12
Site/Well No. <u>Gmm</u>		Replicate No.	,		de No.
Weather Cloud	4 40°	Sampling Time	: Begin		.000
Evacuation Data			Field Param	eters	T _e
Measuring Point			Color	C	doruss
MP Elevation (ft)	68		Odor		JOW.
Land Surface Elevation (ft	·)		Appearance		ivar
Sounded Well Depth (ft br	np)		pH (s.u.)		<i>6.</i> 50
Depth to Water (ft bmp)	37.36	_	Conductivity (mS/cm)),622
Water-Level Elevation (ft)			(µmhos/c		
Water Column in Well (ft)			Turbidity (NT		
Casing Diameter/Type	2"		remperature	· —	9 87
Gallons in Well		·	Dissolved Ox		-
Gallons Pumped/Bailed Prior to Sampling			DRP		
Sample Pump Intake Setting (ft bmp)	•		Sampling Me	an and a second	/ Bailer
Purge Time	begin end		Remarks 👤	eclep byod	a 90B
Pumping Rate (gpm)	end				
Evacuation Method	2" Disposable poly b	ailer			
Constituents Sampled	Container	Description	Nu	ımber	Preservative
8260B VOLATILES	40 ML V	OA Vials		3	
Ethene, Ethane, Methane	40 ML V			<u> </u>	HCL Ne2DO4
тос	40 ML V		_	7	Na3PO4 H2SO4
Total Iron	500 ml				HNO3
	3				
Sampling Personnel	КВ			6	
Well Casing V					
3al./Ft. 1-½" = 0.06 1-½" = 0.09		0.37 4" = 0.6 ' = 0.50 6" = 1.4			
below measuring point C Degrees Celsius feet Gallons per minute mg/L Miligrams per liter	ml mililiter	per centimeter evel ole	NTU PVC s.u. umhos/cm VOC	Nephelometric T Polyvinyl chlorid Standard units Micromhos per c Volatile Organic	e centimeter

Project	Colesville	andfill	Proje	ct No. \underline{I}	17000949.00	25 Page	1 of 1	•
Site Location	Colesville,	NY				Date	12/18/12	
Site/Well No.	Gmm	w-5	Repli	cate No. 🧴	2EPV 1218	Code	No	
Weather	Cloud	y 400	Samp	oling Time:	Begin <u>M</u> 4	<u> </u>	1150	_
Evacuation D	ata			ı	ield Parame	ters	,	
Measuring Poi	int			(Color	colori	ess / Sigur	gellow
MP Elevation ((ft)			(Odor	SL	ight	
Land Surface	Elevation (ft)	. 2		,	Appearance		ear	
Sounded Well	Depth (ft bm	p)		ı	oH (s.u.)		6.42	
Depth to Wate	er (ft bmp)	ųο	1.05	(Conductivity (mS/cm)		0.299	_
Water-Level E	levation (ft)				(µmhos/cr	n)		
Water Column	in Well (ft)			-	Furbidity (NT	J)	<u> </u>	
Casing Diame	ter/Type	2"		-	Temperature ((°C)	9,93	
Gallons in We			<u> </u>	ι	Dissolved Oxy	/gen (mg/L)		
Gallons Pump Prior to	ed/Bailed Sampling				ORP			
Sample Pump Setting		65	.50		Sampling Met	hod PDB	whale pump	
Purge Time		begin <u> ໃ ທ່າ</u>	end			,		•
Pumping Rate	(gpm)		-					
Evacuation Me	ethod	PDB/ Whal	e pump	59 V				
Constituents S	Sampled		Container Descr	iption		mber	Preservative	
8260B VOLAT	ILES		40 ML VOA Vi	als		13	HCL	909
Ethene, Ethan	e, Methane		40 ML Vials			2	Na3PO4	
TOC			40 ML Vials			2	H2SO4 (Who	te purp
TAL Metals			250 ml plastic					
Sampling Pers	sonnel	KB						
	Well Casing V	olumes						ı
	1-¼" = 0.06 1-½" = 0.09	2" = 0.10 2-½" = 0		4" = 0 6" = 1				ı
°C Degrees ft feet	per minute	mI mS/cm msl N/A NR	mililiter Milisiemens per ce mean sea-level Not Applicable Not Recorded	ntimeter	NTU PVC s.u. umhos/cm VOC	Nephelometric T Polyvinyl chloride Standard units Micromhos per o Volatile Organic	e centimeter	

Project Colesville	Landfill F	Project No. <u>N</u>	IY000949.0025	Page <u>1</u> of <u>1</u>
Site Location Colesville,	NY			Date 12/18/12
Site/Well No. GMMU	<i>ن</i> (<i>Q</i>	Replicate No.	as imso	Code No.
Weather <u>Cloudy</u>	e <u>6</u> p	Sampling Time:	Begin 12 ZC	End 1235
Evacuation Data		F	ield Parameters	S
Measuring Point		c	olor	Colereless Slight yellow
MP Elevation (ft)		c	dor	- No Ce
Land Surface Elevation (ft)		A	ppearance	Clear / Trace particles
Sounded Well Depth (ft bm)	p)	р	H (s.u.)	(0.58
Depth to Water (ft bmp)	39.62	c	onductivity (mS/cm)	0.858
Water-Level Elevation (ft)	- 9		(µmhos/cm)	
Water Column in Well (ft)		т	urbidity (NTU)	
Casing Diameter/Type	2"	T	emperature (°C)	9,9
Gallons in Well		D	issolved Oxygen	n (mg/L)
Gallons Pumped/Bailed Prior to Sampling		_	RP	
Sample Pump Intake Setting (ft bmp)			ampling Method emarks	PDB / Bailer
Purge Time	begin end		Redenle	and a DDB
Pumping Rate (gpm)				The state of the s
Evacuation Method	2" Disposable poly baile	<u>er</u>		
Constituents Sampled	Container De	escription	Numbe	Preservative
8260B VOLATILES	40 ML VOA	₹ Vials	3 3	3 HCL
Ethene, Ethane, Methane	40 ML Vials	s	_ '2'	Na3PO4
тос	40 ML Vials	S	_ 2	H2SO4
Total Iron	500 ml pla	astic	***************************************	HNO3
Sampling Personnel	КВ			
Well Casing Vo	olumes			
Gal./Ft. $1-\frac{1}{2}$ " = 0.06 $1-\frac{1}{2}$ " = 0.09	2" = 0.16 $3" = 0.2-\frac{1}{2}" = 0.26 3-\frac{1}{2}" =$		=	
bmp below measuring point °C Degrees Celsius ft feet gpm Gallons per minute mg/L Miligrams per liter	ml mililiter mS/cm Milisiemens per msl mean sea-level N/A Not Applicable NR Not Recorded	r centimeter	NTU Nep PVC Poly s.u. Star umhos/cm Mice	phelometric Turbidity Units gvinyl chloride ndard units romhos per centimeter atile Organic Compounds

