



## Periodic Review Report

202 – 218 Morgan Avenue BCP Site

(BCP Site #C224133)

November 22, 2016 to November 22, 2017 Reporting Period

Rolling Frito-Lay Sales, LP

**GHD** | One Remington Park Drive Cazenovia NY 13035 USA

8616480 | 370 | January 5, 2018



## Executive Summary

The 202-218 Morgan Avenue Brownfield Cleanup Program (BCP) Site (BCP Site #224133) consists of approximately 2.85-acres of land located at 202-218 Morgan Avenue, Borough of Brooklyn, Kings County, New York. The Site owner is Rolling Frito-Lay Sales, LP (Frito-Lay). The Site soil and groundwater was historically found to be contaminated with metals, polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs), and Site soil vapor was found to be contaminated with volatile organic compounds (VOCs). The Site was remediated to industrial use cleanup standards and received a Certificate of Completion (COC) from the New York State Department of Environmental Conservation (NYSDEC) on November 6, 2013.

The Site is currently in the monitoring stage, including annual inspections and annual groundwater monitoring, with groundwater samples being collected from on-Site and off-Site monitoring wells. In general, increasing and decreasing concentrations are observed for the various parameters across the Site, with no distinct discernable trends recognizable at this time. However, off-Site groundwater monitoring well MW-7 appears to have a generally increasing trend in concentrations of chlorinated VOCs, with tetrachloroethene being detected above groundwater standards for the first time during the 2017 monitoring event. In addition, concentrations of trichloroethene, cis-1,2-dichloroethene, and vinyl chloride have historically been detected at concentrations above groundwater standards in samples taken from MW-7 and appear to further indicate a generally increasing trend in chlorinated VOC concentrations off-site. The concentrations of detected compounds in Site groundwater samples do not indicate the need for further assessment or further action at this time. It is noted that the Site groundwater quality could be influenced by the adjacent English Kills and/or upgradient groundwater for certain compounds.

The institutional controls and engineering controls for the Site remain in place and effective for protecting human health and the environment. The soil cover engineering controls remain in place and functioning as intended. At the time of the annual Site inspection (November 16, 2017), it was noted that minor woody vegetation growth should be removed from the stone rip-rap portion of the Site during regular maintenance and that woody growth should be monitored periodically as part of routine maintenance to determine if removal is required. Annual groundwater monitoring has been completed in accordance with the Site Management Plan (SMP). There are no new buildings constructed on-Site and the existing warehouse on the adjacent property to the north has not been expanded. As a result, there is no need for a sub-slab depressurization system (SSDS) engineering control. The institutional and engineering controls certification form, as issued by the Department, has been completed and included as Appendix A.

There is no need to revise the SMP or propose a change to the frequency of PRR submittals at this time. Groundwater will continue to be monitored on an annual basis and Site inspections will continue to be performed on an annual basis, in accordance with the SMP. If buildings are constructed in the future they will be evaluated to determine if mitigation of soil vapor intrusion is necessary. The requirements necessary to discontinue Site monitoring and Site Engineering and Institutional Controls have not been met at this time.



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# 1. Introduction

## 1.1 Purpose

This Periodic Review Report (PRR) is being submitted on behalf of Rolling Frito-Lay Sales, LP (Frito-Lay) for the 202-218 Morgan Avenue Brownfield Cleanup Program (BCP) Site (BCP Site No. C224133) located at 202-218 Morgan Avenue, Borough of Brooklyn, Kings County, New York (Figure 1). The purpose of this PRR, and attached documents, is to document that institutional and engineering controls, as described in the New York State Department of Environmental Conservation (NYSDEC)-approved Site Management Plan (SMP) and Environmental Easement (EE), are in place in accordance with 6NYCRR Part 375-3. The following elements are included in this report:

- A complete description of all institutional and/or engineering controls employed at the Site
- An evaluation of the plans developed for implementation of the engineering and institutional controls, regarding the continued effectiveness of any institutional and/or engineering controls required by the decision document for the Site
- A certification prepared by a professional engineer or qualified environmental professional that the institutional controls and/or engineering controls employed at the Site during the period are:
  - Unchanged from the previous certification, unless approved by the Department, consistent with the SMP
  - In place and effective
  - Performing as designed, and that nothing has occurred that would (1) impair the ability of the controls to protect public health and the environment, or (2) constitute a violation or failure to comply with any operation and maintenance plan for such controls
- The institutional and engineering controls certification form as issued by the Department has been completed and included as Appendix A
- Data tables and figures depicting results of annual groundwater monitoring activities conducted on- and off-Site.

## 1.2 Certification Period

NYSDEC requested that this PRR cover the period between November 22, 2016 and November 22, 2017. During this period, Frito-Lay performed regular inspections of the soil cover engineering control on-Site. GHD Consulting Services Inc. (GHD), on behalf of Frito-Lay, performed annual groundwater monitoring, conducted an annual visual inspection of engineering controls on-Site, and prepared this PRR.



### 1.3 Scope and Limitations

This report has been prepared by GHD for Rolling Frito-Lay Sales, LP and may only be used and relied on by Rolling Frito-Lay Sales, LP for the purpose agreed between GHD and Rolling Frito-Lay Sales, LP as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Rolling Frito-Lay Sales, LP arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report based in part on information provided by Rolling Frito-Lay Sales, LP and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the Site may be different from the Site conditions found at the specific sample points.

Investigations undertaken in respect of this report are constrained by the particular Site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant Site features and conditions may have been identified in this report.

Site conditions (including the presence of hazardous substances and/or Site contamination) may change after the date of this report. GHD does not accept responsibility arising from, or in connection with, any change to the Site conditions. GHD is also not responsible for updating this report if the Site conditions change without further authorization to do so by Rolling Frito-Lay Sales, LP.



## 2. Site Overview

The Site is located in the Borough of Brooklyn, Kings County, New York and is identified as Block 2942 and Lots 105, 111, and 112 on the NYSDEC Institutional and Engineering Controls Certification Form. Information obtained from the New York City Finance Department online Tax Maps identifies the Site as Block 2942 and Lot 105, with no matching records for Lots 111 and 112. The Site is approximately 3.23-acres of land, of which approximately 2.85-acres were entered into the BCP. The Site is bound by an adjacent parcel to the north owned by Rolling Frito-Lay Sales, LP and used for distribution activities; English Kills to the east; the English Kills basin and an adjacent industrial parcel to the south; and Morgan Avenue to the west with commercial and industrial properties further west (see Figure 2).

The Site is currently developed with an asphalt pavement parking area used for parking Frito-Lay delivery vehicles and employee vehicles. The portion of the Site not occupied by asphalt pavement consists of minor grass covered landscaping areas and rip-rap adjacent to English Kills and the English Kills basin.

The Remedial Investigation (RI), which was conducted under Brownfield Cleanup Agreement (BCA Index #A2-0622-0709) during 2009 and 2010, characterized the nature and extent of contamination at the Site. The results of the RI, as reported in the *Revised Remedial Investigation Report* (Gannett Fleming, P.C., July 2010) and the *Supplemental Remedial Investigation and Second Supplemental Remedial Investigation Report* (Gannett Fleming, P.C., April 2011) determined that contaminants of concern (COCs) were present in Site soil, groundwater, and soil vapor. It was determined that Site surface and subsurface soils contained arsenic, lead, mercury, polychlorinated biphenyls (PCBs), and semi-volatile organic compounds (SVOCs) at concentrations that exceeded the Unrestricted Use Soil Cleanup Objectives (SCOs). Analytical results of Site groundwater samples identified arsenic, lead, and volatile organic compounds (VOCs) at concentrations that exceeded the Technical and Operational Guidance Series (TOGS) Class GA groundwater standards or guidance values. VOCs were also detected in Site soil vapor samples.

A Remedial Work Plan (RWP) was prepared by Gannett Fleming, P.C. (August 2011). The remedial goals for the Site included:

- removing or eliminating significant threats to human health and the environment
- protecting human health and the environment during the contemplated future use of the Site, which was identified as industrial, heavy manufacturing, in accordance with the BCA and DER-10.

The proposed remedial approach was to remediate the Site to a Track 4 Restricted Use by meeting the Industrial Use SCOs. This remediation approach included excavation of soil/fill exceeding Site-specific remedial action objectives (RAOs), excavation of soil/fill exceeding the Industrial Use SCOs, and implementation of engineering/institutional controls. Remedial activities were completed at the Site in February 2013. Soil/fill excavation included:

- the removal of approximately 16,513 tons of hazardous PCB soil (PCB concentrations in excess of 50 mg/kg)



- the removal of approximately 4,096 tons of non-hazardous PCB soil (PCB concentrations in excess of 10 mg/kg or 25 mg/kg, depending on the excavation area)
- the removal of approximately 619 tons of arsenic, lead, and mercury contaminated soil with concentrations exceeding the Protection of Groundwater and/or Industrial Use SCOs
- the placement of imported clean fill material back into the excavation areas.

Excavated soil/fill was transported for off-Site disposal. The PCB excavated soils that were identified as hazardous were reportedly managed in accordance with TSCA regulations.

The selected remedy for groundwater remediation was natural attenuation, based on the fact that VOC daughter products were present in several on-Site groundwater monitoring wells, which suggests that degradation is occurring and can be expected to continue over time. Also, sensitive receptors were not identified downgradient of the Site and the Site and surrounding area is serviced by a municipal water supply system.

The engineering controls for the Site consist of maintaining the soil cover system and requiring the installation of a sub-slab depressurization system (SSDS) in any new buildings constructed on-Site, or in future expansions added to the Frito-Lay warehouse located on the adjoining property to the north. The institutional controls include a Site groundwater use restriction, a Site use restriction restricting the use to industrial uses, and the requirement that a SSDS will be installed in any future buildings constructed on-Site.

An Environmental Easement (EE) for the Site was filed with the Kings County Clerk's Office on September 20, 2013. A Site Management Plan, which outlines Site restrictions and requirements of future maintenance and monitoring, was completed in September 2013. A Certificate of Completion allowing for industrial uses of the Site was received from the NYSDEC on November 6, 2013.

The reader of this PRR may refer to previous reports for more detail, as needed. These reports include:

- *Subsurface Investigation*, Gannett Fleming, P.C., 2003.
- *Phase I Environmental Site Assessment*, Gannett Fleming, P.C., 2006.
- *Surface Pile Characterization Work Plan*, Gannett Fleming, P.C., 2007.
- *Phase II Environmental Site Assessment*, Gannett Fleming, P.C., 2007.
- *Remedial Investigation*, Gannett Fleming, P.C., 2009.
- *Supplemental Remedial Investigation*, Gannett Fleming, P.C., 2010.
- *Second Supplemental Remedial Investigation*, Gannett Fleming, P.C., 2011.
- *Remedial Work Plan*, Gannett Fleming, P.C., 2011.
- *Site Management Plan*, Frito-Lay, Brooklyn, New York, NYSDEC Site Number: C224133, Gannett Fleming Engineers, P.C., September 2013.
- *Final Engineering Report*, Frito-Lay, Brooklyn, Kings County, New York, NYSDEC Site Number: C224133, Gannett Fleming Engineers, P.C., October 2013.
- *202-218 Morgan Avenue BCP Site Annual Post-Remediation Groundwater Monitoring Letter Report*, GHD Consulting Services Inc., August 1, 2014.





- *202-218 Morgan Avenue BCP Site (BCP Site #C224133) – Periodic Review Report, November 6, 2013 – November 22, 2014, GHD Consulting Services Inc., December 2014.*
- *202-218 Morgan Avenue BCP Site (BCP Site #C224133) – Annual Post-Remediation Groundwater Monitoring – 2015, GHD Consulting Services Inc., August 12, 2015.*
- *202-218 Morgan Avenue BCP Site (BCP Site #C224133) – Periodic Review Report, November 22, 2014 – November 22, 2015, GHD Consulting Services Inc., February 12, 2016.*
- *202-218 Morgan Avenue BCP Site (BCP Site #C224133) – Annual Post-Remediation Groundwater Monitoring – 2016, GHD Consulting Services Inc., September 15, 2016.*
- *202-218 Morgan Avenue BCP Site (BCP Site #C224133) – Periodic Review Report, November 22, 2015 – November 22, 2016, GHD Consulting Services Inc., January 6, 2017.*
- *202-218 Morgan Avenue BCP Site (BCP Site #C224133) – Annual Post-Remediation Groundwater Monitoring – 2017, GHD Consulting Services Inc., July 28, 2017.*



## 3. Institutional and Engineering Controls

Based on identified soil, groundwater, and soil vapor contamination, and the Site's past and present use, institutional and engineering controls are utilized at the Site to limit exposure risks. These institutional and engineering controls are described below.

### 3.1 Institutional Controls

The institutional controls (ICs) for this Site are outlined in the NYSDEC-approved SMP (Gannett Fleming Engineers, P.C., September 2013) and adherence to these ICs is required by the Environmental Easement. The ICs for the Site include the following:

- the property may only be used for industrial uses provided that the long-term engineering and institutional controls included in the NYSDEC-approved SMP are employed
- the property may not be used for a higher level of use, such as, unrestricted, residential, restricted residential, and/or commercial use without additional remediation and amendment of the EE, as approved by the NYSDEC
- all future activities on the property that will disturb remaining contamination must be conducted in accordance with the NYSDEC-approved SMP
- the use of groundwater underlying the property is prohibited without treatment rendering it safe for intended use and prior approval by NYSDEC
- the potential for soil vapor intrusion must be evaluated for any buildings developed on Site, or expansions added to the existing warehouse to the north, and any potential impacts that are identified must be monitored and/or mitigated
- vegetable gardens and farming on the property are prohibited
- the Site owner or remedial party will submit to the NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and (2) nothing has occurred that impairs the ability of the controls to protect public health and the environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such property any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow, and will be made by an expert that the NYSDEC finds acceptable.

#### 3.1.1 Site Use

The Site use has not changed since the NYSDEC issued the Certificate of Completion and is currently used for industrial uses and parking of Frito-Lay company/delivery and employee vehicles.

#### 3.1.2 Groundwater

Groundwater is not being used at the Site.



Monitored natural attenuation groundwater monitoring was conducted as outlined in the NYSDEC-approved SMP during this PRR reporting period (May 2017). Laboratory analytical results were tabulated and submitted to the NYSDEC (GHD, July 28, 2017) and to the NYSDEC's EQUIS Database. Results of groundwater monitoring did not warrant revision of the monitoring schedule or analytical list.

### 3.1.3 Excavations

No excavations occurred on-Site during this PRR's certification period.

## 3.2 Engineering Controls

The engineering controls (ECs) for this Site are outlined in the NYSDEC-approved SMP (Gannett Fleming Engineers, P.C., September 2013), and include the following:

### 3.2.1 Asphalt and Soil (Engineered) Cover Systems

Direct contact with soil/fill at the Site is mitigated by a soil cover system in place over the entirety of the Site. This soil cover system is comprised of a minimum of 6 inches of asphalt pavement or a minimum of 1-foot of clean soil/fill, consisting of maintained landscape areas or rip rap. The location of the soil cover system is depicted in Figure 3.

The soil cover system was in place for the duration of the certification period and no maintenance was required to amend the soil cover system. At the time of the annual Site inspection (November 16, 2017), it was noted that minor surface cracks were present in the asphalt pavement but were not significant enough to warrant additional action at the time. The remainder of the soil cover system was in good repair.

Additional information can be found in the Institutional and Engineering Controls Certification Form (Appendix A) and the Annual Inspection Form (Appendix B).

### 3.2.2 Chain Linked Fence

To prevent unauthorized access to the Site, a 10-foot high chain linked fence was installed along the eastern, western, and southern boundaries. Access to the Site from the northern boundary is controlled by the adjacent property, which is also owned by Frito-Lay.

The chain linked fence was in good condition at the time of the annual Site inspection (November 16, 2017) and appeared to be effective in limiting unauthorized access to the Site.

### 3.2.3 Sub-Slab Depressurization System

A sub-slab depressurization system (SSDS) will be required to be installed in any new buildings constructed on-Site or if the warehouse on the adjacent property to the north, which is also owned by Frito-Lay, is expanded or renovated.