Project Colesville Lar	idili Pro	oject No.	NY000949.00	025 Page	: <u>1</u> of <u>1</u>
Site Location Colesville, NY	<u>, </u>			Date	21/8/15/
Site/Well No. Dw-4	Re	plicate No.	_	Code	No.
Weather <u>Rain</u> 4	O°S Sa	mpling Time	e: Begin <u>13</u>	End	1310
Evacuation Data			Field Parame	eters	
Measuring Point		_	Color	Colo	e Loss
MP Elevation (ft)		_	Odor	Co	V6
Land Surface Elevation (ft)		_	Appearance	Cla	iR
Sounded Well Depth (ft bmp)		_	pH (s.u.)	Co	.73
Depth to Water (ft bmp)	18.48	_ 3	Conductivity (mS/cm)	\bigcirc	. 53/
Water-Level Elevation (ft)		_	(µmhos/c	m)	
Water Column in Well (ft)		_	Turbidity (NTI	J) .	
Casing Diameter/Type	2"	_	Temperature	(°C)	0.93
Gallons in Well			Dissolved Oxy	ygen (mg/L)	-
Gallons Pumped/Bailed Prior to Sampling		# 'S	ORP		
Sample Pump Intake Setting (ft bmp)			Sampling Met	edeployed	/ Bailer
Purge Time beg	in end	_		anthropics.	a pap
Pumping Rate (gpm)		_			38
Evacuation Method 2"	Disposable poly bailer	-			
Constituents Sampled	Container Des	cription	Nu	mber	Preservative
8260B VOLATILES	40 ML VOA \	Vials		3	HCL
Ethene, Ethane, Methane	40 ML Vials			2	Na3PO4
TOC	40 ML Vials			2	H2SO4
Total Iron	500 ml plas	tic			HNO3
Sampling Personnel	- КВ				
Well Casing Volum	nes				
Gal./Ft. 1-¼" = 0.06 1-½" = 0.09	2" = 0.16 3" = 0.3 2-½" = 0.26 3-½" = 0				
bmp below measuring point °C Degrees Celsius ft feet gpm Gallons per minute mg/L Miligrams per liter	ml mililiter mS/cm Milisiemens per o msl mean sea-level N/A Not Applicable NR Not Recorded	centimeter	NTU PVC s.u. umhos/cm VOC	Nephelometric T Polyvinyl chloride Standard units Micromhos per c Volatile Organic	entimeter

Project Col	esville Landfill	Project No. 1	NY000949.0025	Page <u>1</u> of <u>1</u>
Site Location Col	esville, NY			Date 12/18/12
Site/Well No.	Iw-	Replicate No.		Code No.
Weather <u>C</u>	ondy 400	Sampling Time:	Begin <u>1125</u>	End 1130
Evacuation Data		ı	Field Parameters	S
Measuring Point			Color	Clear Stight yellow
MP Elevation (ft)			Odor	scigns
Land Surface Eleva	tion (ft)		Appearance	Clear / Trace which particles
Sounded Well Dept	h (ft bmp)		pH (s.u.)	6.34
Depth to Water (ft b	mp) <u>52.64</u>	<u>'</u>	Conductivity (mS/cm)	1.899
Water-Level Elevati	on (ft)		(µmhos/cm)	
Water Column in W	ell (ft)		Turbidity (NTU)	
Casing Diameter/Ty	/pe2"	<u>-</u>	Temperature (°C)	10.64
Gallons in Well			Dissolved Oxyger	n (mg/L)
Gallons Pumped/Ba Prior to Samp			ORP	
Sample Pump Intak	Δ	;	Sampling Method	PDB / whale pump
Setting (ft bm			Remarks <u>d</u>	played a PDB
Purge Time	begin 10 min end			
Pumping Rate (gpm				
Evacuation Method	PDB/ Whale pum	ip		
Constituents Sample	led Conta	iner Description	Numbe	er Preservative
8260B VOLATILES	40 N	IL VOA Vials	3	HCL > PUB
Ethene, Ethane, Me	ethane 40 N	/IL Vials	<u> </u>	Na3PO4 H2SO4 Whala Dung
TOC	40 N	//L Vials		H2SO4 Whala furt
TAL Metals		ml plastic	 ,	
Sampling Personne	el KB			
Gai./Ft. 1-1/4"	Casing Volumes = 0.06 2" = 0.16 = 0.09 2-½" = 0.26	3" = 0.37		
bmp below measuri °C Degrees Celsii ft feet gpm Gallons per mi mg/L Miligrams per i	us mS/cm Milisier msl mean : nute N/A Not Ap	r mens per centimeter sea-level plicable ecorded	PVC Po s.u. St umhos/cm Mi	ephelometric Turbidity Units olyvinyl chloride tandard units licromhos per centimeter olatile Organic Compounds

Project Colesville Landfill	Project No. N	Y000949.0025	Page 1 of 1
Site Location Colesville, NY	3		Date 12 19 12
Site/Well No. Tw-3	Replicate No.		Code No.
Weather Partly Cloudy 400	Sampling Time:	Begin 110	<u> </u>
Evacuation Data	Fi	eld Paramete	rs
Measuring Point	Co	olor	gray trot
MP Elevation (ft)		dor	ned.
Land Surface Elevation (ft)	Ap	opearance	Clear
Sounded Well Depth (ft bmp)	pH	H (s.u.)	6,13
Depth to Water (ft bmp) 42.2	Co	onductivity (mS/cm)	
Water-Level Elevation (ft)		(µmhos/cm)	
Water Column in Well (ft)	Tu	urbidity (NTU)	
Casing Diameter/Type 2"	<u></u> Те	emperature (°0	
Gallons in Well	 Di:	issolved Oxyg	en (mg/L)
Gallons Pumped/Bailed	<u>—</u> ОІ	RP	
Prior to Sampling		amaliaa Matha	d whole numb
Sample Pump Intake Setting (ft bmp) 57.5		ampling Metho	d whale pump
	Re	emarks	
Purge Time begin / 6 m Yend			
Pumping Rate (gpm) Evacuation Method Recirculation			
Evacuation Method Techculation			
Constituents Sampled Container I	Description	Num	per Preservative
8260B VOLATILES 40 ML VO	DA Vials		<u>HCL</u>
Ethene, Ethane, Methane 40 ML Via	als		<u>Na3PO4</u>
TOC 40 ML Via	als		H2SO4
TAL Metals 500 ml p	lastic		HNO3
Sampling Personnel KB			
Well Casing Volumes			
Gal./Ft. $1-\frac{1}{4}$ " = 0.06 2" = 0.16 3" = $1-\frac{1}{2}$ " = 0.09 $2-\frac{1}{2}$ " = 0.26 $3-\frac{1}{2}$ "	0.37 4" = 0.69 = 0.50 6" = 1.43	Ē	
bmp below measuring point ml mililiter °C Degrees Celsius ms/cm Milisiemens p ft feet msl mean sea-let gpm Gallons per minute N/A Not Applicab mg/L Miligrams per liter NR Not Recorder	per centimeter vel le	NTU N PVC F s.u. S umhos/cm M	lephelometric Turbidity Units Polyvinyl chloride Standard units dicromhos per centimeter Volatile Organic Compounds

Project _	Colesville I	<u> Landfill</u>		Project No.	NY000949.0	025	Page	1 or 1
Site Location _	Colesville,	NY					Date	12/19/12
Site/Well No.	工心.	- 8		Replicate No.	-		Code	No
Weather Ç)aithy	cloudy	40°	Sampling Time	e: Begin <u>1</u>	140	End	1150
Evacuation Da	ta				Field Param	eters		
Measuring Poin	nt .				Color		Dra	sa tost
MP Elevation (f	t)				Odor		370	40
Land Surface E	levation (ft)				Appearance	_	Civ	ar
Sounded Well [Depth (ft bm	p)			pH (s.u.)			6,24
Depth to Water	(ft bmp)	51	.89		Conductivity (mS/cm)			
Water-Level Ele	evation (ft)				(µmhos/	cm)		
Water Column	in Well (ft)				Turbidity (N7	ΓU)		
Casing Diamete	er/Type	2"			Temperature	e(°C)		
Gallons in Well					Dissolved O	xygen (mg	/L)	
Gallons Pumpe Prior to S					ORP	_		
Sample Pump I	Intoko				Sampling Me	ethod	whale	pump
Setting (1		59	.60		Remarks _			
Purge Time		begin <u>15 m</u> ?	end					
Pumping Rate	(gpm)					45		
Evacuation Me	thod	Recirculation	on					
Constituents Sa	ampled		Containe	r Description	, N	lumber		Preservative
8260B VOLATI	LES		40 ML \	VOA Vials			_	HCL
Ethene, Ethane	e, Methane		40 ML	Vials				Na3PO4
TOC			40 ML \	Vials				H2SO4
TAL Metals			500 ml	plastic			_	HNO3
Sampling Person	onnel	—— КВ				_,.	_	
	Well Casing \						-	
Gai./Ft.	1-¼" = 0.06 1-½" = 0.09	2" = 0.1 2-½" = (0.65 1.47			
bmp below mea °C Degrees (ft feet gpm Gallons pa mg/L Miligrams	er minute	mi mS/cm msl N/A NR	mililiter Milisiemen mean sea- Not Applic Not Recor	able	NTU PVC s.u. umhos/cr VOC	Polyviny Standar m Micromb	/I chlorid d units hos per	Turbidity Units le centimeter c Compounds

Project _	Colesville L	andfill		Project No.	NY00094	9.0025	Page	<u>1</u> of <u>1</u>
Site Location _	Colesville, I	NY					Date	12/19/12
Site/Well No.	IW-1.	3	_	Replicate No.			Code	No
Weather _	Partly	<u> 104 dy 40</u>		Sampling Time	e: Begin	1230	End	1235
Evacuation Da	ıta				Field Par	ameters		
Measuring Poir	nt _				Color		Oran	ge fint
MP Elevation (f	ft) _				Odor		med	0
Land Surface E	Elevation (ft)		-		Appearan	ce _	Clea	R
Sounded Well I	Depth (ft bmp)			pH (s.u.)	-	(0.28
Depth to Water	(ft bmp) _	55	5.50	····	Conductiv			
Water-Level El	evation (ft)				(µmho	os/cm)		
Water Column	in Well (ft)				Turbidity ((NTU)		
Casing Diamete	er/Type _	2"			Temperat	ure (°C)		
Gallons in Well	_				Dissolved	Oxygen (n	ng/L)	
Gallons Pumpe Prior to S					ORP	-		
					Sampling	Method	PDB /	whale pump
Sample Pump (Setting (59	1.60		Remarks			
Purge Time	ı	begin <u>12mW</u>	end					
Pumping Rate		. <u>. </u>						
Evacuation Me	thod _	PDB/ Whal	e pump					1
Constituents Sa	ampled		Container	Description		Number		Preservative
8260B VOLATI	LES		40 ML V	OA Vials				HCL
Ethene, Ethane	e, Methane		40 ML V	ials				Na3PO4
TOC			40 ML V	ials		2		H2SO4
TAL Metals			250 ml	plastic				•
		_						
Sampling Person		КВ						
Gai./Ft.	Well Casing V 1-¼" = 0.06 1-½" = 0.09	olumes 2" = 0.19 2-½" = (0.65 1.47			
bmp below mea °C Degrees C ft feet gpm Gallons po mg/L Miligrams	er minute	mi mS/cm msl N/A NR	mililiter Milisiemens mean sea-le Not Applica Not Record	bie	NTU PVC s.u. umhos VOC	Polyvi Stand /cm Microi	nyl chloride ard units mhos per c	

Project	Colesville Lar	dfill	Project No.	NY000949.00	025	Page <u>1</u> of <u>1</u>
Site Location	Colesville, NY	,				Date 12/19/12
Site/Well No.	SP-51	1 Fluent	Replicate No			Code No
Weather	partly	Jordy 40	Sampling Tin	ne: Begin It	105	End 1410
Evacuation Da	ata			Field Parame	eters	
Measuring Poi	nt			Color		ColoRLess
MP Elevation (ft)			Odor		None
Land Surface B	Elevation (ft)		<u> </u>	Appearance		Clear
Sounded Well	Depth (ft bmp)	<u> 3, 8</u>	0	pH (s.u.)		6.31
Depth to Water	r (ft bmp)	0.0	<u> </u>	Conductivity (mS/cm)	<u> </u>	0.498
Water-Level El	evation (ft)			(µmhos/c	m)	
Water Column	in Well (ft)	3.8	<u>'O</u>	Turbidity (NT	U)	
Casing Diamet	er/Type	2"		Temperature	(°C)	7.67
Gallons in Wel	<u> </u>	06	,19	Dissolved Ox	ygen (mg/	'L)
Gallons Pumpe	ed/Bailed Sampling	2,0		ORP	_	
				Sampling Me	thod	Bailer
Sample Pump Setting (Remarks		
Purge Time	beg	jin <u> /Ч₺0</u> er	id 1405			
Pumping Rate						
Evacuation Me	thod <u>2"</u>	Disposable _l	ooly bailer			
Constituents Sa	ampled	Cor	tainer Description	Nu	umber	Preservative
8260B VOLAT	LES	40	ML VOA Vials		3	HCL
Ethene, Ethane	e, Methane	40	ML Vials		-	Na3PO4
TOC		40	ML Vials		_	H2SO4
Total Iron	AL metals		00 ml plastic			HNO3
Sampling Person	onnel	– <u>—</u> КВ				
	Well Casing Volu	mes				
Gal./Ft.	1-¼" = 0.06 1-½" = 0.09	2" = 0.16 2-½" = 0.26		= 0.65 = 1.47		
bmp below mer °C Degrees 0 ft feet gpm Gallons pe mg/L Miligrams	er minute	msl mea N/A Not	ter iemens per centimeter n sea-level Applicable Recorded	NTU PVC s.u. umhos/cm VOC	Polyvinyl Standard Micromho	