At the time of the annual Site inspection (November 16, 2017) no new buildings had been constructed on-Site and the adjacent warehouse to the north had not been expanded. Therefore, no SSDS is required at this time.



## 4. Operations and Monitoring

The NYSDEC-approved SMP (Gannett Fleming Engineers, P.C., September 2013) requires annual groundwater monitoring and reporting. The annual monitoring is intended to assess the performance of the remedy and overall reduction in contamination on-Site. The annual groundwater monitoring was completed in accordance with the SMP (Figures 4, 5, 6, and 7 and Tables 1, 2, and 3). The laboratory sample results were transmitted to the NYSDEC in the Annual Post-Remediation Groundwater Monitoring letter report (GHD, July 28, 2017) and were also successfully uploaded into the NYSDEC's EQulS Database on August 2, 2017 (Appendix C). Table 3 summarizes laboratory analytical results of groundwater samples taken since remediation was completed at the Site. The groundwater results are compared to Class GA groundwater quality standards or guidance values from the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS 1.1.1, June 1998 and subsequent addenda).

In general, since post-remediation baseline samples were taken, concentrations of analytes detected in groundwater samples have both increased and decreased, with no consistent Site-wide trends recognizable at this time. Overall the number of contaminants detected above groundwater standards are limited as noted in the tables and figures. However, off-Site groundwater monitoring well MW-7 appears to have a generally increasing trend in concentrations of chlorinated VOCs, with tetrachloroethene being detected above groundwater standards for the first time during the 2017 monitoring event. In addition, concentrations of trichloroethene, cis-1,2-dichloroethene, and vinyl chloride have historically been detected at concentrations above groundwater standards in samples taken from MW-7 and appear to further indicate a generally increasing trend in chlorinated VOC concentrations off-site. In addition, the concentrations of barium in off-site groundwater monitoring well MW-8 appears to have an increasing trend. The detected contaminants in MW-7 and MW-8 are likely related to an off-site source. The concentrations of detected compounds in Site groundwater samples do not indicate the need for further assessment or further action at this time. It is noted that the Site groundwater quality could be influenced by the tidal water dynamics of the adjacent English Kills and/or upgradient groundwater for certain compounds.

Based on the groundwater data received to date, the qualitative exposure assessment assumptions regarding on-Site and off-site contamination have not changed and are still valid. As future groundwater monitoring events occur, the data will be reviewed to determine if any compound-specific or Site-wide trends (decreasing or increasing) can be identified.

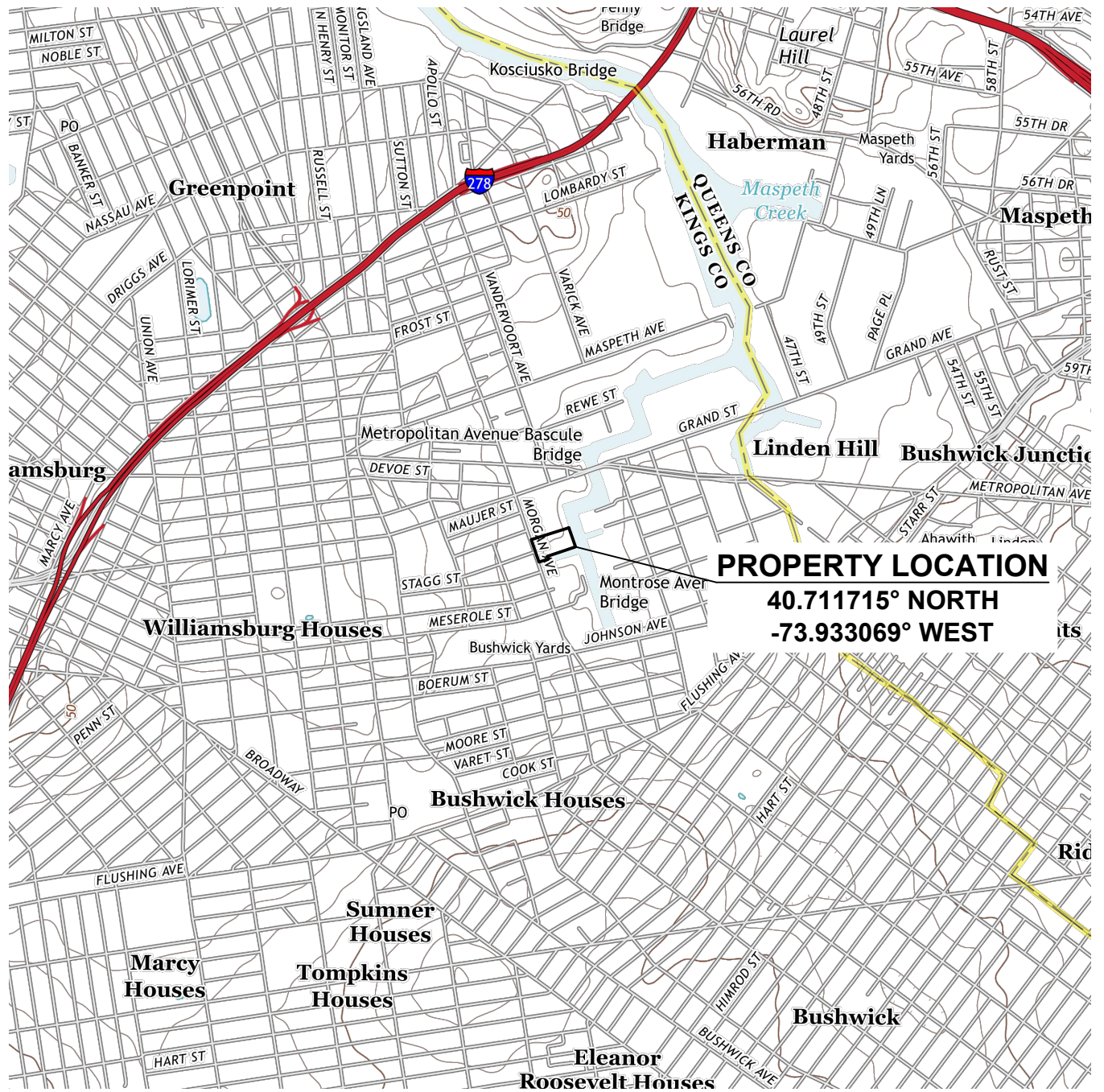


## 5. Recommendations

Based on a review of the annual groundwater data, it is recommended that the ICs and ECs currently in place for the Site remain in place in order to ensure the continued effectiveness and protectiveness of the remedy. The trends in groundwater quality associated with the off-site monitoring wells MW-7 and MW-8 should continue to be assessed for potential impacts to Site groundwater quality. Groundwater monitoring should continue to be conducted on an annual basis, as identified in the SMP, until the May 2018 monitoring event, after which the monitoring results should be reviewed and modifications to future monitoring requirements, if any, should be recommended to the NYSDEC. The effectiveness of the remedy should continue to be evaluated through analytical results from the groundwater monitoring events.

The minor surface cracks in the asphalt pavement should be periodically monitored to ensure they are not progressing to the point where potential exposure to remaining contamination could occur or could compromise the engineering control. Also, the woody growth along the perimeter should be periodically removed to control potential impacts to the cover system. The annual Site inspections should be continued to ensure that the Site use has not changed and the engineering controls are in place and functioning as intended.

# Figures



**PROPERTY LOCATION**

**40.711715° NORTH**

**-73.933069° WEST**



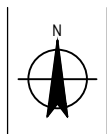
QUADRANGLE LOCATION

CONTOUR INTERVAL: 10 FEET

MAP TAKEN FROM: USGS 7.5 MINUTE SERIES  
 TOPOGRAPHIC QUADRANGLES:  
 BROOKLYN, NY (2013)  
 (U.S. GEOLOGICAL SURVEY WEBSITE)



SCALE 1"=2000' AT ORIGINAL SIZE



Rolling Frito-Lay Sales, LP  
 Periodic Review Report - Nov. 22, 2016 to Nov. 22,  
 2017 - 202-218 Morgan Avenue BCP Site (#C224133)

Job Number | 86-16480  
 Revision | A  
 Date | 12.18.2017

Site Location Map

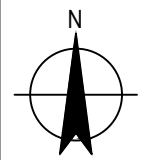
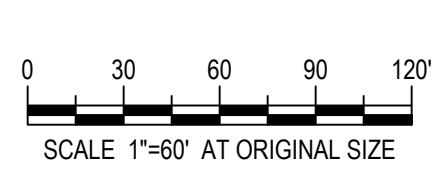
Figure 1



**LEGEND:**

◆ Groundwater Monitoring Well Location and ID

MW-1



**NOTES:**

1. Aerial photograph is a 2014, 6-inch resolution, true color image taken from the U.S. Geological Survey website: <http://earthexplorer.usgs.gov/>

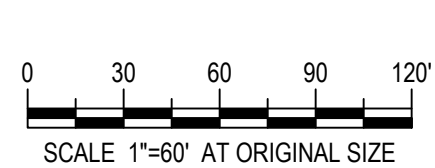
2. Site features taken from an as-built field survey completed by PS&S on August 21, 2013.



Rolling Frito-Lay Sales, LP Job Number 86-16480  
 Periodic Review Report - Nov. 22, 2016 to Nov. 22, 2017 - 202-218 Morgan Avenue BCP Site (#C224133) Revision A  
 Date 12.18.2017

Site Layout **Figure 2**





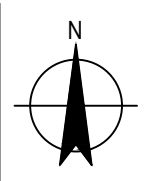
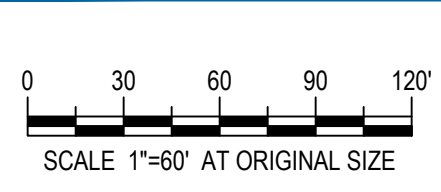
NOTES:  
 1. Aerial photograph is a 2014, 6-inch resolution, true color image taken from the U.S. Geological Survey website: <http://earthexplorer.usgs.gov/>  
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 Engineering Controls

Job Number 86-16480  
 Revision A  
 Date 12.18.2017

**Figure 3**



**NOTES:**

1. Only analytes that exceed groundwater standards are shown here. For complete results, see tables in report.
2. Aerial photograph is a 2014, 6-inch resolution, true color image taken from the U.S. Geological Survey website: <http://earthexplorer.usgs.gov/>
3. Site features taken from an as-built field survey completed by PS&S on August 21, 2013.



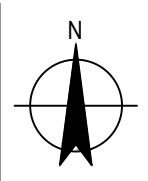
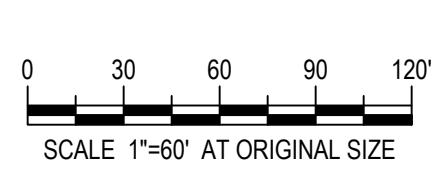
Rolling Frito-Lay Sales, LP  
 Periodic Review Report - Nov. 22, 2016 to Nov. 22, 2017 - 202-218 Morgan Avenue BCP Site (#C224133)  
**Exceedances of Groundwater Standards - Total Metals**

Job Number 86-16480  
 Revision A  
 Date 12.18.2017  
**Figure 4**



**LEGEND:**

- Groundwater Monitoring Well Location and ID
- Conc. ug/L Detected Concentration in ug/L (5-22-2017)
- ug/L - micrograms per liter, parts per billion



**NOTES:**

1. Only analytes that exceed groundwater standards are shown here. For complete results, see tables in report.
2. No dissolved metals samples taken from MW-1, MW-2R, MW-4, MW-5, and MW-6 due to observation of low turbidity water (i.e., less than 10 NTU) at the time of sampling.
3. Aerial photograph is a 2014, 6-inch resolution, true color image taken from the U.S. Geological Survey website: <http://earthexplorer.usgs.gov/>
4. Site features taken from an as-built field survey completed by PS&S on August 21, 2013.



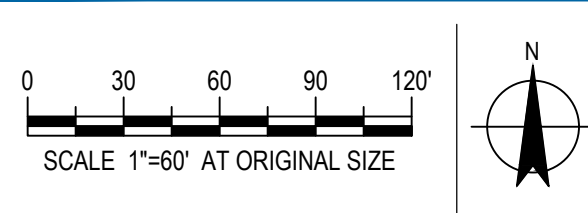
Rolling Frito-Lay Sales, LP  
 Periodic Review Report - Nov. 22, 2016 to Nov. 22, 2017 - 202-218 Morgan Avenue BCP Site (#C224133)  
**Exceedances of Groundwater Standards - Dissolved Metals**

Job Number 86-16480  
 Revision A  
 Date 12.18.2017  
**Figure 5**



**LEGEND:**

- Groundwater Monitoring Well Location and ID
- Conc. ug/L Detected Concentration in ug/L (5-22-2017)
- ug/L - micrograms per liter, parts per billion



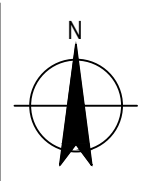
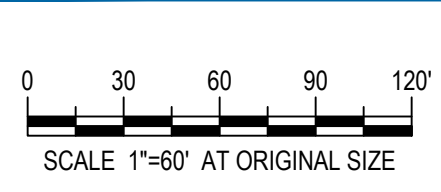
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 Periodic Review Report - Nov. 22, 2016 to Nov. 22, 2017 - 202-218 Morgan Avenue BCP Site (#C224133)  
**Exceedances of Groundwater Standards - Other Analytes**

Job Number 86-16480  
 Revision A  
 Date 12.18.2017  
**Figure 6**



**NOTES:**  
 1. Aerial photograph is a 2014, 6-inch resolution, true color image taken from the U.S. Geological Survey website: <http://earthexplorer.usgs.gov/>  
 2. Site features taken from an as-built field survey completed by PS&S on August 21, 2013.



Rolling Frito-Lay Sales, LP  
 Periodic Review Report - Nov. 22, 2016 to Nov. 22, 2017 - 202-218 Morgan Avenue BCP Site (#C224133)  
**Groundwater Elevation and Flow Direction**

Job Number 86-16480  
 Revision A  
 Date 12.18.2017  
**Figure 7**

# Tables



Table 1: (Page 1 of 1) Groundwater Elevation Data. 202-218 Morgan Avenue BCP Site, Brooklyn, NY, BCP Site #C224133.

Monitoring Well I.D.	Date	Reference Point	Reference Elevation (feet)	DTW (feet)	DOW (feet)	Water Elevation (feet)	Well Volume (gal)
MW-1	2009	Top of PVC	9.93	-	-	1.74	-
	2011			-	-	1.54	-
	5/14/2014			9.07	16.33	0.86	1.16
	6/4/2015			9.74	16.38	0.19	1.06
	5/26/2016			9.55	16.24	0.38	1.07
	5/22/2017			9.24	16.93	0.69	1.23
MW-2R	2009	Top of PVC	10.26	-	-	2.71	-
	2011			-	-	0.40	-
	7/4/2015			9.75	17.92	0.51	1.31
	6/4/2015			9.69	17.92	0.57	1.32
	5/26/2016			10.22	17.61	0.04	1.18
	5/22/2017			9.53	17.95	0.73	1.35
MW-4	2009	Top of PVC	10.22	-	-	2.04	-
	2011			-	-	0.54	-
	5/14/2014			9.91	16.48	0.31	1.05
	6/4/2015			10.50	16.45	-0.28	0.95
	5/26/2016			10.76	16.28	-0.54	0.88
	5/22/2017			10.15	16.60	0.07	1.03
MW-5	2009	Top of PVC	10.77	-	-	1.76	-
	2011			-	-	-0.80	-
	5/14/2014			11.01	18.69	-0.24	1.23
	6/4/2015			9.91	18.6	0.86	1.39
	5/26/2016			12.65	18.58	-1.88	0.95
	5/22/2017			11.25	18.7	-0.48	1.19
MW-6	2009	Top of PVC	10.22	-	-	1.11	-
	2011			-	-	0.80	-
	5/14/2014			10.36	17.05	-0.14	1.07
	6/4/2015			10.81	17.08	-0.59	1.00
	5/26/2016			10.97	16.88	-0.75	0.95
	5/22/2017			10.55	17.10	-0.33	1.05
MW-7	2009	Top of PVC	11.11	-	-	2.92	-
	2011			-	-	1.48	-
	5/14/2014			8.17	15.42	2.94	1.16
	6/4/2015			8.33	16.42	2.78	1.29
	5/26/2016			8.32	15.22	2.79	1.10
	5/22/2017			8.15	15.45	2.96	1.17
MW-8	2009	Top of PVC	11.43	-	-	2.50	-
	2011			-	-	2.32	-
	5/14/2014			8.85	14.45	2.58	0.90
	6/4/2015			8.92	14.45	2.51	0.88
	5/26/2016			8.70	14.20	2.73	0.88
	5/22/2017			8.88	14.60	2.55	0.92

DTW - depth to water

DOW - depth of well

DTW and DOW measurements taken prior to purging using an electronic water level meter

2009 and 2011 groundwater elevation information taken from the Site Management Plan prepared by Gannett Fleming (September 2013)

Reference elevations taken from as-built plan prepared by PS&S (August 21, 2013)



Table 2: (Page 1 of 1) Groundwater Field Parameter Data. 202-218 Morgan Avenue BCP Site, Brooklyn, NY, BCP Site #C224133.

Well I.D.	Date	Time	Temp (°C)	Conductivity (mS/cm)	Salinity (%)	Dissolved Oxygen (mg/L)	pH (units)	ORP (mV)	Turbidity (NTU)	Amount Purged (gal)	Comments
MW-1	5/22/2017	14:50	15.6	2.429	1.56	0.30	6.93	-77.7	70.6	3.50	Duplicate sample taken here. No dissolved metals sample taken.
		14:55	15.5	2.550	1.68	0.00	6.90	-91.3	48.2		
		15:00	15.5	2.657	1.72	0.00	6.85	-104.4	20.1		
		15:05	15.4	2.690	1.73	0.00	6.84	-115.2	17.1		
		15:10	15.4	2.710	1.75	0.00	6.83	-123.6	15.1		
		15:15	15.4	2.735	1.77	0.00	6.83	-129.0	11.5		
		15:20	15.4	2.765	1.79	0.00	6.83	-136.9	8.6		
		15:30	15.5	2.845	1.84	0.00	6.82	-148.5	2.1		
MW-2R	5/22/2017	15:56	15.0	1.558	0.99	0.22	7.08	-157.1	21.8	3.00	Water turbid gray, blocky organic-like sheen, sulfur-like odor, cleared with purge. No dissolved metals sample taken.
		16:00	15.0	1.566	0.99	0.05	7.06	-164.6	24.0		
		16:05	15.0	1.581	1.00	0.00	7.05	-168.0	23.4		
		16:10	15.0	1.591	1.01	0.00	7.04	-170.9	16.6		
		16:15	15.0	1.580	1.00	0.00	7.04	-173.7	20.1		
		16:20	15.0	1.588	1.01	0.00	7.04	-175.4	14.3		
		16:25	15.0	1.595	1.01	0.00	7.04	-176.0	13.3		
		16:30	15.0	1.603	1.02	0.00	7.04	-176.8	11.9		
MW-4	5/22/2017	11:00	14.9	2.501	1.63	0.32	7.47	-50.6	202.3	3.00	Water turbid gray, sulfur odor, no sheen, cleared with purge. No dissolved metals sample taken.
		11:05	14.6	2.491	1.63	0.09	7.42	-97.7	16.2		
		11:17	15.1	2.530	1.64	-0.03	7.46	-226.7	370.2		
		11:22	15.1	2.533	1.64	-0.07	7.44	-282.2	256.0		
		11:28	15.1	2.534	1.64	-0.07	7.44	-299.5	128.0		
		11:32	15.1	2.535	1.64	0.80	7.44	-267.1	17.8		
		11:38	15.1	2.537	1.64	-0.02	7.45	-300.7	9.3		
		11:42	15.1	2.547	1.65	-0.06	7.44	-313.2	9.1		
MW-5	5/22/2017	11:47	15.1	2.547	1.65	-0.07	7.45	-318.2	8.9	1.00	MS/MSD sample taken here. No dissolved metals sample taken.
		11:50	13.7	10.920	6.23	0.13	6.78	-85.1	87.6		
		11:55	13.6	10.890	6.20	0.60	6.21	-80.7	58.6		
		12:00	13.6	18.860	6.19	0.33	6.88	-53.0	17.6		
		12:05	13.6	10.816	6.16	0.40	6.88	-62.8	21.8		
		12:10	13.6	8.426	6.14	0.65	6.90	-42.7	3.3		
		12:15	13.6	8.440	6.13	0.70	6.90	-47.7	3.2		
		12:20	13.6	8.410	6.12	0.04	6.91	-47.1	1.7		
MW-6	5/22/2017	13:41	15.8	2.965	1.90	0.00	7.39	-318.0	129.2	3.00	Water turbid black, no sheen, sulfur-like odor, cleared with purge. No dissolved metals sample taken.
		13:51	15.6	3.125	2.04	3.42	7.29	-284.3	98.7		
		13:59	15.8	3.370	2.18	0.38	7.29	-312.7	60.3		
		14:06	15.7	2.643	1.69	1.33	7.51	-244.5	31.0		
		14:12	16.1	2.867	1.85	0.14	7.44	-258.7	22.3		
		14:17	15.5	3.198	2.08	0.03	7.32	-326.0	13.8		
		14:23	15.5	3.471	2.27	0.06	7.24	-375.9	9.3		
		14:27	15.5	3.463	2.26	0.01	7.26	-384.0	8.8		
MW-7	5/22/2017	14:30	15.5	3.453	2.25	0.00	7.26	-390.1	8.4	2.00	Water rusty orange with rusty orange floaters, cleared with purge, no sheen, slight sulfur-like odor. Dissolved metals sample taken.
		17:40	15.3	0.636	0.39	0.12	7.09	95.9	674.2		
		17:48	14.9	0.652	0.40	0.07	7.03	-79.2	86.5		
		17:53	14.9	0.649	0.40	0.00	7.03	-84.0	166.6		
		17:59	14.8	0.654	0.40	0.00	7.03	-88.6	384.7		
		18:05	14.8	0.662	0.41	0.00	7.03	-92.5	82.9		
		18:10	14.8	0.671	0.41	0.00	7.04	-94.4	64.7		
		18:15	14.9	0.678	0.42	0.00	7.03	-96.8	57.4		
MW-8	5/22/2017	17:10	14.8	6.213	4.30	0.20	6.55	-48.9	37.9	0.75	Dissolved metals sample taken.
		17:15	14.7	6.272	4.35	0.13	6.56	-54.4	28.4		
		17:20	14.7	6.371	4.46	0.12	6.56	-57.7	15.7		
		17:25	14.7	6.419	4.45	0.10	6.56	-62.5	12.5		
		17:30	14.7	6.494	4.51	0.08	6.57	-61.5	10.9		

Field parameters collected during purging using a YSI ProDSS with flow thru cell and GeoPump peristaltic pump





**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	MW-1	MW-1	MW-1	MW-1	MW-1
		Monitoring Event	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-1	MW-1	MW-1	MW-1	MW-1
VOCs							
1,1,1-trichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1,2,2-tetrachloroethane	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/L		-	<2.5U	-	<0.7U	<0.7U
1,1,2-trichloroethane	µg/L	1	<1U	<1.5U	<1.5U	<0.5U	<0.5U
1,1-dichloroethane	µg/L	5	<1U	<2.5U	<b>0.81J</b>	<0.7U	<0.7U
1,1-dichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,2,3-trichlorobenzene	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
1,2,4-trichlorobenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromo-3-chloropropane	µg/L	<b>0.04</b>	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromoethane	µg/L	5	<1U	<2U	<2U	<0.65U	<0.65U
1,2-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dichloroethane	µg/L	<b>0.6</b>	<0.5U	<0.5U	<0.5U	<0.13U	<0.13U
1,2-dichloropropane	µg/L	1	<1U	<1U	<1U	<0.13U	<0.14U
1,3-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dioxane	µg/L		-	<250U	<250U	<41U	<61U
2-butanone	µg/L	<b>50<sup>#1</sup></b>	<1U	<5U	<5U	<1.9U	<1.9U
2-hexanone	µg/L	<b>50<sup>#1</sup></b>	<1U	<5U	<5U	<1U	<1U
4-methyl-2-pentanone	µg/L		<1U	<5U	<5U	<1U	<1U
Acetone	µg/L	<b>50<sup>#1</sup></b>	<10U	<b>2.7J</b>	<5U	<1.5U	<b>4.8J</b>
Benzene	µg/L	1	<0.5U	<0.5U	<0.5U	<0.16U	<0.16U
Bromochloromethane	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
Bromodichloromethane	µg/L	5	<1U	<0.5U	<0.5U	<0.19U	<0.19U
Bromoform	µg/L	<b>50<sup>#1</sup></b>	<1UJ	<2U	<2U	<0.65U	<0.65U
Bromomethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Carbon disulfide	µg/L	<b>60<sup>#1</sup></b>	<1U	<5U	<5U	<1U	<1U
Carbon tetrachloride	µg/L	5	<1U	<0.5U	<0.5U	<0.13U	<0.13U
Chlorobenzene	µg/L	5	1	<b>0.72J</b>	<b>0.81J</b>	<b>0.77J</b>	<b>0.71J</b>
Chloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroform	µg/L	7	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloromethane	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,2-dichloroethene	µg/L	5	<1U	<b>2.1J</b>	<b>2.7</b>	<b>1.5J</b>	<b>80</b>
cis-1,3-dichloropropene	µg/L	<b>0.4</b>	<1U	<0.5U	<0.5U	<0.14U	<0.14U
Cyclohexane	µg/L		<1U	<10U	-	<0.27U	<0.27U
Dibromochloromethane	µg/L	<b>50<sup>#1</sup></b>	<1U	<0.5U	<0.5U	<0.15U	<0.15U
Dichlorodifluoromethane	µg/L	5	<1U	<5U	<5U	<1U	<1U
Ethylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Isopropylbenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
Methyl acetate	µg/L		-	<2U	-	<0.23U	<0.23U
Methyl cyclohexane	µg/L		<1U	<10U	-	<0.4U	<0.4U
Methyl tert butyl ether	µg/L	<b>10<sup>#1</sup></b>	1.5	4.6	<b>21</b>	5	7
Methylene chloride	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
o-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
p/m-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
Styrene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Tetrachloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Toluene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,3-dichloropropene	µg/L	<b>0.4</b>	<1U	<0.5U	<0.5U	<0.16U	<0.16U
Trichloroethene	µg/L	5	<1UJ	<b>0.17J</b>	<0.5U	<0.18U	<0.18U
Trichlorofluoromethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Vinyl chloride	µg/L	2	0.4	<b>5.8</b>	<b>24</b>	<b>9.9</b>	<b>92</b>

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

<sup>#1</sup> - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	MW-2R	MW-2R	MW-2R	MW-2R	MW-2R
		Monitoring Event	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-2R	MW-2R	MW-2R	MW-2R	MW-2R
VOCS		TOGS 1.1.1					
1,1,1-trichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1,2,2-tetrachloroethane	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/L		-	<2.5U	-	<0.7U	<0.7U
1,1,2-trichloroethane	µg/L	1	<1U	<1.5U	<1.5U	<0.5U	<0.5U
1,1-dichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1-dichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,2,3-trichlorobenzene	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
1,2,4-trichlorobenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromo-3-chloropropane	µg/L	0.04	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromoethane	µg/L	5	<1U	<2U	<2U	<0.65U	<0.65U
1,2-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dichloroethane	µg/L	0.6	<0.5U	<0.5U	<0.5U	<0.13U	<0.13U
1,2-dichloropropane	µg/L	1	<1U	<1U	<1U	<0.13U	<0.14U
1,3-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dioxane	µg/L		-	<250U	<250U	<41U	<61U
2-butanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1.9U	<1.9U
2-hexanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
4-methyl-2-pentanone	µg/L		<1U	<5U	<5U	<1U	<1U
Acetone	µg/L	50 <sup>#1</sup>	<10U	2.3J	<5U	<1.5U	<1.5U
Benzene	µg/L	1	<0.5U	<0.5U	<0.5U	<0.16U	<0.16U
Bromochloromethane	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
Bromodichloromethane	µg/L	5	<1U	<0.5U	<0.5U	<0.19U	<0.19U
Bromoform	µg/L	50 <sup>#1</sup>	<1UJ	<2U	<2U	<0.65U	<0.65U
Bromomethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Carbon disulfide	µg/L	60 <sup>#1</sup>	<1U	<5U	2.2J	<1U	<1U
Carbon tetrachloride	µg/L	5	<1U	<0.5U	<0.5U	<0.13U	<0.13U
Chlorobenzene	µg/L	5	1	<2.5U	<2.5U	<0.7U	<0.7U
Chloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroform	µg/L	7	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloromethane	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.14U	<0.14U
Cyclohexane	µg/L		<1U	<10U	-	<0.27U	<0.27U
Dibromochloromethane	µg/L	50 <sup>#1</sup>	<1U	<0.5U	<0.5U	<0.15U	<0.15U
Dichlorodifluoromethane	µg/L	5	<1U	<5U	<5U	<1U	<1U
Ethylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Isopropylbenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
Methyl acetate	µg/L		-	<2U	-	<0.23U	<0.23U
Methyl cyclohexane	µg/L		<1U	<10U	-	<0.4U	<0.4U
Methyl tert butyl ether	µg/L	10 <sup>#1</sup>	1.6	1.6J	1.1J	<0.7U	0.77J
Methylene chloride	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
o-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
p/m-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
Styrene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Tetrachloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Toluene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.16U	<0.16U
Trichloroethene	µg/L	5	<1UJ	<0.5U	<0.5U	<0.18U	<0.18U
Trichlorofluoromethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Vinyl chloride	µg/L	2	4.7	<1U	3.4	2.5	0.98J

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

<sup>#1</sup> - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	MW-4	MW-4	MW-4	MW-4	MW-4
		Monitoring Event	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-4	MW-4	MW-4	MW-4	MW-4
VOCs							
1,1,1-trichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1,2,2-tetrachloroethane	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/L		-	<2.5U	-	<0.7U	<0.7U
1,1,2-trichloroethane	µg/L	1	<1U	<1.5U	<1.5U	<0.5U	<0.5U
1,1-dichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1-dichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,2,3-trichlorobenzene	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
1,2,4-trichlorobenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromo-3-chloropropane	µg/L	0.04	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromoethane	µg/L	5	<1U	<2U	<2U	<0.65U	<0.65U
1,2-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dichloroethane	µg/L	0.6	<0.5U	<0.5U	<0.5U	<0.13U	<0.13U
1,2-dichloropropane	µg/L	1	<1U	<1U	<1U	<0.13U	<0.14U
1,3-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dioxane	µg/L		-	<250U	<250U	<41U	<61U
2-butanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1.9U	<1.9U
2-hexanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
4-methyl-2-pentanone	µg/L		<1U	<5U	<5U	<1U	<1U
Acetone	µg/L	50 <sup>#1</sup>	4	5	<5U	2.3J	5.9
Benzene	µg/L	1	<0.5U	<0.5U	<0.5U	<0.16U	<0.16U
Bromochloromethane	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
Bromodichloromethane	µg/L	5	<1U	<0.5U	<0.5U	<0.19U	<0.19U
Bromoform	µg/L	50 <sup>#1</sup>	<1UJ	<2U	<2U	<0.65U	<0.65U
Bromomethane	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
Carbon disulfide	µg/L	60 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
Carbon tetrachloride	µg/L	5	<1U	<0.5U	<0.5U	<0.13U	<0.13U
Chlorobenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroform	µg/L	7	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloromethane	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.14U	<0.14U
Cyclohexane	µg/L		<1U	<10U	-	<0.27U	<0.27U
Dibromochloromethane	µg/L	50 <sup>#1</sup>	<1U	<0.5U	<0.5U	<0.15U	<0.15U
Dichlorodifluoromethane	µg/L	5	<1UJ	<5U	<5U	<1U	<1U
Ethylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Isopropylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Methyl acetate	µg/L		-	<2U	-	<0.23U	<0.23U
Methyl cyclohexane	µg/L		<1U	<10U	-	<0.4U	<0.4U
Methyl tert butyl ether	µg/L	10 <sup>#1</sup>	4	13	11	32	37
Methylene chloride	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
o-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
p/m-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
Styrene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Tetrachloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Toluene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.16U	<0.16U
Trichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Trichlorofluoromethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Vinyl chloride	µg/L	2	<1U	<1U	<1U	<0.07U	<0.07U