Project Colesville Landfill	Project No. <u>NY000949.0025</u>	Page \ of \
Site Location Colesville, NY		Date
Site/Well No. SP. 5 effluent	Replicate No.	_
Weather Partly Cloudy	પુ ₀ ે Sampling Time: Begin <u>ડે</u> 5	3 End <u>1356</u>
Site Conditions	Field Parameters	3
Water Quality Meter: USI	Color	COLORLISS
	Odor	000
Location Condition:	Appearance	Clear
Cleared out or	Oe 4	
	to sampling	
•	pH (s.u.)	6.15
Vegetation:		
doment	Conductivity (mS/cr	m)
	Temperature (°C)	<u>7.40</u>
Depth of Water:		
1.0	DO (mg/L)	
Estimated Flow Rate: 1.5 Se	C 100 (NTU)	
	ORP	
Collection Method: Direct c	ollection Time	<u> </u>
Remarks:		
VOCS / TAL Y	volals - Submitted	
2		
Constituents Sampled: See COC	Sampling Personnel:	KB

Water Sampling Log

Project Colesville Lan	dfill Proje	ect No. N	Y000949.00	26 Page	1 of 1
Site Location Colesville, NY				Date	3/20 27/13
Site/Well No. Gmmw	- Z Repli	icate No.		Code	No.
Weather Cloudy	<u>40°</u> Sam	pling Time:	Begin 13	50 End	1420
Evacuation Data		Fie	eld Parame	ters	
Measuring Point		Co	olor	<u></u>	RLCSS
MP Elevation (ft)		Oc	dor	<u></u>	<u> </u>
Land Surface Elevation (ft)	·		pearance	_Cle	aR
Sounded Well Depth (ft bmp)	56.05 T.OF	PUC PH	l (s.u.)	(c	.83
Depth to Water (ft bmp)	38.75	Co	nductivity (mS/cm)	(0)	9 uslcm
Water-Level Elevation (ft)			(µmhos/cr	n)	
Water Column in Well (ft)		Tu	rbidity (NTL	l)	
Casing Diameter/Type	2"	Te	mperature (°C)(C	. 4
Gallons in Well	<u></u>	Dis	ssolved Oxy	gen (mg/L)	
Gallons Pumped/Bailed Prior to Sampling		OF	RP.		
Sample Pump Intake Setting (ft bmp)	51'		mpling Methemarks	PDB/	Bailer/whak punf
Purge Time beg	in end				03
Pumping Rate (gpm)	m: 1 (2.0 galp	ne			
Evacuation Method 2"	Disposable poly bailer				
Constituents Sampled	Container Descri	ption	Nui	mber	Preservative
8260B VOLATILES	40 ML VOA Via	als		3	HCL
Ethene, Ethane, Methane	40 ML Vials			2	Na3PO4
TOC	40 ML Vials			2	H2SO4 BaileR
Total Iron	500 ml plastic	<u> </u>			HNO3
alternate Electron Acceptors	-			7	W. punp
Sampling Personnel	КВ				
Well Casing Volum Gal./Ft. 1-¼" = 0.06 1-½" = 0.09	nes 2" = 0.16 3" = 0.37 2-½" = 0.26 3-½" = 0.50	4" = 0.65 0 6" = 1.47			
bmp below measuring point °C Degrees Celsius ft feet pm Gallons per minute Miligrams per liter	ml milliter mS/cm Millisiemens per cer msl mean sea-level N/A Not Applicable NR Not Recorded	ntimeter	NTU PVC s.u. umhos/cm VOC	Nephelometric Tu Polyvinyl chloride Standard units Micromhos per co Volatile Organic (entimeter Compounds

* metals - Lab Fitter *
Pres was rinsed out

Project Colesville	Landfill	Project No. <u>NY000</u>	0949.0026 Pa	age <u>1</u> of <u>1</u>	_
Site Location Colesville	e, NY		D	ate 3/26/13	
Site/Well No. Gm	w-5	Replicate No. 12EP	V037613 C	ode No.	_
Weather Darth	y youdy 350	Sampling Time: Be	gin 1605 Er	1630	
Evacuation Data		Field I	Parameters		-
Measuring Point		Color	Col	ORLESS - SLig	gust Yellow
MP Elevation (ft)		Odor	19 <u>11 - 1</u>	Scials	702 <u>4</u>
Land Surface Elevation (ft)		Appea	ranceC	lear	-
Sounded Well Depth (ft bn	np) Scoren 53-6	<u></u>	u.)	6.46	_
Depth to Water (ft bmp)	49.60	Condu (m	ctivity S/cm)	336 uslem	_
Water-Level Elevation (ft)		<u></u> (µı	mhos/cm)		-
Water Column in Well (ft)		Turbid	ity (NTU)		_
Casing Diameter/Type	2"	Tempe	erature (°C)	9.30	_
Gallons in Well		Dissol	ved Oxygen (mg/L)	-	_
Gallons Pumped/Bailed Prior to Sampling	2.5 gallons	ORP		- Marina	_
Sample Pump Intake Setting (ft bmp)	581	Sampi Remai	(5.1)	DB/Bailer What	zung -
Purge Time	begin end			0	_
Pumping Rate (gpm)			Jul Parda	ALTING SAND	ling
Evacuation Method	2" Disposable poly b	eailer	Rech want	+ continued to	sample
Constituents Sampled	Container	Description	Number	Preservative	
8260B VOLATILES	40 ML \	/OA Vials	313	HCL	_
Ethene, Ethane, Methane	40 ML V	/ials		Na3PO4	- -27
TOC	40 ML V	/ials		H2SO4 W.	P
Total Iron	500 ml	plastic		НИОЗ	-
alternate Electron Accep	otors	<u> </u>	4	what pu	sp.
Sampling Personnel	КВ				-
Well Casing Gal./Ft. 1-¼" = 0.06 1-½" = 0.09	2" = 0.16 3" :	= 0.37 4" = 0.65 6" = 0.50 6" = 1.47			-
bmp below measuring point C Degrees Celsius ft feet gpm Gallons per minute mg/L Miligrams per liter		able um	C Polyvinyl chl . Standard uni hos/cm Micromhos p		-