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

<sup>#1</sup> - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	MW-5	MW-5	MW-5	MW-5	MW-5
		Monitoring Event	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-5	MW-5	MW-5	MW-5	MW-5
VOCs							
1,1,1-trichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1,2,2-tetrachloroethane	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/L		-	<2.5U	-	<0.7U	<0.7U
1,1,2-trichloroethane	µg/L	1	<1U	<1.5U	<1.5U	<0.5U	<0.5U
1,1-dichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1-dichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,2,3-trichlorobenzene	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
1,2,4-trichlorobenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromo-3-chloropropane	µg/L	0.04	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromoethane	µg/L	5	<1U	<2U	<2U	<0.65U	<0.65U
1,2-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dichloroethane	µg/L	0.6	<0.5U	<0.5U	<0.5U	<0.13U	<0.13U
1,2-dichloropropane	µg/L	1	<1U	<1U	<1U	<0.13U	<0.14U
1,3-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dioxane	µg/L		-	<250U	<250U	<41U	<61U
2-butanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1.9U	<1.9U
2-hexanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
4-methyl-2-pentanone	µg/L		<1U	<5U	<5U	<1U	<1U
Acetone	µg/L	50 <sup>#1</sup>	<10U	2.2J	<5U	<1.5U	<1.5U
Benzene	µg/L	1	<0.5U	<0.5U	<0.5U	<0.16U	<0.16U
Bromochloromethane	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
Bromodichloromethane	µg/L	5	<1U	<0.5U	<0.5U	<0.19U	<0.19U
Bromoform	µg/L	50 <sup>#1</sup>	<1UJ	<2U	<2U	<0.65U	<0.65U
Bromomethane	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
Carbon disulfide	µg/L	60 <sup>#1</sup>	<1U	<5U	3.5J	<1U	<1U
Carbon tetrachloride	µg/L	5	<1U	<0.5U	<0.5U	<0.13U	<0.13U
Chlorobenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroform	µg/L	7	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloromethane	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.14U	<0.14U
Cyclohexane	µg/L		<1U	<10U	-	<0.27U	<0.27U
Dibromochloromethane	µg/L	50 <sup>#1</sup>	<1U	<0.5U	<0.5U	<0.15U	<0.15U
Dichlorodifluoromethane	µg/L	5	<1UJ	<5U	<5U	<1U	<1U
Ethylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Isopropylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Methyl acetate	µg/L		-	<2U	-	<0.23U	<0.23U
Methyl cyclohexane	µg/L		<1U	<20U	-	<0.4U	<0.4U
Methyl tert butyl ether	µg/L	10 <sup>#1</sup>	16	9.3	10	5.8	7.9
Methylene chloride	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
o-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
p/m-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
Styrene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Tetrachloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Toluene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.16U	<0.16U
Trichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Trichlorofluoromethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Vinyl chloride	µg/L	2	<1U	<1U	<1U	<0.07U	<0.07U

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	MW-6	MW-6	MW-6	MW-6	MW-6
		Monitoring Event	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-6	MW-6	MW-6	MW-6	MW-6
VOCS		TOGS 1.1.1					
1,1,1-trichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1,2,2-tetrachloroethane	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/L		-	<2.5U	-	<0.7U	<0.7U
1,1,2-trichloroethane	µg/L	1	<1U	<1.5U	<1.5U	<0.5U	<0.5U
1,1-dichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1-dichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,2,3-trichlorobenzene	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
1,2,4-trichlorobenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromo-3-chloropropane	µg/L	0.04	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromoethane	µg/L	5	<1U	<2U	<2U	<0.65U	<0.65U
1,2-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dichloroethane	µg/L	0.6	<0.5U	<0.5U	<0.5U	<0.13U	<0.13U
1,2-dichloropropane	µg/L	1	<1U	<1U	<1U	<0.13U	<0.14U
1,3-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dioxane	µg/L		-	<250U	<250U	<41U	<61U
2-butanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1.9U	<1.9U
2-hexanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
4-methyl-2-pentanone	µg/L		<1U	<5U	<5U	<1U	<1U
Acetone	µg/L	50 <sup>#1</sup>	12	3.7J	<5U	2J	9.8
Benzene	µg/L	1	1.1	<0.5U	0.34J	<0.16U	<0.16U
Bromochloromethane	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
Bromodichloromethane	µg/L	5	<1U	<0.5U	<0.5U	<0.19U	<0.19U
Bromoform	µg/L	50 <sup>#1</sup>	<1UJ	<2U	<2U	<0.65U	<0.65U
Bromomethane	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
Carbon disulfide	µg/L	60 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
Carbon tetrachloride	µg/L	5	<1U	<0.5U	<0.5U	<0.13U	<0.13U
Chlorobenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroform	µg/L	7	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloromethane	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.14U	<0.14U
Cyclohexane	µg/L		<1U	<10U	-	<0.27U	<0.27U
Dibromochloromethane	µg/L	50 <sup>#1</sup>	<1U	<0.5U	<0.5U	<0.15U	<0.15U
Dichlorodifluoromethane	µg/L	5	<1UJ	<5U	<5U	<1U	<1U
Ethylbenzene	µg/L	5	1	<2.5U	<2.5U	<0.7U	<0.7U
Isopropylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Methyl acetate	µg/L		-	<2U	-	<0.23U	<0.23U
Methyl cyclohexane	µg/L		<1U	<10U	-	<0.4U	<0.4U
Methyl tert butyl ether	µg/L	10 <sup>#1</sup>	16	14	17	14	5
Methylene chloride	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
o-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
p/m-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
Styrene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Tetrachloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Toluene	µg/L	5	4.4	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.16U	<0.16U
Trichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Trichlorofluoromethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Vinyl chloride	µg/L	2	<1U	<1U	<1U	<0.07U	<0.07U

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	MW-7	MW-7	MW-7	MW-7	MW-7
		Monitoring Event	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-7	MW-7	MW-7	MW-7	MW-7
VOCs							
1,1,1-trichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1,2,2-tetrachloroethane	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/L		-	<2.5U	-	<0.7U	<0.7U
1,1,2-trichloroethane	µg/L	1	<1U	<1.5U	<1.5U	<0.5U	<0.5U
1,1-dichloroethane	µg/L	5	<1U	0.75J	1.1J	<0.7U	<0.7U
1,1-dichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	0.22J
1,2,3-trichlorobenzene	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
1,2,4-trichlorobenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromo-3-chloropropane	µg/L	0.04	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromoethane	µg/L	5	<1U	<2U	<2U	<0.65U	<0.65U
1,2-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dichloroethane	µg/L	0.6	<0.5U	<0.5U	<0.5U	<0.13U	<0.13U
1,2-dichloropropane	µg/L	1	<1U	<1U	<1U	<0.13U	<0.14U
1,3-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dioxane	µg/L		-	<250U	<250U	<41U	<61U
2-butanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1.9U	<1.9U
2-hexanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
4-methyl-2-pentanone	µg/L		<1U	<5U	<5U	<1U	<1U
Acetone	µg/L	50 <sup>#1</sup>	<10U	1.6J	<5U	<1.5U	<1.5U
Benzene	µg/L	1	0.2	2.3	4	0.66	0.54
Bromochloromethane	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
Bromodichloromethane	µg/L	5	<1U	<0.5U	<0.5U	<0.19U	<0.19U
Bromoform	µg/L	50 <sup>#1</sup>	<1UJ	<2U	<2U	<0.65U	<0.65U
Bromomethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Carbon disulfide	µg/L	60 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
Carbon tetrachloride	µg/L	5	<1U	<0.5U	<0.5U	<0.13U	<0.13U
Chlorobenzene	µg/L	5	1	<2.5U	<2.5U	<0.7U	<0.7U
Chloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroform	µg/L	7	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloromethane	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,2-dichloroethene	µg/L	5	1.2	16	6.1	17	52
cis-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.14U	<0.14U
Cyclohexane	µg/L		<1U	<10U	-	<0.27U	<0.27U
Dibromochloromethane	µg/L	50 <sup>#1</sup>	<1U	<0.5U	<0.5U	<0.15U	<0.15U
Dichlorodifluoromethane	µg/L	5	<1U	<5U	<5U	<1U	<1U
Ethylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Isopropylbenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
Methyl acetate	µg/L		-	<2U	-	<0.23U	<0.23U
Methyl cyclohexane	µg/L		<1U	<10U	-	<0.4U	<0.4U
Methyl tert butyl ether	µg/L	10 <sup>#1</sup>	<0.5U	<2.5U	<2.5U	<0.7U	<0.7U
Methylene chloride	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
o-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
p/m-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
Styrene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Tetrachloroethene	µg/L	5	<1U	2.2	0.52	1.8	11
Toluene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,2-dichloroethene	µg/L	5	<1U	<2.5U	0.78J	<0.7U	<0.7U
trans-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.16U	<0.16U
Trichloroethene	µg/L	5	1.4J	9.1	2.2	4.8	20
Trichlorofluoromethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Vinyl chloride	µg/L	2	2.7	5.5	5.6	12	8

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	MW-8	MW-8	MW-8	MW-8	MW-8
		Monitoring Event	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-8	MW-8	MW-8	MW-8	MW-8
VOCs		TOGS 1.1.1					
1,1,1-trichloroethane	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,1,2,2-tetrachloroethane	µg/L	5	<1UJ	<0.5U	<0.5U	<0.14U	<0.17U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/L		-	<2.5U	-	<0.7U	<0.7U
1,1,2-trichloroethane	µg/L	1	<1U	<1.5U	<1.5U	<0.5U	<0.5U
1,1-dichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,1-dichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,2,3-trichlorobenzene	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
1,2,4-trichlorobenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromo-3-chloropropane	µg/L	0.04	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromoethane	µg/L	5	<1U	<2U	<2U	<0.65U	<0.65U
1,2-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dichloroethane	µg/L	0.6	<0.5U	<0.5U	<0.5U	<0.13U	<0.13U
1,2-dichloropropane	µg/L	1	<1U	<1U	<1U	<0.13U	<0.14U
1,3-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dioxane	µg/L		-	<250U	<250U	<41U	<61U
2-butanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1.9U	<1.9U
2-hexanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
4-methyl-2-pentanone	µg/L		<1U	<5U	<5U	<1U	<1U
Acetone	µg/L	50 <sup>#1</sup>	<10U	1.4J	<5U	<1.5U	<1.5U
Benzene	µg/L	1	<0.5U	<0.5U	<0.5U	<0.16U	<0.16U
Bromochloromethane	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
Bromodichloromethane	µg/L	5	<1U	<0.5U	<0.5U	<0.19U	<0.19U
Bromoform	µg/L	50 <sup>#1</sup>	<1U	<2U	<2U	<0.65U	<0.65U
Bromomethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Carbon disulfide	µg/L	60 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
Carbon tetrachloride	µg/L	5	<1U	<0.5U	<0.5U	<0.13U	<0.13U
Chlorobenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroform	µg/L	7	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloromethane	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.14U	<0.14U
Cyclohexane	µg/L		<1U	<10U	-	<0.27U	<0.27U
Dibromochloromethane	µg/L	50 <sup>#1</sup>	<1U	<0.5U	<0.5U	<0.15U	<0.15U
Dichlorodifluoromethane	µg/L	5	<1U	<5U	<5U	<1U	<1U
Ethylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Isopropylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Methyl acetate	µg/L		-	<2U	-	<0.23U	<0.23U
Methyl cyclohexane	µg/L		<1U	<10U	-	<0.4U	<0.4U
Methyl tert butyl ether	µg/L	10 <sup>#1</sup>	<0.5U	<2.5U	<2.5U	<0.7U	<0.7U
Methylene chloride	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
o-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
p/m-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
Styrene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Tetrachloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Toluene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.16U	<0.16U
Trichloroethene	µg/L	5	<1UJ	<0.5U	<0.5U	<0.18U	<0.18U
Trichlorofluoromethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Vinyl chloride	µg/L	2	<1U	<1U	<1U	<0.07U	<0.07U

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	Duplicate	Duplicate	Duplicate	Duplicate	
		Monitoring Event	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-2R	MW-5	MW-2R	MW-1	MW-1
TOGS 1.1.1							
VOCs							
1,1,1-trichloroethane	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,1,2,2-tetrachloroethane	µg/L	5	<1UJ	<0.5U	<0.5U	<0.14U	<0.17U
1,1,2-trichloro-1,2,2-trifluoroethane	µg/L		-	<2.5U	-	<0.7U	<0.7U
1,1,2-trichloroethane	µg/L	1	<1U	<1.5U	<1.5U	<0.5U	<0.5U
1,1-dichloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	0.7J
1,1-dichloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.14U	<0.17U
1,2,3-trichlorobenzene	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
1,2,4-trichlorobenzene	µg/L	5	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromo-3-chloropropane	µg/L	0.04	<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dibromoethane	µg/L	5	<1U	<2U	<2U	<0.65U	<0.65U
1,2-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,2-dichloroethane	µg/L	0.6	<0.5U	<0.5U	<0.5U	<0.13U	<0.13U
1,2-dichloropropane	µg/L	1	<1U	<1U	<1U	<0.13U	<0.14U
1,3-dichlorobenzene	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dichlorobenzene	µg/L		<1UJ	<2.5U	<2.5U	<0.7U	<0.7U
1,4-dioxane	µg/L		-	<250U	<250U	<41U	<61U
2-butanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1.9U	<1.9U
2-hexanone	µg/L	50 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
4-methyl-2-pentanone	µg/L		<1U	<5U	<5U	<1U	<1U
Acetone	µg/L	50 <sup>#1</sup>	<10U	2.7J	<5U	<1.5U	<1.5U
Benzene	µg/L	1	<0.5U	<0.5U	<0.5U	<0.16U	<0.16U
Bromochloromethane	µg/L		-	<2.5U	<2.5U	<0.7U	<0.7U
Bromodichloromethane	µg/L	5	<1U	<0.5U	<0.5U	<0.19U	<0.19U
Bromoform	µg/L	50 <sup>#1</sup>	<1U	<2U	<2U	<0.65U	<0.65U
Bromomethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Carbon disulfide	µg/L	60 <sup>#1</sup>	<1U	<5U	<5U	<1U	<1U
Carbon tetrachloride	µg/L	5	<1U	<0.5U	<0.5U	<0.13U	<0.13U
Chlorobenzene	µg/L	5	<1U	<2.5U	<2.5U	0.86J	<0.7U
Chloroethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloroform	µg/L	7	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Chloromethane	µg/L		<1U	<2.5U	<2.5U	<0.7U	<0.7U
cis-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	1.7J	66
cis-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.14U	<0.14U
Cyclohexane	µg/L		<1U	<10U	-	<0.27U	<0.27U
Dibromochloromethane	µg/L	50 <sup>#1</sup>	<1U	<0.5U	<0.5U	<0.15U	<0.15U
Dichlorodifluoromethane	µg/L	5	<1U	<5U	<5U	<1U	<1U
Ethylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Isopropylbenzene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Methyl acetate	µg/L		-	<2U	-	<0.23U	<0.23U
Methyl cyclohexane	µg/L		<1U	<10U	-	<0.4U	<0.4U
Methyl tert butyl ether	µg/L	10 <sup>#1</sup>	<0.5U	10	0.99J	5.5	4.8
Methylene chloride	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
o-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
p/m-xylene	µg/L	5	-	<2.5U	<2.5U	<0.7U	<0.7U
Styrene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Tetrachloroethene	µg/L	5	<1U	<0.5U	<0.5U	<0.18U	<0.18U
Toluene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,2-dichloroethene	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
trans-1,3-dichloropropene	µg/L	0.4	<1U	<0.5U	<0.5U	<0.16U	<0.16U
Trichloroethene	µg/L	5	<1UJ	<0.5U	<0.5U	<0.18U	<0.18U
Trichlorofluoromethane	µg/L	5	<1U	<2.5U	<2.5U	<0.7U	<0.7U
Vinyl chloride	µg/L	2	6.2	<1U	3.5	6.8	100