Project _	Colesville Lan	dfill	_	Project No.	NY	000949.00	26	Page	of	1
Site Location _	Colesville, NY							Date	3/20	113
Site/Well No.	Gmmw-	6	_	Replicate No.	_0	sims	D	Code	No	
Weather	Clarky ?	So	-	Sampling Tim	ne:	Begin 15	00	End	152C	<u> </u>
Evacuation Date	ta				Fiel	ld Parame	eters			
Measuring Point	<u> </u>				Cole	or		dos	less	
MP Elevation (ft					Odo	or		000	x to	Slight
Land Surface El	evation (ft)				App	earance	_	CN	mR_	
Sounded Well D	epth (ft bmp)	Socree	n 40-5	0°	рΗ	(s.u.)	_	(57.0	3387
Depth to Water	(ft bmp)					nductivity (mS/cm)	_	8	26,	Sim
Water-Level Ele	vation (ft)					(µmhos/ca	m)			
Water Column is	n Well (ft)				Turt	bidity (NTL	J)	_	_	
Casing Diamete	r/Type	2"			Ten	nperature ((°C)		9.0	
Gallons in Well					Diss	solved Oxy	/gen (mg/	L)		12.000
Gallons Pumped			1105		OR	P	_		_	
Prior to S	ampling	Will	1.25		San	npling Met	hod	PDB /	Bailer / U	shale our
Sample Pump In Setting (ft		45	7			narks			, ,	
Purge Time	beg	in	end			Redic	Slowed	0	GGO	
Pumping Rate (g	gpm)						, J			
Evacuation Meth	nod <u>2"</u>	Disposa	ble poly ba	<u>iler</u>	-				<u>.</u>	
Constituents Sar	mpled		Container E	Description		Nu	mber		Preserva	tive
8260B VOLATIL	ES	_	40 ML VC	DA Vials		31	3 3	4	HCL	msmsD
Ethene, Ethane,	Methane	_	40 ML Via	als			2	-	Na3PO4	
TOC		_	40 ML Via	als			2	-	H2SO4	Bailer
Total Iron		_	500 ml p	lastic			_	-	HNO3	
alternate Elect	ron Acceptors	_						-	_wh	ak pump
Sampling Persor	nnel	кв	·· <u>·</u>							
Gal./Ft. 1-	ell Casing Volum '4" = 0.06 '2" = 0.09	mes 2" = 0.10 2-½" = 0			= 0.65 = 1.47					
bmp below meas °C Degrees Ce ft feet gpm Gallons per mg/L Miligrams p	elsius minute	ml mS/cm msl N/A NR	mililiter	per centimeter vel le	! !	NTU PVC s.u. umhos/cm VOC	Polyvinyl Standard Micromh	chloride Lunits os per ce		

Project _	Colesville Land	Ifill	Project -	No. <u>1</u>	VY000949.002	6 Page	1of , 1
Site Location _	Colesville, NY					Date	3/71/13
Site/Well No.	Tu.		Replica	te No		Code	No
Weather (partly Cla	udy "	0° Samplir	ng Time:	Begin 144	5 End	1510
Evacuation Dat	a			ı	Field Paramete	ers	
Measuring Point	<u> </u>			(Color	Stigh	t wellow tim
MP Elevation (ft)				(Odor	SLi	ght odor
Land Surface El	evation (ft)	SCCOON	50-70	P	Appearance	Clea	2
Sounded Well D		-	- CONT.	þ	oH (s.u.)	_(0	.71
Depth to Water	(ft bmp)			(Conductivity (mS/cm)		37 us/cm
Water-Level Ele	vation (ft)		······································		(µmhos/cm)	2,34
Water Column ir	n Well (ft)			1	Turbidity (NTU)		
Casing Diameter	r/Type	2"		1	Temperature (°	c)	1.6
Gallons in Well					Dissolved Oxyg	gen (mg/L)	_
Gallons Pumped Prior to Sa					ORP		KONEN.
Sample Pump In Setting (ft		ري'			Sampling Methor	Rideolo	Boiler what Pury
Purge Time	begin	n	end			a pos	5
Pumping Rate (g	gpm) <u>Jo</u>	ain-	2 gallons			•	
Evacuation Meth	nod <u>2" [</u>	Disposal	ole poly bailer		 		
Constituents Sar	mpled		Container Descripti	on	Num	nber	Preservative
8260B VOLATIL	ES	_	40 ML VOA Vials		3	3	HCL
Ethene, Ethane,	Methane	_	40 ML Vials		1		Na3PO4
TOC		_	40 ML Viais			2	H2SO4 W. purp
Total Iron		_	500 ml plastic	_			HNO3
alternate Electi	ron Acceptors	-				 	July shall purp
Sampling Persor	nnel	КВ			<u> </u>	<u> </u>	
Gal./Ft. 1-	/ell Casing Volum -¼" = 0.06 -½" = 0.09	nes 2" = 0.16 2-1/2" = 0		4" = 0. 6" = 1.			
bmp below meas *C Degrees Co ft feet gpm Gallons per mg/L Miligrams p	elsius r minute	ml mS/cm msl N/A NR	mililiter Milisiemens per centir mean sea-level Not Applicable Not Recorded	neter	PVC s.u. umhos/cm	Nephelometric To Polyvinyl chloride Standard units Micromhos per c Volatile Organic	entimeter

Project Coles	ville Landfill	Project No.	NY000949.0026	Page <u>1</u> of <u>1</u>
Site LocationColes	ville, NY			Date 3 26 13
Site/Well No.	N-4	Replicate No.		Code No.
Weather Cloud	y 350 windy	Sampling Time	e: Begin <u>147</u>	5 End 1435
Evacuation Data			Field Parameter	8
Measuring Point			Color	Colorless
MP Elevation (ft)	,	·	Odor	et none
Land Surface Elevation	(ft)		Appearance	Cleak
Sounded Well Depth (ff	i bmp)		pH (s.u.)	6 ,39
Depth to Water (ft bmp))		Conductivity (mS/cm)	541 w/cm
Water-Level Elevation ((ft)		(µmhos/cm)	
Water Column in Well (ft)		Turbidity (NTU)	
Casing Diameter/Type	2"	***	Temperature (°C)	9.0
Gallons in Well			Dissolved Oxyger	n (mg/L)
Gallons Pumped/Bailed Prior to Sampling			ORP	
Sample Pump Intake			Sampling Method	PDB / Bailer
Setting (ft bmp)			Remarks	Redspiried a
Purge Time	beginend	i	<u></u>	8
Pumping Rate (gpm)	-			
Evacuation Method	2" Disposable po	oly bailer		
Constituents Sampled	Cont	ainer Description	Numb	er Preservative
8260B VOLATILES	40	ML VOA Vials	<u> </u>	HCL
Ethene, Ethane, Methar	<u>10</u> 40	ML Vials	$-\frac{2}{}$	Na3PO4
TOC	40	ML Vials		H2SO4
Total Iron	500	0 ml plastic		HNO3
alternate Electron Ac	ceptors			<u> </u>
Sampling Personnel	KB			
	ing Volumes			•
Gal./Ft. 1-1/4" = 0.0 1-1/2" = 0.0		3" = 0.37 4" = 6 3-½" = 0.50 6" =		
bmp below measuring po °C Degrees Celsius ft feet gpm Gallons per minute	mS/cm Milisie msl mean N/A Not A	emens per centimeter sea-level pplicable	PVC Po s.u. St umhos/cm M	ephelometric Turbidity Units olyvinyl chloride tandard units icromhos per centimeter
mg/L Miligrams per liter	NR Not R	ecorded	voc v	olatile Organic Compounds