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

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U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards





**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-1	MW-1	MW-1	MW-1	MW-1
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-1	MW-1	MW-1	MW-1	MW-1
<b>TOGS 1.1.1</b>							
<b>Total Metals</b>							
Aluminum, Total	µg/L		220	2,710	5,230	1,000	19.8
Antimony, Total	µg/L	<b>3</b>	<12U	<b>6.53</b>	2.1	0.7J	<0.42U
Arsenic, Total	µg/L	<b>25</b>	<8U	4.26	12.1	2.5	1.54
Barium, Total	µg/L	<b>1000</b>	180	218.7	333.3	235.6	284.9
Beryllium, Total	µg/L	<b>3<sup>#1</sup></b>	<4U	0.17J	0.4J	<0.2U	<0.1U
Cadmium, Total	µg/L	<b>5</b>	<4U	0.83	2.1	0.5	0.06J
Calcium, Total	µg/L		210,000	166,000	211,000	189,000	276,000
Chromium, Total	µg/L	<b>50</b>	<50U	35.47	<b>91.6</b>	18.2	2.89
Cobalt, Total	µg/L		<20U	3.58	7.9	2	1.16
Copper, Total	µg/L	<b>200</b>	<50U	66.06	180	17.7	0.71J
Iron, Total	µg/L	<b>300</b>	<b>4,100</b>	<b>21,500</b>	<b>24,000</b>	<b>7,160</b>	<b>3,710</b>
Lead, Total	µg/L	<b>25</b>	6	<b>147.4</b>	<b>360.1</b>	<b>85.7</b>	0.84J
Magnesium, Total	µg/L	<b>35000<sup>#1</sup></b>	<b>36,000</b>	29,100	<b>36,200</b>	31,100	<b>39,200</b>
Manganese, Total	µg/L	<b>300</b>	<b>3,000</b>	<b>2,458</b>	<b>3,322</b>	<b>2,939</b>	<b>2,792</b>
Mercury, Total	µg/L	<b>0.7</b>	<1U	<b>3.27</b>	<b>0.81</b>	0.14J	<0.06U
Nickel, Total	µg/L	<b>100</b>	<50U	30.45	69.1	18.4	9.44
Potassium, Total	µg/L		18,000	13,900	17,500	16,300	20,700
Selenium, Total	µg/L	<b>10</b>	<40U	1.03J	2J	<1U	<1.73U
Silver, Total	µg/L	<b>50</b>	<20U	0.66	1.6	0.1J	<0.16U
Sodium, Total	µg/L	<b>20000</b>	<b>220,000J</b>	<b>290,000</b>	<b>315,000</b>	<b>342,000</b>	<b>477,000</b>
Thallium, Total	µg/L	<b>0.5<sup>#1</sup></b>	<10U	0.04J	0.1J	<0.1U	<0.14U
Vanadium, Total	µg/L		<50U	9.55	34.1	4.3J	<1.57U
Zinc, Total	µg/L	<b>2000<sup>#1</sup></b>	<50U	298.2	952.9	104.2	4.44J
<b>Dissolved Metals</b>							
Aluminum, Dissolved (Filtered)	µg/L		<180U	9.6J	10.6	8J	-
Antimony, Dissolved (Filtered)	µg/L	<b>3</b>	<12U	0.17J	0.1J	1.2J	-
Arsenic, Dissolved (Filtered)	µg/L	<b>25</b>	8.3	1.68	0.8	2.2	-
Barium, Dissolved (Filtered)	µg/L	<b>1000</b>	140	175.8	195.9	200.1	-
Beryllium, Dissolved (Filtered)	µg/L	<b>3<sup>#1</sup></b>	<4U	<0.5U	<0.5U	<0.2U	-
Cadmium, Dissolved (Filtered)	µg/L	<b>5</b>	<4U	<0.2U	<0.5U	<0.1U	-
Calcium, Dissolved (Filtered)	µg/L		180,000	193,000	159,000	198,000	-
Chromium, Dissolved (Filtered)	µg/L	<b>50</b>	<50U	3.34	3.04	2.9	-
Cobalt, Dissolved (Filtered)	µg/L		<20U	0.82	1.3	1.3	-
Copper, Dissolved (Filtered)	µg/L	<b>200</b>	<50U	0.64J	0.3J	<0.3U	-
Iron, Dissolved (Filtered)	µg/L	<b>300</b>	<b>760</b>	<b>7,470</b>	<b>5,360</b>	<b>1,920</b>	-
Lead, Dissolved (Filtered)	µg/L	<b>25</b>	<4U	<1U	<1U	0.2J	-
Magnesium, Dissolved (Filtered)	µg/L	<b>35000<sup>#1</sup></b>	30,000	27,300	30,800	30,300	-
Manganese, Dissolved (Filtered)	µg/L	<b>300</b>	<b>2,500</b>	<b>2,728</b>	<b>2,886</b>	<b>3,222</b>	-
Mercury, Dissolved (Filtered)	µg/L	<b>0.7</b>	<1U	<0.2U	<0.2U	<0.06U	-
Nickel, Dissolved (Filtered)	µg/L	<b>100</b>	<50U	7.43	10.17	14.1	-
Potassium, Dissolved (Filtered)	µg/L		15,000	14,200	15,800	16,400	-
Selenium, Dissolved (Filtered)	µg/L	<b>10</b>	<40U	1.29J	<100U	<1U	-
Silver, Dissolved (Filtered)	µg/L	<b>50</b>	<20U	<0.4U	<5U	<0.1U	-
Sodium, Dissolved (Filtered)	µg/L	<b>20000</b>	<b>190,000J</b>	<b>356,000</b>	<b>298,000</b>	<b>382,000</b>	-
Thallium, Dissolved (Filtered)	µg/L	<b>0.5<sup>#1</sup></b>	<10U	<0.5U	<0.5U	<0.1U	-
Vanadium, Dissolved (Filtered)	µg/L		<50U	0.35J	<5U	<0.6U	-
Zinc, Dissolved (Filtered)	µg/L	<b>2000<sup>#1</sup></b>	<50U	2.48J	4.87J	<2.6U	-

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

<sup>#1</sup> - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID Monitoring Round Well ID	MW-2R	MW-2R	MW-2R	MW-2R	MW-2R
			Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
			MW-2R	MW-2R	MW-2R	MW-2R	MW-2R
<b>TOGS 1.1.1</b>							
<b>Total Metals</b>							
Aluminum, Total	µg/L		4,200J	404	1,690	33	193
Antimony, Total	µg/L	<b>3</b>	<12U	<b>3.12</b>	2.1	0.3J	<0.42U
Arsenic, Total	µg/L	<b>25</b>	<8U	<b>36.36</b>	7.8	6.8	6.51
Barium, Total	µg/L	<b>1000</b>	200	192.8	227.1	227.7	298
Beryllium, Total	µg/L	<b>3<sup>#1</sup></b>	<4U	0.1J	0.2J	<0.2U	<0.1U
Cadmium, Total	µg/L	<b>5</b>	<4U	0.19J	0.1J	<0.1U	0.2
Calcium, Total	µg/L		320,000	88,100	93,300	73,700	73,300
Chromium, Total	µg/L	<b>50</b>	<50U	10.5	10.4	0.5J	1.01
Cobalt, Total	µg/L		<20U	1.18	2.6	0.2	0.23J
Copper, Total	µg/L	<b>200</b>	<50U	20.21	30.9	<0.3U	2.47
Iron, Total	µg/L	<b>300</b>	<b>13,000J</b>	<b>58,600</b>	<b>24,100</b>	<b>14,000</b>	<b>14,100</b>
Lead, Total	µg/L	<b>25</b>	<b>120J</b>	<b>73.18</b>	<b>178</b>	1.9	13.48
Magnesium, Total	µg/L	<b>35000<sup>#1</sup></b>	<b>140,000</b>	33,900	<b>35,700</b>	33,800	34,400
Manganese, Total	µg/L	<b>300</b>	<b>900</b>	<b>374.7</b>	<b>699.3</b>	<b>804.9</b>	<b>708.6</b>
Mercury, Total	µg/L	<b>0.7</b>	<1U	0.38	0.46	0.09J	0.06J
Nickel, Total	µg/L	<b>100</b>	<50U	3.41	5.5	1.3J	1.75J
Potassium, Total	µg/L		55,000	14,400	16,000	14,300	16,500
Selenium, Total	µg/L	<b>10</b>	<40U	0.53J	<5U	<1U	<1.73U
Silver, Total	µg/L	<b>50</b>	<20U	<0.4U	0.1J	<0.1U	<0.16U
Sodium, Total	µg/L	<b>20000</b>	<b>770,000J</b>	<b>142,000</b>	<b>221,000</b>	<b>200,000</b>	<b>273,000</b>
Thallium, Total	µg/L	<b>0.5<sup>#1</sup></b>	<10U	<0.5U	<0.5U	<0.1U	<0.14U
Vanadium, Total	µg/L		<50U	6.59	8.1	<0.6U	<1.57U
Zinc, Total	µg/L	<b>2000<sup>#1</sup></b>	120	68.19	80.8	<2.6U	5.88J
<b>Dissolved Metals</b>							
Aluminum, Dissolved (Filtered)	µg/L		<180U	-	-	-	-
Antimony, Dissolved (Filtered)	µg/L	<b>3</b>	<12U	-	-	-	-
Arsenic, Dissolved (Filtered)	µg/L	<b>25</b>	<8U	-	-	-	-
Barium, Dissolved (Filtered)	µg/L	<b>1000</b>	160	-	-	-	-
Beryllium, Dissolved (Filtered)	µg/L	<b>3<sup>#1</sup></b>	<4U	-	-	-	-
Cadmium, Dissolved (Filtered)	µg/L	<b>5</b>	<4U	-	-	-	-
Calcium, Dissolved (Filtered)	µg/L		320,000	-	-	-	-
Chromium, Dissolved (Filtered)	µg/L	<b>50</b>	<50U	-	-	-	-
Cobalt, Dissolved (Filtered)	µg/L		<20U	-	-	-	-
Copper, Dissolved (Filtered)	µg/L	<b>200</b>	<50U	-	-	-	-
Iron, Dissolved (Filtered)	µg/L	<b>300</b>	<b>870</b>	-	-	-	-
Lead, Dissolved (Filtered)	µg/L	<b>25</b>	<4U	-	-	-	-
Magnesium, Dissolved (Filtered)	µg/L	<b>35000<sup>#1</sup></b>	<b>140,000</b>	-	-	-	-
Manganese, Dissolved (Filtered)	µg/L	<b>300</b>	<b>830</b>	-	-	-	-
Mercury, Dissolved (Filtered)	µg/L	<b>0.7</b>	<1U	-	-	-	-
Nickel, Dissolved (Filtered)	µg/L	<b>100</b>	<50U	-	-	-	-
Potassium, Dissolved (Filtered)	µg/L		55,000	-	-	-	-
Selenium, Dissolved (Filtered)	µg/L	<b>10</b>	<40U	-	-	-	-
Silver, Dissolved (Filtered)	µg/L	<b>50</b>	<20U	-	-	-	-
Sodium, Dissolved (Filtered)	µg/L	<b>20000</b>	<b>760,000J</b>	-	-	-	-
Thallium, Dissolved (Filtered)	µg/L	<b>0.5<sup>#1</sup></b>	<10U	-	-	-	-
Vanadium, Dissolved (Filtered)	µg/L		<50U	-	-	-	-
Zinc, Dissolved (Filtered)	µg/L	<b>2000<sup>#1</sup></b>	<50U	-	-	-	-

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

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J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

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**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-4	MW-4	MW-4	MW-4	MW-4
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-4	MW-4	MW-4	MW-4	MW-4
<b>TOGS 1.1.1</b>							
<b>Total Metals</b>							
Aluminum, Total	µg/L		250	103	87	616	148
Antimony, Total	µg/L	<b>3</b>	<12U	2.91	1.2J	1J	1.2J
Arsenic, Total	µg/L	<b>25</b>	<8U	9.74	5.9	7.8	3.56
Barium, Total	µg/L	<b>1000</b>	660	92.03	80.4	80.8	112.5
Beryllium, Total	µg/L	<b>3<sup>#1</sup></b>	<4U	<0.5U	<0.5U	<0.2U	<0.1U
Cadmium, Total	µg/L	<b>5</b>	<4U	0.05J	0.1J	0.3	0.5
Calcium, Total	µg/L		520,000J	272,000	294,000	207,000	220,000
Chromium, Total	µg/L	<b>50</b>	<50U	0.77J	2.8	2.2	0.81J
Cobalt, Total	µg/L		<20U	0.36	0.49J	1.6	0.69
Copper, Total	µg/L	<b>200</b>	<50U	1.12J	2.2	9.9	2.13
Iron, Total	µg/L	<b>300</b>	<b>650</b>	186	219	<b>1,290</b>	<b>336</b>
Lead, Total	µg/L	<b>25</b>	9	3.12	3.5	25	5.51
Magnesium, Total	µg/L	<b>35000<sup>#1</sup></b>	8,400J	6,600	12,300	16,200	30,700
Manganese, Total	µg/L	<b>300</b>	100	5.31	13	35.3	<b>302.2</b>
Mercury, Total	µg/L	<b>0.7</b>	<1U	<0.2U	<0.2U	<0.06U	<0.06U
Nickel, Total	µg/L	<b>100</b>	<50U	3.56	5.5	7.6	5.08
Potassium, Total	µg/L		64,000	70,700	77,800	74,200	53,200
Selenium, Total	µg/L	<b>10</b>	<40U	0.55J	<5U	<1U	<1.73U
Silver, Total	µg/L	<b>50</b>	<20U	<0.4U	<0.4U	<0.1U	<0.16U
Sodium, Total	µg/L	<b>20000</b>	<b>250,000J</b>	<b>303,000</b>	<b>339,000</b>	<b>387,000</b>	<b>331,000</b>
Thallium, Total	µg/L	<b>0.5<sup>#1</sup></b>	<10U	<0.5U	<0.5U	<0.1U	<0.14U
Vanadium, Total	µg/L		<50U	0.92J	1.3J	3.3J	1.69J
Zinc, Total	µg/L	<b>2000<sup>#1</sup></b>	<50U	13.78	31.8	60.7	30.16
<b>Dissolved Metals</b>							
Aluminum, Dissolved (Filtered)	µg/L		<180U	-	-	-	-
Antimony, Dissolved (Filtered)	µg/L	<b>3</b>	<12U	-	-	-	-
Arsenic, Dissolved (Filtered)	µg/L	<b>25</b>	<8U	-	-	-	-
Barium, Dissolved (Filtered)	µg/L	<b>1000</b>	620	-	-	-	-
Beryllium, Dissolved (Filtered)	µg/L	<b>3<sup>#1</sup></b>	<4U	-	-	-	-
Cadmium, Dissolved (Filtered)	µg/L	<b>5</b>	<4U	-	-	-	-
Calcium, Dissolved (Filtered)	µg/L		440,000J	-	-	-	-
Chromium, Dissolved (Filtered)	µg/L	<b>50</b>	<50U	-	-	-	-
Cobalt, Dissolved (Filtered)	µg/L		<20U	-	-	-	-
Copper, Dissolved (Filtered)	µg/L	<b>200</b>	<50U	-	-	-	-
Iron, Dissolved (Filtered)	µg/L	<b>300</b>	<280U	-	-	-	-
Lead, Dissolved (Filtered)	µg/L	<b>25</b>	<4U	-	-	-	-
Magnesium, Dissolved (Filtered)	µg/L	<b>35000<sup>#1</sup></b>	<2,000UJ	-	-	-	-
Manganese, Dissolved (Filtered)	µg/L	<b>300</b>	<40U	-	-	-	-
Mercury, Dissolved (Filtered)	µg/L	<b>0.7</b>	<1U	-	-	-	-
Nickel, Dissolved (Filtered)	µg/L	<b>100</b>	<50U	-	-	-	-
Potassium, Dissolved (Filtered)	µg/L		65,000	-	-	-	-
Selenium, Dissolved (Filtered)	µg/L	<b>10</b>	<40U	-	-	-	-
Silver, Dissolved (Filtered)	µg/L	<b>50</b>	<20U	-	-	-	-
Sodium, Dissolved (Filtered)	µg/L	<b>20000</b>	<b>250,000J</b>	-	-	-	-
Thallium, Dissolved (Filtered)	µg/L	<b>0.5<sup>#1</sup></b>	<10U	-	-	-	-
Vanadium, Dissolved (Filtered)	µg/L		<50U	-	-	-	-
Zinc, Dissolved (Filtered)	µg/L	<b>2000<sup>#1</sup></b>	<50U	-	-	-	-

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**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-5	MW-5	MW-5	MW-5	MW-5
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-5	MW-5	MW-5	MW-5	MW-5
<b>TOGS 1.1.1</b>							
<b>Total Metals</b>							
Aluminum, Total	µg/L		<180U	2,380	589	242	8.24J
Antimony, Total	µg/L	<b>3</b>	<12U	<b>3.01</b>	0.9J	1.5J	<b>3.31J</b>
Arsenic, Total	µg/L	<b>25</b>	25	11.91	3	3.7	7.57
Barium, Total	µg/L	<b>1000</b>	56	126.4	125.7	129.2	68.44
Beryllium, Total	µg/L	<b>3<sup>#1</sup></b>	<4U	0.12J	<0.5U	<0.2U	<0.1U
Cadmium, Total	µg/L	<b>5</b>	<4U	1.56	0.5	0.2J	<0.05U
Calcium, Total	µg/L		210,000J	243,000	228,000	224,000	197,000
Chromium, Total	µg/L	<b>50</b>	<50U	8.36	3.6	1.7J	4.89
Cobalt, Total	µg/L		<20U	3.84	2.4	1	1.08
Copper, Total	µg/L	<b>200</b>	<50U	49.9	13.2	<0.3U	0.51J
Iron, Total	µg/L	<b>300</b>	<b>4,000</b>	<b>16,400</b>	<b>4,070</b>	<b>5,740</b>	<b>3,010</b>
Lead, Total	µg/L	<b>25</b>	6	<b>244.8</b>	<b>90.4</b>	<b>46</b>	<1.71U
Magnesium, Total	µg/L	<b>35000<sup>#1</sup></b>	<b>120,000J</b>	<b>147,000</b>	<b>156,000</b>	<b>306,000</b>	<b>174,000</b>
Manganese, Total	µg/L	<b>300</b>	<b>950</b>	<b>1,020</b>	<b>1,060</b>	<b>768.1</b>	<b>449.9</b>
Mercury, Total	µg/L	<b>0.7</b>	<1U	<b>6.02</b>	<b>0.93</b>	0.29	<0.06U
Nickel, Total	µg/L	<b>100</b>	<50U	26.93	14	6.8	11.62
Potassium, Total	µg/L		73,000	75,300	72,500	115,000	84,000
Selenium, Total	µg/L	<b>10</b>	<40U	0.77J	<5U	<1U	<1.73U
Silver, Total	µg/L	<b>50</b>	<20U	0.17J	<0.4U	<0.1U	<0.16U
Sodium, Total	µg/L	<b>20000</b>	<b>740,000J</b>	<b>1,140,000</b>	<b>1,030,000</b>	<b>3,020,000</b>	<b>1,800,000</b>
Thallium, Total	µg/L	<b>0.5<sup>#1</sup></b>	<10U	0.06J	<0.5U	0.1J	<0.71U
Vanadium, Total	µg/L		<50U	12.03	4.2J	2J	<1.57U
Zinc, Total	µg/L	<b>2000<sup>#1</sup></b>	<50U	736.6	223.7	29.6	15.6
<b>Dissolved Metals</b>							
Aluminum, Dissolved (Filtered)	µg/L		<180U	-	-	-	-
Antimony, Dissolved (Filtered)	µg/L	<b>3</b>	<12U	-	-	-	-
Arsenic, Dissolved (Filtered)	µg/L	<b>25</b>	10	-	-	-	-
Barium, Dissolved (Filtered)	µg/L	<b>1000</b>	54	-	-	-	-
Beryllium, Dissolved (Filtered)	µg/L	<b>3<sup>#1</sup></b>	<4U	-	-	-	-
Cadmium, Dissolved (Filtered)	µg/L	<b>5</b>	<4U	-	-	-	-
Calcium, Dissolved (Filtered)	µg/L		220,000J	-	-	-	-
Chromium, Dissolved (Filtered)	µg/L	<b>50</b>	<50U	-	-	-	-
Cobalt, Dissolved (Filtered)	µg/L		<20U	-	-	-	-
Copper, Dissolved (Filtered)	µg/L	<b>200</b>	<50U	-	-	-	-
Iron, Dissolved (Filtered)	µg/L	<b>300</b>	<b>370</b>	-	-	-	-
Lead, Dissolved (Filtered)	µg/L	<b>25</b>	4	-	-	-	-
Magnesium, Dissolved (Filtered)	µg/L	<b>35000<sup>#1</sup></b>	<b>120,000J</b>	-	-	-	-
Manganese, Dissolved (Filtered)	µg/L	<b>300</b>	<b>970</b>	-	-	-	-
Mercury, Dissolved (Filtered)	µg/L	<b>0.7</b>	<1U	-	-	-	-
Nickel, Dissolved (Filtered)	µg/L	<b>100</b>	<50U	-	-	-	-
Potassium, Dissolved (Filtered)	µg/L		77,000	-	-	-	-
Selenium, Dissolved (Filtered)	µg/L	<b>10</b>	<40U	-	-	-	-
Silver, Dissolved (Filtered)	µg/L	<b>50</b>	<20U	-	-	-	-
Sodium, Dissolved (Filtered)	µg/L	<b>20000</b>	<b>760,000J</b>	-	-	-	-
Thallium, Dissolved (Filtered)	µg/L	<b>0.5<sup>#1</sup></b>	<10U	-	-	-	-
Vanadium, Dissolved (Filtered)	µg/L		<50U	-	-	-	-
Zinc, Dissolved (Filtered)	µg/L	<b>2000<sup>#1</sup></b>	<50U	-	-	-	-

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

<sup>#1</sup> - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	MW-6	MW-6	MW-6	MW-6	MW-6	
			Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
			Well ID	MW-6	MW-6	MW-6	MW-6	MW-6
<b>TOGS 1.1.1</b>								
<b>Total Metals</b>								
Aluminum, Total	µg/L		<180U	137	330	191	449	
Antimony, Total	µg/L	<b>3</b>	<12U	<b>3.09</b>	1.4J	1.1J	1.95J	
Arsenic, Total	µg/L	<b>25</b>	14	7.55	3.2	4.5	14.06	
Barium, Total	µg/L	<b>1000</b>	140	104.8	156	166.5	145.5	
Beryllium, Total	µg/L	<b>3<sup>#1</sup></b>	<4U	<0.5U	<0.5U	<0.2U	<0.1U	
Cadmium, Total	µg/L	<b>5</b>	<4U	0.93	0.2	0.8	1.45	
Calcium, Total	µg/L		360,000J	292,000	285,000	280,000	286,000	
Chromium, Total	µg/L	<b>50</b>	<50U	3.97	2.1	1.2J	3.44	
Cobalt, Total	µg/L		<20U	4.53	1.3	1.4	2.15	
Copper, Total	µg/L	<b>200</b>	<50U	3.64	4.9	7.1	11.45	
Iron, Total	µg/L	<b>300</b>	<b>650</b>	<b>5,820</b>	<b>1,270</b>	<b>1,870</b>	<b>5,550</b>	
Lead, Total	µg/L	<b>25</b>	10	9.28	17.4	15.1	<b>25.67</b>	
Magnesium, Total	µg/L	<b>35000<sup>#1</sup></b>	<b>47,000J</b>	<b>46,300</b>	<b>52,500</b>	<b>57,400</b>	<b>40,000</b>	
Manganese, Total	µg/L	<b>300</b>	<b>640</b>	<b>1,526</b>	<b>757.3</b>	<b>952.6</b>	<b>1,118</b>	
Mercury, Total	µg/L	<b>0.7</b>	<1U	<0.2U	<0.2U	<0.06U	<0.06U	
Nickel, Total	µg/L	<b>100</b>	<50U	22.81	8	9.4	11.82	
Potassium, Total	µg/L		66,000	61,100	54,200	60,800	49,900	
Selenium, Total	µg/L	<b>10</b>	<40U	0.51J	<5U	<1U	<1.73U	
Silver, Total	µg/L	<b>50</b>	<20U	<0.4U	<0.4U	<0.1U	<0.16U	
Sodium, Total	µg/L	<b>20000</b>	<b>410,000J</b>	<b>385,000</b>	<b>393,000</b>	<b>470,000</b>	<b>408,000</b>	
Thallium, Total	µg/L	<b>0.5<sup>#1</sup></b>	<10U	<0.5U	<0.5U	<0.1U	<0.14U	
Vanadium, Total	µg/L		<50U	2.66J	3.1J	2J	4.95J	
Zinc, Total	µg/L	<b>2000<sup>#1</sup></b>	<50U	819.6	121.7	98.3	177	
<b>Dissolved Metals</b>								
Aluminum, Dissolved (Filtered)	µg/L		<180U	-	-	-	-	
Antimony, Dissolved (Filtered)	µg/L	<b>3</b>	<12U	-	-	-	-	
Arsenic, Dissolved (Filtered)	µg/L	<b>25</b>	10	-	-	-	-	
Barium, Dissolved (Filtered)	µg/L	<b>1000</b>	130	-	-	-	-	
Beryllium, Dissolved (Filtered)	µg/L	<b>3<sup>#1</sup></b>	<4U	-	-	-	-	
Cadmium, Dissolved (Filtered)	µg/L	<b>5</b>	<4U	-	-	-	-	
Calcium, Dissolved (Filtered)	µg/L		340,000J	-	-	-	-	
Chromium, Dissolved (Filtered)	µg/L	<b>50</b>	<50U	-	-	-	-	
Cobalt, Dissolved (Filtered)	µg/L		<20U	-	-	-	-	
Copper, Dissolved (Filtered)	µg/L	<b>200</b>	<50U	-	-	-	-	
Iron, Dissolved (Filtered)	µg/L	<b>300</b>	<b>370</b>	-	-	-	-	
Lead, Dissolved (Filtered)	µg/L	<b>25</b>	5	-	-	-	-	
Magnesium, Dissolved (Filtered)	µg/L	<b>35000<sup>#1</sup></b>	<b>46,000J</b>	-	-	-	-	
Manganese, Dissolved (Filtered)	µg/L	<b>300</b>	<b>630</b>	-	-	-	-	
Mercury, Dissolved (Filtered)	µg/L	<b>0.7</b>	<1U	-	-	-	-	
Nickel, Dissolved (Filtered)	µg/L	<b>100</b>	<50U	-	-	-	-	
Potassium, Dissolved (Filtered)	µg/L		65,000	-	-	-	-	
Selenium, Dissolved (Filtered)	µg/L	<b>10</b>	<40U	-	-	-	-	
Silver, Dissolved (Filtered)	µg/L	<b>50</b>	<20U	-	-	-	-	
Sodium, Dissolved (Filtered)	µg/L	<b>20000</b>	<b>400,000J</b>	-	-	-	-	
Thallium, Dissolved (Filtered)	µg/L	<b>0.5<sup>#1</sup></b>	<10U	-	-	-	-	
Vanadium, Dissolved (Filtered)	µg/L		<50U	-	-	-	-	
Zinc, Dissolved (Filtered)	µg/L	<b>2000<sup>#1</sup></b>	<50U	-	-	-	-	

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

<sup>#1</sup> - Guidance value

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U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID	MW-7	MW-7	MW-7	MW-7	MW-7
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-7	MW-7	MW-7	MW-7	MW-7
<b>TOGS 1.1.1</b>							
<b>Total Metals</b>							
Aluminum, Total	µg/L		<180U	2.89J	40	50	15.5
Antimony, Total	µg/L	<b>3</b>	<12U	0.52J	0.2J	0.3J	<0.42U
Arsenic, Total	µg/L	<b>25</b>	<8U	1.4	2.8	2.3	1.47
Barium, Total	µg/L	<b>1000</b>	150	85.68	120.7	97.9	67.41
Beryllium, Total	µg/L	<b>3<sup>#1</sup></b>	<4U	<0.5U	<0.5U	<0.2U	<0.1U
Cadmium, Total	µg/L	<b>5</b>	<4U	<0.2U	<0.2U	<0.1U	<0.05U
Calcium, Total	µg/L		110,000	109,000	122,000	91,600	85,000
Chromium, Total	µg/L	<b>50</b>	<50U	0.99J	7.7	7.3	4.01
Cobalt, Total	µg/L		<20U	1.15	1.5	1.3	1.82
Copper, Total	µg/L	<b>200</b>	<50U	1.13J	1.9J	<0.3U	<0.38U
Iron, Total	µg/L	<b>300</b>	<b>6,400</b>	<b>3,170</b>	<b>5,040</b>	<b>4,630</b>	<b>3,750</b>
Lead, Total	µg/L	<b>25</b>	<4U	<1U	1.1	0.7J	0.39J
Magnesium, Total	µg/L	<b>35000<sup>#1</sup></b>	7,300	7,040	10,300	8,580	9,690
Manganese, Total	µg/L	<b>300</b>	<b>830</b>	<b>823.6</b>	<b>913.5</b>	<b>801.4</b>	<b>1,074</b>
Mercury, Total	µg/L	<b>0.7</b>	<1U	<0.2U	<0.2U	0.11J	<0.06U
Nickel, Total	µg/L	<b>100</b>	100	<b>121.9</b>	<b>160</b>	<b>173.4</b>	<b>143.7</b>
Potassium, Total	µg/L		13,000	9,020	12,200	11,400	8,360
Selenium, Total	µg/L	<b>10</b>	<40U	<5U	<5U	<1U	<1.73U
Silver, Total	µg/L	<b>50</b>	<20U	<0.4U	<0.4U	<0.1U	<0.16U
Sodium, Total	µg/L	<b>20000</b>	<b>330,000J</b>	<b>153,000</b>	<b>186,000</b>	<b>138,000</b>	<b>81,800</b>
Thallium, Total	µg/L	<b>0.5<sup>#1</sup></b>	<10U	<0.5U	<0.5U	<0.1U	<0.14U
Vanadium, Total	µg/L		<50U	<5U	<5U	<0.6U	<1.57U
Zinc, Total	µg/L	<b>2000<sup>#1</sup></b>	<50U	9.03J	42.6	<2.6U	<3.41U
<b>Dissolved Metals</b>							
Aluminum, Dissolved (Filtered)	µg/L		<180U	68.3	-	4J	<3.27U
Antimony, Dissolved (Filtered)	µg/L	<b>3</b>	<12U	0.75J	-	0.4J	<0.42U
Arsenic, Dissolved (Filtered)	µg/L	<b>25</b>	<8U	5.08	-	1.2	0.69
Barium, Dissolved (Filtered)	µg/L	<b>1000</b>	150	119.3	-	80.8	64.71
Beryllium, Dissolved (Filtered)	µg/L	<b>3<sup>#1</sup></b>	<4U	<0.5U	-	<0.2U	<0.1U
Cadmium, Dissolved (Filtered)	µg/L	<b>5</b>	<4U	0.05J	-	<0.1U	<0.05U
Calcium, Dissolved (Filtered)	µg/L		130,000	118,000	-	126,000	87,900
Chromium, Dissolved (Filtered)	µg/L	<b>50</b>	<50U	23.34	-	3	0.69J
Cobalt, Dissolved (Filtered)	µg/L		<20U	1.28	-	1.6	1.85
Copper, Dissolved (Filtered)	µg/L	<b>200</b>	<50U	1.31	-	<0.3U	<0.38U
Iron, Dissolved (Filtered)	µg/L	<b>300</b>	<b>980</b>	<b>13,400</b>	-	<b>652</b>	172
Lead, Dissolved (Filtered)	µg/L	<b>25</b>	<4U	2.24	-	<0.1U	<0.34U
Magnesium, Dissolved (Filtered)	µg/L	<b>35000<sup>#1</sup></b>	8,500	8,240	-	7,540	9,920
Manganese, Dissolved (Filtered)	µg/L	<b>300</b>	<b>950</b>	<b>853.8</b>	-	<b>1,038</b>	<b>1,130</b>
Mercury, Dissolved (Filtered)	µg/L	<b>0.7</b>	<1U	<0.2U	-	<0.06U	<0.06U
Nickel, Dissolved (Filtered)	µg/L	<b>100</b>	<b>110</b>	<b>135.9</b>	-	<b>158</b>	<b>142.7</b>
Potassium, Dissolved (Filtered)	µg/L		15,000	10,400	-	10,200	9,080
Selenium, Dissolved (Filtered)	µg/L	<b>10</b>	<40U	0.59J	-	<1U	<1.73U
Silver, Dissolved (Filtered)	µg/L	<b>50</b>	<20U	0.13J	-	<0.1U	<0.16U
Sodium, Dissolved (Filtered)	µg/L	<b>20000</b>	<b>380,000J</b>	<b>175,000</b>	-	<b>185,000</b>	<b>84,800</b>
Thallium, Dissolved (Filtered)	µg/L	<b>0.5<sup>#1</sup></b>	<10U	<0.5U	-	<0.1U	<0.14U
Vanadium, Dissolved (Filtered)	µg/L		<50U	0.54J	-	<0.6U	<1.57U
Zinc, Dissolved (Filtered)	µg/L	<b>2000<sup>#1</sup></b>	<50U	6.31J	-	<2.6U	<3.41U