ARCADIS Water Sampling Log

Project	Colesville	Landfill	- Pro	oject No.	NY000949.00	<u> 26 Pag</u>	e 1 of 1		
Site Location _	Colesville,	NY				Date	3 27 13	3_	
Site/Well No	PW-	7	Re	plicate No.	*****	Code	e No		
Weather _	put s	40	Sai	mpling Time:	Begin 1	23 End	3 1128	1600 -	1610
Evacuation Da	ta				Field Parame	iters			
Measuring Poin	t			_	Color	Tusk	oid Red ?	Nw <u>or</u> E	
MP Elevation (fi	t)			=	Odor	SU	ralet		
Land Surface E	levation (ft)		-	<u>.</u>	Appearance	Tusk	Sid		
Sounded Well D	Depth (ft bmp	o) <u>(o</u>	.50		pH (s.u.)	6.	35		
Depth to Water	(ft bmp)				Conductivity (mS/cm)	30(o us/cm	-CT1.91	
Water-Level Ele	evation (ft)			_	(µmhos/cr	n)	-	8+	
Water Column i	n Well (ft)				Turbidity (NTU	J)			
Casing Diamete	er/Type	2"	- O	<u>-</u>	Temperature (°C)	11.2		
Gallons in Well		N		_	Dissolved Oxy	rgen (mg/L)			
Gallons Pumped Prior to S				10	ORP				
Sample Pump Ir Setting (ft		45'/53'			Sampling Meth	hod <u>PDB</u>	/ Bailer / wha	depump	
Purge Time		begin	end	_					
Pumping Rate (gpm) .	5 gallons	(minTI)	_	very to	which while	purging	w	
Evacuation Meth	nod .	2" Disposal	ole poly bailer	_	a wha	+ pump	wh gubs	Fast	
Constituents Sa	mpled		Container Desc	cription	Nu	mber	Preservative		
8260B VOLATIL	.ES	<u></u>	40 ML VOA \	/ials		3	HCL		
Ethene, Ethane,	Methane		40 ML Vials			2	Na3PO4		
TOC			40 ML Viais	·		2_	H2SO4		
Total Iron			500 ml plas	tic			HNO3		
alternate Elect	ron Accept	ors				4			
Sampling Persor	nnel	КВ				0 N C			
Gal./Ft. 1	/ell Casing V -¼" = 0.06 -½" = 0.09	olumes 2" = 0.10 2-½" = 0				T		-	
bmp below meas C Degrees Co ft feet gpm Gallons per mg/L Miligrams p	r minute	ml mS/cm msł N/A NR	mililiter Milisiemens per o mean sea-level Not Applicable Not Recorded	centimeter	NTU PVC s.u. umhos/cm VOC	Nephelometric Polyvinyl chloric Standard units Micromhos per Volatile Organic	de centimeter	_	

Let the well Excharge 12-4 pm

Project	Colesville Lar	<u>ndfill</u>	Project	No. 1	VY000949.0	026	Page	1 of 1
Site Location _	Colesville, N	<u> </u>					Date	3 28 13
Site/Well No.	58-5 in	Elment	Replica	te No.	Marie 1		Code I	
Weather	Cloudy	400	Samplir	ng Time:	Begin 1	130	End	1134
Evacuation Da	ta			F	ield Param	eters		
Measuring Poin	t	-		C	Color		colm	21.255
MP Elevation (fi	t)	-		c	Odor	2	0	sve.
Land Surface E	levation (ft)			A	ppearance		Clo	ar
Sounded Well E	Depth (ft bmp)	4.15)	р	H (s.u.)		165	0.78
Depth to Water	(ft bmp)	0.	30	C	Conductivity (mS/cm)			5 uslem
Water-Level Ele	evation (ft)	37			(µmhos/c			_
Water Column is	n Well (ft)	3.85	5	т	urbidity (NT	U)	Ši.	-
Casing Diamete	r/Type	2"			emperature		5	5.5
Gallons in Well		0,	62	D	issolved Ox	 ygen (mg	/L)	
Gallons Pumped Prior to Sa		2	.00	C	RP		·	
Sample Pump In Setting (ft					ampling Me	_	PĐB-/ (Bailer
Purge Time	beg	in	end					
Pumping Rate (gpm)							
Evacuation Meth	nod <u>2"</u>	Disposable	poly bailer					
Constituents Sar	mpled	Co	ontainer Description	on	Νι	umber		Preservative
8260B VOLATIL	ES		I0 ML VOA Vials			3	_	HCL
Ethene, Ethane,	Methane		0 ML Vials		_		_	Na3PO4
TOC			10 ML Vials				_	H2SO4
Total Iron	<u> </u>		500 ml plastic					HNO3
alternate Electr	on Acceptors				_			
Sampling Persor	nnel	КВ		_				
Gal./Ft. 1-1	ell Casing Volui ¼" = 0.06 ½" = 0.09	nes 2" = 0.16 2-1/2" = 0.26	3" = 0.37 3-½" = 0.50	4" = 0.6 6" = 1.4	-			
bmp below meas °C Degrees Ce ft feet gpm Gallons per mg/L Miligrams pe	uring point Isius minute	ml mili mS/cm Mili msl me N/A Not	liter siemens per centim an sea-level Applicable Recorded		NTU PVC s.u. umhos/cm VOC	Polyvinyl Standard Micromh	chloride units os per cer	bidity Units



Site Location Colesville, NY	Date 3/28/13
Site/Well No. SP-S effluint Replicate I	No
Weather Cloudy 40° Sampling	Time: Begin 1115 End 1119
Site Conditions	Field Parameters
Water Quality Meter: Multi- 3401	Color Color Less
	Odor <u>none</u>
Location Condition:	Appearance <u>CleaR</u>
Cleared Out Stream bed	•
Stained orange	pH (s.u.) <u>6.94</u>
Vegetation:	Conductivity (ms/cm) 466 us/cm
Double of Mateur	Temperature (°C) 5.5
Depth of Water:	DO (mg/L)
Estimated Flow Rate: 100 mg / 1 Sec	Turbidity (NTU)
- Too Title	ORP
Division of the state of the st	
Collection Method: Direct collection	Time
Remarks: snaked out the lin	ne 3/27/13
Constituents Sampled: See COC Samp	oling Personnel: KB