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J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

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**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-8	MW-8	MW-8	MW-8	MW-8
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-8	MW-8	MW-8	MW-8	MW-8
<b>TOGS 1.1.1</b>							
<b>Total Metals</b>							
Aluminum, Total	µg/L		220	230	39	2,310	9.3J
Antimony, Total	µg/L	<b>3</b>	<12U	0.5J	0.7J	0.4J	<0.42U
Arsenic, Total	µg/L	<b>25</b>	<8U	0.39J	0.7	0.8	0.33J
Barium, Total	µg/L	<b>1000</b>	270	376.1	464.6	707.2	<b>1,023</b>
Beryllium, Total	µg/L	<b>3<sup>#1</sup></b>	<4U	<0.5U	<0.5U	<0.2U	<0.1U
Cadmium, Total	µg/L	<b>5</b>	<4U	0.65	<0.2U	1.1	0.27
Calcium, Total	µg/L		150,000	221,000	280,000	302,000	466,000
Chromium, Total	µg/L	<b>50</b>	<50U	1.29	2.4	7	1.26
Cobalt, Total	µg/L		<20U	0.21	0.2J	1.5	0.17J
Copper, Total	µg/L	<b>200</b>	<50U	1.36J	1.9J	<0.3U	0.5J
Iron, Total	µg/L	<b>300</b>	<b>13,000</b>	<b>25,800</b>	<b>29,700</b>	<b>54,300</b>	<b>36,600</b>
Lead, Total	µg/L	<b>25</b>	7.8	2.72	0.9J	11.7	<1.71U
Magnesium, Total	µg/L	<b>35000<sup>#1</sup></b>	7,700	10,000	17,400	17,300	23,300
Manganese, Total	µg/L	<b>300</b>	<b>780</b>	<b>1,180</b>	<b>1,368</b>	<b>1,654</b>	<b>1,559</b>
Mercury, Total	µg/L	<b>0.7</b>	<1U	<0.2U	<0.2U	<0.06U	<0.06U
Nickel, Total	µg/L	<b>100</b>	<50U	0.93	1.9	5.1	1.98J
Potassium, Total	µg/L		18,000	15,900	22,600	26,100	32,700
Selenium, Total	µg/L	<b>10</b>	<40U	<5U	<5U	<1U	<1.73U
Silver, Total	µg/L	<b>50</b>	<20U	<0.4U	<0.4U	<0.1U	<0.16U
Sodium, Total	µg/L	<b>20000</b>	<b>420,000J</b>	<b>504,000</b>	<b>519,000</b>	<b>731,000</b>	<b>1,350,000</b>
Thallium, Total	µg/L	<b>0.5<sup>#1</sup></b>	<10U	<0.5U	<0.5U	<0.1U	<0.71U
Vanadium, Total	µg/L		<50U	2.15J	<5U	8.3	<1.57U
Zinc, Total	µg/L	<b>2000<sup>#1</sup></b>	<50U	6.77J	30	8.2J	<3.41U
<b>Dissolved Metals</b>							
Aluminum, Dissolved (Filtered)	µg/L		<180U	3.95J	-	3J	<16.4U
Antimony, Dissolved (Filtered)	µg/L	<b>3</b>	<12U	0.19J	-	0.6J	<2.14U
Arsenic, Dissolved (Filtered)	µg/L	<b>25</b>	<8U	0.89	-	<0.1U	<0.82U
Barium, Dissolved (Filtered)	µg/L	<b>1000</b>	200	366.9	-	658.2	910.4
Beryllium, Dissolved (Filtered)	µg/L	<b>3<sup>#1</sup></b>	<4U	<0.5U	-	<0.2U	<0.53U
Cadmium, Dissolved (Filtered)	µg/L	<b>5</b>	<4U	<0.2U	-	<0.1U	<0.29U
Calcium, Dissolved (Filtered)	µg/L		160,000	217,000	-	358,000	455,000
Chromium, Dissolved (Filtered)	µg/L	<b>50</b>	<50U	1.56	-	1.6J	<0.89U
Cobalt, Dissolved (Filtered)	µg/L		<20U	0.33J	-	<0.1U	<0.81U
Copper, Dissolved (Filtered)	µg/L	<b>200</b>	<50U	0.68J	-	<0.3U	<1.92U
Iron, Dissolved (Filtered)	µg/L	<b>300</b>	<b>1,200</b>	<b>19,400</b>	-	<b>26,500</b>	<b>19,200</b>
Lead, Dissolved (Filtered)	µg/L	<b>25</b>	<4U	<1U	-	<0.1U	<1.71U
Magnesium, Dissolved (Filtered)	µg/L	<b>35000<sup>#1</sup></b>	8,200	11,600	-	17,900	24,300
Manganese, Dissolved (Filtered)	µg/L	<b>300</b>	<b>810</b>	<b>971.8</b>	-	<b>1,939</b>	<b>1,551</b>
Mercury, Dissolved (Filtered)	µg/L	<b>0.7</b>	<1U	<0.2U	-	<0.06U	<0.06U
Nickel, Dissolved (Filtered)	µg/L	<b>100</b>	<50U	3.29	-	5	<2.78U
Potassium, Dissolved (Filtered)	µg/L		19,000	17,800	-	25,500	33,600
Selenium, Dissolved (Filtered)	µg/L	<b>10</b>	<40U	1.08J	-	<1U	<8.65U
Silver, Dissolved (Filtered)	µg/L	<b>50</b>	<20U	<0.4U	-	<0.1U	<0.81U
Sodium, Dissolved (Filtered)	µg/L	<b>20000</b>	<b>450,000J</b>	<b>500,000</b>	-	<b>866,000</b>	<b>1,320,000</b>
Thallium, Dissolved (Filtered)	µg/L	<b>0.5<sup>#1</sup></b>	<10U	<0.5U	-	<0.1U	<0.71U
Vanadium, Dissolved (Filtered)	µg/L		<50U	0.48J	-	<0.6U	<7.85U
Zinc, Dissolved (Filtered)	µg/L	<b>2000<sup>#1</sup></b>	<50U	3.82J	-	<2.6U	<17.05U

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<sup>#1</sup> - Guidance value

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( - ) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
Summary of Groundwater Sample Laboratory Analytical Results

ChemName	Units	Sample ID Monitoring Round Well ID	TOGS 1.1.1	Duplicate	Duplicate	Duplicate	Duplicate	Duplicate
				Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
				MW-2R	MW-5	MW-2R	MW-1	MW-1
<b>Total Metals</b>								
Aluminum, Total	µg/L			1,700J	4,070	1,660	1,110	16.9
Antimony, Total	µg/L	<b>3</b>		<12U	<b>4.21</b>	2.4	0.8J	<0.42U
Arsenic, Total	µg/L	<b>25</b>		<8U	19.91	8.5	2.7	1.4
Barium, Total	µg/L	<b>1000</b>		160	167.5	224.5	225.3	277.4
Beryllium, Total	µg/L	<b>3<sup>#1</sup></b>		<4U	0.21J	<0.5U	<0.2U	<0.1U
Cadmium, Total	µg/L	<b>5</b>		<4U	2.45	0.1J	0.4	0.08J
Calcium, Total	µg/L			280,000	240,000	84,900	181,000	256,000
Chromium, Total	µg/L	<b>50</b>		<50U	14.57	10.1	18.8	2.73
Cobalt, Total	µg/L			<20U	6.66	2.3	2	1.36
Copper, Total	µg/L	<b>200</b>		<50U	88.29	26.2	18.3	<0.38U
Iron, Total	µg/L	<b>300</b>		<b>9,000J</b>	<b>30,600</b>	<b>24,000</b>	<b>7,430</b>	<b>3,690</b>
Lead, Total	µg/L	<b>25</b>		<b>49J</b>	<b>375.6</b>	<b>165.3</b>	<b>76.1</b>	<b>0.83J</b>
Magnesium, Total	µg/L	<b>35000<sup>#1</sup></b>		<b>120,000</b>	<b>137,000</b>	33,800	31,500	<b>39,900</b>
Manganese, Total	µg/L	<b>300</b>		<b>790</b>	<b>1,016</b>	<b>624.2</b>	<b>2,788</b>	<b>2,707</b>
Mercury, Total	µg/L	<b>0.7</b>		<1U	<b>12.5</b>	0.36	0.1J	<0.06U
Nickel, Total	µg/L	<b>100</b>		<50U	45.52	6.1	20.4	7.27
Potassium, Total	µg/L			48,000	70,000	15,300	16,500	19,200
Selenium, Total	µg/L	<b>10</b>		<40U	1.18J	<5U	<1U	<1.73U
Silver, Total	µg/L	<b>50</b>		<20U	0.33J	<0.4U	0.1J	<0.16U
Sodium, Total	µg/L	<b>20000</b>		<b>660,000J</b>	<b>1,130,000</b>	<b>215,000</b>	<b>333,000</b>	<b>478,000</b>
Thallium, Total	µg/L	<b>0.5<sup>#1</sup></b>		<10U	0.11J	<0.5U	<0.1U	<0.14U
Vanadium, Total	µg/L			<50U	22.13	7.6	4.1J	<1.57U
Zinc, Total	µg/L	<b>2000<sup>#1</sup></b>		76	1,320	69.9	114.1	3.89J
<b>Dissolved Metals</b>								
Aluminum, Dissolved (Filtered)	µg/L			<180U	-	-	4J	-
Antimony, Dissolved (Filtered)	µg/L	<b>3</b>		<12U	-	-	0.7J	-
Arsenic, Dissolved (Filtered)	µg/L	<b>25</b>		<8U	-	-	1	-
Barium, Dissolved (Filtered)	µg/L	<b>1000</b>		160	-	-	213.5	-
Beryllium, Dissolved (Filtered)	µg/L	<b>3<sup>#1</sup></b>		<4U	-	-	<0.2U	-
Cadmium, Dissolved (Filtered)	µg/L	<b>5</b>		<4U	-	-	<0.1U	-
Calcium, Dissolved (Filtered)	µg/L			310,000	-	-	247,000	-
Chromium, Dissolved (Filtered)	µg/L	<b>50</b>		<50U	-	-	3.3	-
Cobalt, Dissolved (Filtered)	µg/L			<20U	-	-	1.7	-
Copper, Dissolved (Filtered)	µg/L	<b>200</b>		<50U	-	-	<0.3U	-
Iron, Dissolved (Filtered)	µg/L	<b>300</b>		<b>750</b>	-	-	<b>2,090</b>	-
Lead, Dissolved (Filtered)	µg/L	<b>25</b>		<4U	-	-	0.1J	-
Magnesium, Dissolved (Filtered)	µg/L	<b>35000<sup>#1</sup></b>		<b>140,000</b>	-	-	32,800	-
Manganese, Dissolved (Filtered)	µg/L	<b>300</b>		<b>860</b>	-	-	<b>3,892</b>	-
Mercury, Dissolved (Filtered)	µg/L	<b>0.7</b>		<1U	-	-	<0.06U	-
Nickel, Dissolved (Filtered)	µg/L	<b>100</b>		<50U	-	-	14.6	-
Potassium, Dissolved (Filtered)	µg/L			54,000	-	-	16,800	-
Selenium, Dissolved (Filtered)	µg/L	<b>10</b>		<40U	-	-	<1U	-
Silver, Dissolved (Filtered)	µg/L	<b>50</b>		<20U	-	-	<0.1U	-
Sodium, Dissolved (Filtered)	µg/L	<b>20000</b>		<b>750,000J</b>	-	-	<b>470,000</b>	-
Thallium, Dissolved (Filtered)	µg/L	<b>0.5<sup>#1</sup></b>		<10U	-	-	<0.1U	-
Vanadium, Dissolved (Filtered)	µg/L			<50U	-	-	<0.6U	-
Zinc, Dissolved (Filtered)	µg/L	<b>2000<sup>#1</sup></b>		<50U	-	-	<2.6U	-

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

<sup>#1</sup> - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards





**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-1	MW-1	MW-1	MW-1	MW-1
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-1	MW-1	MW-1	MW-1	MW-1
		<b>TOGS 1.1.1</b>					
<b>General Chemistry</b>							
Alkalinity, Total	µg/L		347,000	400,000	766,000	437,000	398,000
Biological Oxygen Demand, Five day	µg/L		10,600	<50,000U	<40,000U	<10,000U	5,400
Chemical Oxygen Demand	µg/L		690,000	1,300,000	2,800,000	46,000	20,000
Chloride	µg/L	<b>250000</b>	-	<b>600,000</b>	<b>540,000</b>	<b>560,000</b>	<b>840,000</b>
Total Organic Carbon	µg/L		5,400	10,600	7,500	3,500	1,700
Total Organic Halogen	ug/l		-	<20U	<20U	27.7	54
<b>PCBs</b>							
Aroclor 1016	µg/L		<0.05U	<0.083U	<0.083U	<0.021U	<0.021U
Aroclor 1221	µg/L		<0.05U	<0.083U	<0.083U	<0.028U	<0.028U
Aroclor 1232	µg/L		<0.05U	<0.083U	<0.083U	<0.012U	<0.012U
Aroclor 1242	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	0.043J
Aroclor 1248	µg/L		<0.05U	0.768	1.46	0.286	<0.014U
Aroclor 1254	µg/L		<0.05U	0.416	0.746	0.137	<0.022U
Aroclor 1260	µg/L		<0.05U	<0.083U	0.119	<0.023U	<0.023U
Aroclor 1262	µg/L		-	<0.083U	<0.083U	-	-
Aroclor 1268	µg/L		-	<0.083U	<0.083U	-	-
PCBs, Total	µg/L	<b>0.09</b>	<0.05U	<b>1.18</b>	<b>2.33</b>	<b>0.423</b>	0.043

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

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Bold and highlighted results indicate an exceedance of standards