Project Colesville Landfill	Project No. NY0009	49.002 <u>6</u>	Page / of /
Site Location Colesville	, NY		Date 3/28/13
Site/Well No	-2 Replicate No		
Weather <u>Clo</u>	Sampling Tin	ne: Begin <u>1510</u>	End 1513
Site Conditions		Field Parameters	
Water Quality Meter:	multi 290i	Color	ColoRLess
		Odor _	none
Location Condition:		Appearance	Char
Cobble	to Stone		
		pH (s.u.)	7.35
Vegetation:			6
-		Conductivity (mS/cm)	81 uslem
Depth of Water:	4.5"	Temperature (°C)	4.4 1
		DO (mg/L)	
Estimated Flow Rate:	5 Sec / 5"	Turbidity (NTU)	
		ORP	
Collection Method:	Direct collection	Time	
Remarks:			
-			
Constituents Sampled:	See COC Sampline	g Personnel: K	В

Project Colesville Landfill	Project No. NY0009	949.0026	Page 1 of 1
Site Location Colesville	e, NY		Date 3 28 / 1 3
Site/Well No. 55 S	Replicate No),	
Weather Cloud	dy 40° Sampling Tir	me: Ведіп <u>1442 [*]</u>	End 1443
Site Conditions	· · · · · · · · · · · · · · · · · · ·	Field Parameters	
Water Quality Meter:	multi 340i	Color	Colorless
		Odor	none
Location Condition:		Appearance	Clear
Stor			
	×	pH (s.u.)	7.70
Vegetation:		Conductivity (mS/cm)	_97uslem
			<i>C</i> 2
Depth of Water:	3"	Temperature (°C)	5.2
		DO (mg/L)	
Estimated Flow Rate:	6.5 5ed 5'	Turbidity (NTU)	-
		ORP	-
Collection Method:	Direct collection	Time	
Remarks: ¥ SQ	.3C-SED Collected	d 1435	45 <u></u>
Son	+ growl Brown	Cittle Stains	ng + build up in
San	pling alex		
	-		
Constituents Sampled:	See COC Samplin	g Personnel: KE	3

Project Colesville Landfill	Project No. <u>NY000949.0026</u>	Page \ of \
Site Location Colesville, NY		
Site/Well No. Sw-4	Replicate No.	_
Weather Chudy 40°	Sampling Time: Begin 1324	End 1327
Site Conditions	Field Parameters	
Water Quality Meter:	340; Color	ColorLess
	Odor	7000
Location Condition:	to Stone Appearance	Clear
Orange Staining	at 50-4	
-	рН (s.u.)	7.16
Vegetation:		
dormant	Conductivity (mS/cm)	101 uslam
	Temperature (°C)	5.5
Depth of Water: 5 is	nches_	
Т с	DO (mg/L)	- Contracting -
Estimated Flow Rate:	ec (5' Turbidity (NTU)	
	ORP	
Collection Method: Direct c	collection Time	
Remarks: <u>mid Streau</u>	M	
-	100-21 100 to 5-0 = -	
Constituente Sampled: See COC	Compline Developed	KB

Sediment Sampling Form

F- (o Cloudy 40°	Replicate No		Date 3/28/13
	Fi	eld Parameters	
multi 3401		-	ColoRuss
	Staining	ppearance	Clear
Forny Just		i (s.u.)	7.65
nand	Co	onductivity (mS/cm)	108 uslam
5,5"	Te	emperature (°C)	5.4
5 Sec. / 5	Tu Tu	rbidity (NTU)	
Direct collection	o <mark>n T</mark> ìr	те	
	Store to Store	e: 5 Sec. 5 1 To	Color Odor Appearance Stone to Appearance Party Tust upstoan pH (s.u.) Conductivity (ms/cm) Temperature (°C) 5.5" DO (mg/L) Turbidity (NTU) ORP

NA 1		Project No. <u>NYUUU949</u>		Page 1 ot 1 Date 3 28 113
Site Location Site/Well No. Veather	Colesville, NY SP-2 Cloudy 400	Replicate No		Date 3 28 113
ite Condition	s		Field Parameters	
Vater Quality M	Meter: Mult	3401	Color	ColoRLISS
		3.0000.00000000000000000000000000000000	Odor	none
ocation Condit	tion:		Appearance	Clear Trace Organic
See	Below			Char Trace Organic matter
				3
			р Н (s.u.)	6.88
egetation:		'	(,	
_	sun alger - B	au blin	Conductivity (mS/cm)	87 uslam
-	3		, (,	
			Temperature (°C)	6.2
epth of Water:	7 0.5			
		1	DO (mg/L)	
stimated Flow	Rate:		Furbidity (NTU)	<u></u>
		(ORP	-
ollection Metho	od: D irect co l	tection .	lime	
		Hic Punp		
	14.00			
emarks:	Sensled 6	w North Sto	ean bank	Spring From under
	North Pata	ning wall		3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
		3 ~~~		
		3/1	A	
onstituents Sai	mpled: See COC	Sampling F		KB

Sediment Sampling Form

Project Colesville Landfill Project No. NY0009	49.0026 Page of \
Site Location Colesville, NY	Date 3 28 13
Site/Well No. 50-30 SP-30 Replicate No.	
Weather Cloudy 40° Sampling Time	e: Begin <u>1535</u> End <u>1540</u>
Site Conditions	Field Parameters
Water Quality Meter:	Color Color Less
	Odor Ook
Location Condition:	Appearance Clear Trace orange
Some orange Straning	Particles.
Vegetation:	pH (s.u.) 6. 78
Non	Conductivity (mes/cm) 192 uslcm
Depth of Water:	Temperature (°C)
***	DO (mg/L)
Estimated Flow Rate:	Turbidity (NTU)
P.	ORP
Collection Method: Direct collection	Time
Remarks: Collected Sample in water near the NO Flow at SP-3 - Rel	the packet of Flowing 2:p-laps worded to SP-3C
Constituents Sampled: See COC Sampling	Personnel: KB

Veather <u>Cloudy</u>		ne: Begin <u>1350</u>	End 1355
site Conditions		Field Parameters	
Vater Quality Meter:	nulti 3401	Color	Colorless
		Odor	DODE
ocation Condition:	ting from back	Appearance	Clear - w/ trace crange particles
Margi Hain	ma + build up		crange particles
behind Rock	is .		
		pH (s.u.)	7.02
egetation:			004.5000
NOUR		Conductivity (mS/cm)	496 us/cm
			~ \$\(\)
South of Minter	0.5"	Temperature (°C)	3.8
epth of Water:	0.5	DO (ma/L)	The Control of the Co
stimated Flow Rate:	_	DO (mg/L) Turbidity (NTU)	
	Peristaltic Purp	ORP	
ollection Method:	Direct collectio n	Time	2
emarks:	bask		
XO P13			

Proje	ct	Colesville	Landfili	Project No.	NY000949	.0026	Page	<u>1</u> of <u>1</u>
Site L	_ocation	Colesville,	NY		330	1 11	Date	3/27/13
Site/V	Well No.		W-8	Replicate No	o		Code	No
Weat	ther	Cloudy	400	Sampling Tir	me: Begin	1550	End	1552
Evac	uation D	ata			Field Para	meters		<u></u> - ,
Meas	suring Poi	int			Color		سعال	nw
MP E	levation ((ft)			Odor	_	w	А.
Land	Surface	Elevation (ft)			Appearanc	e _	<u> </u>	leak
Soun	ded Well	Depth (ft bm	p)		pH (s.u.)		<u>(</u>	65
Depth	h to Wate	er (ft bmp)			Conductivit (mS/cn		IC	48 uslem
Wate	r-Level E	levation (ft)			(µmhos	s/cm)		-
Wate	r Column	in Well (ft)			Turbidity (N	NTU)		mary .
Casin	ng Diame	ter/Type	2"		Temperatu	re (°C)		10.4
Gallo	ns in We	11			Dissolved (Oxygen (m	ig/L)	_
Gallo		ed/Bailed Sampling			ORP	-		16
Samp	ole Pump				Sampling N	_		pump
_	Setting	(ft bmp)			Remarks			
_	Time		begin	end				
	oing Rate uation Me		1537- Recircular	15.50 tion				
Const	tituents S	Sampled		Container Description		Number		Preservative
8260E	B VOLAT	ILES		40 ML VOA Vials	 .	-		HCL
Ethen	ne, Ethan	e, Methane		40 ML Vials		-	_	Na3PO4
TOC				40 ML Vials		2	_	H2SO4
TAL	Metals			500 ml plastic	 .		_	HNO3
Şamp	oling Pers	onnel	KB					
	,	Well Casing \	/olumes		·	-		
Gal./F	řt.	1-¼" = 0.06 1-½" = 0.09	2" = 0 2-1/2" =		= 0.65 = 1.47			
bmp °C ft gpm	Degrees Celsius mS/cm Milisiemens feet msl mean sea-le		n Milisiemens per centimeter mean sea-level Not Applicable	s.u. umhos/d	Polyvi Stand cm Micror	elometric Turbidity Units inyl chloride dard units mhos per centimeter		
mg/L	Miligrams	s per liter	NR	Not Recorded	VOC	Volatil	e Organic	Compounds

Project	Colesville Lan	dfill		Project No.	NY000949	9.0026	_ Page	1 of 1
Site Location	Colesville, NY			**	3200 1/5		Date	3/28/13
Site/Well No.	IW-3			Replicate No.	-		Code	No
Weather	Cloudy !	υ°		Sampling Time	: Begin	1017	End	1015
Evacuation Da	ıta				Field Para	meters		
Measuring Poir	nt			· - · ,	Color		Stial	it gray tim
MP Elevation (1	(t)				Odor		SLigh	* odoR
Land Surface E	levation (ft)				Appearance	се	Clear	ζ
Sounded Well I	Depth (ft bmp)	56	.05		pH (s.u.)		(0.1	80
Depth to Water	(ft bmp)	38.	75		Conductiv		60	o uslem
Water-Level Ele	evation (ft)	38.7	5		(µmho	s/cm)	do Inchesión	- Up
Water Column	in Well (ft)				Turbidity (NTU)		
Casing Diamete	er/Type	2"		W	Temperatu	ıre (°C)	<u> </u>	1.8
Gallons in Well					Dissolved	Oxygen (mg/L)	
Gallons Pumpe Prior to S					ORP			
Sample Pump I Setting (1					Sampling I Remarks	Method 	whale	pump
Purge Time	beg	in	end					
Pumping Rate (gpm)	955 -	1010					
Evacuation Met	hod Re	circulation	<u> </u>					
Constituents Sa	ımpled	(Container D	escription		Number		Preservative
8260B VOLATII	LES		40 ML VC	A Vials		_		HCL
Ethene, Ethane	, Methane		40 ML Via	ıls		_		Na3PO4
TOC			40 ML Via	is		2		H2SO4
TAL Metals	<u></u>		500 ml p	lastic				HNO3
Sampling Perso	nnel	KB						
V	Veli Casing Volu	nes						· · · · · · · · · · · · · · · · · · ·
	-¼" = 0.06 -½" = 0.09	2" = 0.16 $2-\frac{1}{2}" = 0.2$	3" = 26 3-½":	0.37 4" = 0 = 0.50 6" = 1				
bmp below mea C Degrees C ft feet gpm Gallons pe mg/L Miligrams	er minute	mS/cm N msl n N/A N	nililiter Milisiemens p nean sea-lev lot Applicabl lot Recorded	e	NTU PVC s.u. umhos/ VOC	Poly Stan cm Micro	nelometric Tu vinyl chloride dard units omhos per ce tile Organic (entimeter

Project	Colesville Lan	dfill	_	Project No.	NY00094	9.0026	Page	of	1
Site Location	Colesville, NY		7.9	2			Date	3 58	13
Site/Well No.	IW-13	3	F	Replicate No.			Code	No	
Weather	Cloudy	<u>35°</u>		Sampling Time	e: Begin	1057	End	1058	_
Evacuation Da	ita		_		Field Par	ameters			
Measuring Poin	nt				Color		40110	w tin	+
MP Elevation (f	t)				Odor		med:	wn	
Land Surface E	levation (ft)				Appearan	ce	Clear	Tin	y particles
Sounded Well [Depth (ft bmp)				ρΗ (s.u.)		6	.66	<u> </u>
Depth to Water	(ft bmp)			_	Conductiv (mS/c		92	l us	100
Water-Level Ele	evation (ft)				(µmho	os/cm)			
Water Column i	n Well (ft)				Turbidity ((NTU)	_		
Casing Diamete	er/Type	2"			Temperati	ure (°C)	10.	.3	
Gallons in Well					Dissolved	Oxygen (n	ng/L)		
Gallons Pumped Prior to S					ORP		Ŷ	-	
Sample Pump In Setting (f					Sampling Remarks	•	whale	pump	
Purge Time	beg	in	end	<u> </u>					
Pumping Rate (gpm) <u>10</u>	38-	056						
Evacuation Met	hod Re	circulati	on						
Constituents Sa	mpled		Container De	escription		Number		Preservat	ive
8260B VOLATIL	.ES		40 ML VO	A Vials		-		HCL	
Ethene, Ethane,	Methane	_	40 ML Vial	s		_	_	Na3PO4	
TOC	· · · · · · · · · · · · · · · · · · ·	_	40 ML Vial	s		2		H2SO4	
TAL Metals		_	500 ml pla	astic				HNO3	
Sampling Perso	nnel	- KB							
V	Vell Casing Volur	nes							
	-¼" = 0.06 -½" = 0.09	2" = 0.1 $2^{-1/2}" = 0$							
bmp below mea C Degrees C ft feet gpm Gallons pe mg/L Miligrams	r minute	ml	milliliter Millisiemens per mean sea-leve Not Applicable Not Recorded	er centimeter	NTU PVC s.u. umhos/ VOC	Polyvi Stand /cm Micro	elometric Tu inyl chloride lard units mhos per ce le Organic C	entimeter	