**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-2R	MW-2R	MW-2R	MW-2R	MW-2R
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-2R	MW-2R	MW-2R	MW-2R	MW-2R
<b>TOGS 1.1.1</b>							
<b>General Chemistry</b>							
Alkalinity, Total	µg/L		308,000	312,000	317,000	271,000	281,000
Biological Oxygen Demand, Five day	µg/L		<6,000U	<10,000U	<5,000U	<2,000U	<2,000U
Chemical Oxygen Demand	µg/L		32,900	74,000	55,000	22,000	18,000
Chloride	µg/L	<b>250000</b>	-	<b>270,000</b>	<b>340,000</b>	<b>340,000</b>	<b>430,000</b>
Total Organic Carbon	µg/L		2,800	11,200	3,200	2,600	2,300
Total Organic Halogen	ug/l		-	26.9	20.9	14.1J	41.1
<b>PCBs</b>							
Aroclor 1016	µg/L		<0.05U	<0.083U	<0.083U	<0.021U	<0.021U
Aroclor 1221	µg/L		<0.05U	<0.083U	<0.083U	<0.028U	<0.028U
Aroclor 1232	µg/L		<0.05U	<0.083U	<0.083U	<0.012U	<0.012U
Aroclor 1242	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<0.014U
Aroclor 1248	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<0.014U
Aroclor 1254	µg/L		<0.05U	<0.083U	<0.083U	0.034J	<0.022U
Aroclor 1260	µg/L		<0.05U	<0.083U	<0.083U	<0.023U	<0.023U
Aroclor 1262	µg/L		-	<0.083U	<0.083U	-	-
Aroclor 1268	µg/L		-	<0.083U	<0.083U	-	-
PCBs, Total	µg/L	<b>0.09</b>	<0.05U	<0.083U	<0.083U	0.034J	<0.014

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

( - ) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-4	MW-4	MW-4	MW-4	MW-4
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-4	MW-4	MW-4	MW-4	MW-4
		<b>TOGS 1.1.1</b>					
<b>General Chemistry</b>							
Alkalinity, Total	µg/L		446,000	186,000	83,400	96,800	484,000
Biological Oxygen Demand, Five day	µg/L		11,700	<5,000U	<5,000U	4,300	<5,000U
Chemical Oxygen Demand	µg/L		1,170,000	150,000	110,000	99,000	82,000
Chloride	µg/L	<b>250000</b>	-	<b>460,000</b>	<b>560,000</b>	<b>620,000</b>	<b>640,000</b>
Total Organic Carbon	µg/L		26,900	52,100	25,000	25,000	17,000
Total Organic Halogen	ug/l		-	47.4	50.5	36.9	42
<b>PCBs</b>							
Aroclor 1016	µg/L		<0.05U	<0.083U	<0.083U	<0.021U	<0.021U
Aroclor 1221	µg/L		<0.05U	<0.083U	<0.083U	<0.028U	<0.028U
Aroclor 1232	µg/L		<0.05U	<0.083U	<0.083U	<0.012U	<0.012U
Aroclor 1242	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<b>0.045J</b>
Aroclor 1248	µg/L		<0.05U	<b>0.11</b>	<0.083U	<0.014U	<0.014U
Aroclor 1254	µg/L		<0.05U	<0.083U	<0.083U	<0.022U	<0.022U
Aroclor 1260	µg/L		<0.05U	<0.083U	<0.083U	<0.023U	<0.023U
Aroclor 1262	µg/L		-	<0.083U	<0.083U	-	-
Aroclor 1268	µg/L		-	<0.083U	<0.083U	-	-
PCBs, Total	µg/L	<b>0.09</b>	<0.05U	<b>0.11</b>	<0.083U	<0.012U	<b>0.045</b>

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

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J - Indicates an estimated value

( - ) - No sample analyzed for specific analyte

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**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-5	MW-5	MW-5	MW-5	MW-5
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-5	MW-5	MW-5	MW-5	MW-5
		<b>TOGS 1.1.1</b>					
<b>General Chemistry</b>							
Alkalinity, Total	µg/L		637,000	387,000	455,000	370,000	377,000
Biological Oxygen Demand, Five day	µg/L		21,000	13,000	7,400	<40,000U	<2,000U
Chemical Oxygen Demand	µg/L		324,000	220,000	260,000	150,000	73,000
Chloride	µg/L	<b>250000</b>	-	<b>1,400,000</b>	<b>1,900,000</b>	<b>4,600,000</b>	<b>3,100,000</b>
Total Organic Carbon	µg/L		18,800	23,200	13,000	6,200	9,000
Total Organic Halogen	ug/l		-	66.5	41.4	72.2	81.1
<b>PCBs</b>							
Aroclor 1016	µg/L		<0.05U	<0.083U	<0.083U	<0.021U	<0.021U
Aroclor 1221	µg/L		<0.05U	<0.083U	<0.083U	<0.028U	<0.028U
Aroclor 1232	µg/L		<0.05U	<0.083U	<0.083U	<0.012U	<0.012U
Aroclor 1242	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<0.014U
Aroclor 1248	µg/L		<0.05U	0.195	0.216	<0.014U	<0.014U
Aroclor 1254	µg/L		<0.05U	0.17	0.153	<0.022U	<0.022U
Aroclor 1260	µg/L		<0.05U	0.084	0.103	<0.023U	<0.023U
Aroclor 1262	µg/L		-	<0.083U	<0.083U	-	-
Aroclor 1268	µg/L		-	<0.083U	<0.083U	-	-
PCBs, Total	µg/L	<b>0.09</b>	<0.05U	<b>0.449</b>	<b>0.472</b>	<0.012U	<0.014

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

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**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-6	MW-6	MW-6	MW-6	MW-6
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-6	MW-6	MW-6	MW-6	MW-6
		<b>TOGS 1.1.1</b>					
<b>General Chemistry</b>							
Alkalinity, Total	µg/L		530,000	560,000	807,000	718,000	492,000
Biological Oxygen Demand, Five day	µg/L		12,300	26,000	48,000	29,000	15,000
Chemical Oxygen Demand	µg/L		994,000	320,000	180,000	580,000	71,000
Chloride	µg/L	<b>250000</b>	-	<b>620,000</b>	<b>660,000</b>	<b>780,000</b>	<b>980,000</b>
Total Organic Carbon	µg/L		24,000	35,100	21,000	22,000	16,000
Total Organic Halogen	ug/l		-	47.4	35.7	30.5	50.8
<b>PCBs</b>							
Aroclor 1016	µg/L		<0.05U	<0.083U	<0.083U	<0.021U	<0.021U
Aroclor 1221	µg/L		<0.05U	<0.083U	<0.083U	<0.028U	<0.028U
Aroclor 1232	µg/L		<0.05U	<0.083U	<0.083U	<0.012U	<0.012U
Aroclor 1242	µg/L		<0.05U	<b>0.279</b>	<0.083U	<0.014U	<b>0.026J</b>
Aroclor 1248	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<0.014U
Aroclor 1254	µg/L		<0.05U	<b>0.187</b>	<0.083U	<b>0.022J</b>	<0.022U
Aroclor 1260	µg/L		<0.05U	<0.083U	<0.083U	<0.023U	<0.023U
Aroclor 1262	µg/L		-	<0.083U	<0.083U	-	-
Aroclor 1268	µg/L		-	<0.083U	<0.083U	-	-
PCBs, Total	µg/L	<b>0.09</b>	<0.05U	<b>0.466</b>	<0.083U	<b>0.022J</b>	<b>0.026</b>

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**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-7	MW-7	MW-7	MW-7	MW-7
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-7	MW-7	MW-7	MW-7	MW-7
		<b>TOGS 1.1.1</b>					
<b>General Chemistry</b>							
Alkalinity, Total	µg/L		291,000	330,000	323,000	319,000	265,000
Biological Oxygen Demand, Five day	µg/L		10,300	14,000	3,300	<2,000U	<2,000U
Chemical Oxygen Demand	µg/L		199,000	35,000	19,000J	37,000	4,100J
Chloride	µg/L	<b>250000</b>	-	250,000	240,000	170,000	91,000
Total Organic Carbon	µg/L		5,200	6,440	3,900	4,000	2,700
Total Organic Halogen	ug/l		-	50.4	27.9	26.3	63.6
<b>PCBs</b>							
Aroclor 1016	µg/L		<0.05U	<0.083U	<0.083U	<0.021U	<0.021U
Aroclor 1221	µg/L		<0.05U	<0.083U	<0.083U	<0.028U	<0.028U
Aroclor 1232	µg/L		<0.05U	<0.083U	<0.083U	<0.012U	<0.012U
Aroclor 1242	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<0.014U
Aroclor 1248	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<0.014U
Aroclor 1254	µg/L		<0.05U	<0.083U	<0.083U	<0.022U	<0.022U
Aroclor 1260	µg/L		<0.05U	<0.083U	<0.083U	<0.023U	<0.023U
Aroclor 1262	µg/L		-	<0.083U	<0.083U	-	-
Aroclor 1268	µg/L		-	<0.083U	<0.083U	-	-
PCBs, Total	µg/L	<b>0.09</b>	<0.05U	<0.083U	<0.083U	<0.012U	<0.014

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

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J - Indicates an estimated value

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**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	MW-8	MW-8	MW-8	MW-8	MW-8
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-8	MW-8	MW-8	MW-8	MW-8
		<b>TOGS 1.1.1</b>					
<b>General Chemistry</b>							
Alkalinity, Total	µg/L		613,000	575,000	564,000	521,000	505,000
Biological Oxygen Demand, Five day	µg/L		<6,000U	3,400	<2,000U	<2,000U	2,800
Chemical Oxygen Demand	µg/L		359,000	49,000	42,000	56,000	55,000
Chloride	µg/L	<b>250000</b>	-	<b>740,000</b>	<b>940,000</b>	<b>1,400,000</b>	<b>2,300,000</b>
Total Organic Carbon	µg/L		5,500	7,620	2,200	1,600	1,000
Total Organic Halogen	ug/l		-	40.5	62.1	11.9J	40.8
<b>PCBs</b>							
Aroclor 1016	µg/L		<0.05U	<0.083U	<0.083U	<0.021U	<0.021U
Aroclor 1221	µg/L		<0.05U	<0.083U	<0.083U	<0.028U	<0.028U
Aroclor 1232	µg/L		<0.05U	<0.083U	<0.083U	<0.012U	<0.012U
Aroclor 1242	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<0.014U
Aroclor 1248	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<0.014U
Aroclor 1254	µg/L		<0.05U	<0.083U	<0.083U	<0.022U	<0.022U
Aroclor 1260	µg/L		<0.05U	<0.083U	<0.083U	<0.023U	<0.023U
Aroclor 1262	µg/L		-	<0.083U	<0.083U	-	-
Aroclor 1268	µg/L		-	<0.083U	<0.083U	-	-
PCBs, Total	µg/L	<b>0.09</b>	<0.05U	<0.083U	<0.083U	<0.012U	<0.014

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

( - ) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



**Table 3**  
**Summary of Groundwater Sample Laboratory Analytical Results**

ChemName	Units	Sample ID	Duplicate	Duplicate	Duplicate	Duplicate	Duplicate
		Monitoring Round	Baseline	2014 Annual	2015 Annual	2016 Annual	2017 Annual
		Well ID	MW-2R	MW-5	MW-2R	MW-1	MW-1
		<b>TOGS 1.1.1</b>					
<b>General Chemistry</b>							
Alkalinity, Total	µg/L		-	391,000	315,000	436,000	403,000
Biological Oxygen Demand, Five day	µg/L		-	23,000	<5,000U	<10,000U	<2,000U
Chemical Oxygen Demand	µg/L		-	230,000	80,000	44,000	27,000
Chloride	µg/L	<b>250000</b>	-	<b>1,300,000</b>	<b>350,000</b>	<b>560,000</b>	<b>840,000</b>
Total Organic Carbon	µg/L		-	22,700	3,400	3,400	1,800
Total Organic Halogen	ug/l		-	46.1	22	24.7	61.1
<b>PCBs</b>							
Aroclor 1016	µg/L		<0.05U	<0.083U	<0.083U	<0.021U	<0.021U
Aroclor 1221	µg/L		<0.05U	<0.083U	<0.083U	<0.028U	<0.028U
Aroclor 1232	µg/L		<0.05U	<0.083U	<0.083U	<0.012U	<0.012U
Aroclor 1242	µg/L		<0.05U	<0.083U	<0.083U	<0.014U	<b>0.061</b>
Aroclor 1248	µg/L		<0.05U	<0.083U	<0.083U	<b>0.41</b>	<0.014U
Aroclor 1254	µg/L		<0.05U	<0.083U	<0.083U	<b>0.238</b>	<0.022U
Aroclor 1260	µg/L		<0.05U	<0.083U	<0.083U	<0.023U	<0.023U
Aroclor 1262	µg/L		-	<0.083U	<0.083U	-	-
Aroclor 1268	µg/L		-	<0.083U	<0.083U	-	-
PCBs, Total	µg/L	<b>0.09</b>	<0.05U	<0.083U	<0.083U	<b>0.648</b>	<b>0.061</b>

TOGS 1.1.1 - Class GA Groundwater Quality Standard or Guidance Value from New York State Department of Environmental Conservation (NYSDEC) Division of Water Technical and Operational Guidance Series (June 1998).

#1 - Guidance value

Baseline samples were taken by others on 11-20-2009 (pre-remediation for PCBs), 7-11-2011 (pre-remediation for alkalinity, COD, BOD, TOC, and TOX), and 6-11-2013 and 6-12-2013 (post-remediation for TCL VOCs, TAL metals - total, and TAL metals - dissolved)

U - Analyzed for but Not Detected above the identified laboratory reporting limit

J - Indicates an estimated value

(-) - No sample analyzed for specific analyte

Bold and highlighted results indicate an exceedance of standards



# Appendices

# Appendix A

## Institutional and Engineering Controls Certification Form



Enclosure 2  
**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**Site Management Periodic Review Report Notice**  
**Institutional and Engineering Controls Certification Form**



	Site Details	Box 1	
<b>Site No.</b> C224133			
<b>Site Name</b> Frito Lay			
Site Address: 202-218 Morgan Avenue	Zip Code: 11237		
City/Town: Brooklyn			
County: Kings			
Site Acreage: 2.8			
Reporting Period: November 22, 2016 to November 22, 2017			
		YES	NO
1. Is the information above correct?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
If NO, include handwritten above or on a separate sheet.			
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.</b>			
5. Is the site currently undergoing development?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<b>Box 2</b>	
		YES	NO
6. Is the current site use consistent with the use(s) listed below? Industrial		<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Are all ICs/ECs in place and functioning as designed?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.</b>			
A Corrective Measures Work Plan must be submitted along with this form to address these issues.			
_____ Signature of Owner, Remedial Party or Designated Representative		_____ Date	

**Box 2A**

YES NO

8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?

**If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.**

9. Are the assumptions in the Qualitative Exposure Assessment still valid?  
(The Qualitative Exposure Assessment must be certified every five years)

**If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.**

**SITE NO. C224133**

**Box 3**

**Description of Institutional Controls**

<u>Parcel</u>	<u>Owner</u>	<u>Institutional Control</u>
3-02942-0105	Rolling Frito Lay Sales, LP	Soil Management Plan Ground Water Use Restriction Landuse Restriction Monitoring Plan Site Management Plan O&M Plan IC/EC Plan
<p>A series of ICs is required by the NYSDEC Decision Document dated July 2011 to: (1) implement, maintain and monitor engineering control (EC) systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Frito-Lay site to industrial uses only. Adherence to these institutional controls (ICs) on the Frito-Lay site is required by the Environmental Easement and will be implemented under the Site Management Plan (SMP).</p> <p>The ICs are:</p> <p>Compliance with the Environmental Easement and the SMP by the Grantor and the Grantor's successors and assigns;</p> <p>All ECs must be operated and maintained as specified in the SMP;</p> <p>All ECs must be inspected at a frequency and in a manner defined in the SMP.</p> <p>Groundwater monitored natural attenuation sampling and analysis, soil vapor intrusion study, and other environmental or public health monitoring must be performed as defined in the SMP;</p> <p>Data and information pertinent to Site Management of the site must be reported at the frequency and in a manner defined in the SMP;</p> <p>All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;</p> <p>Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP; and</p> <p>Operation, monitoring, maintenance, inspection and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.</p> <p>ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.</p> <p>The site has a series of ICs in the form of site restrictions. Adherence to these ICs is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:</p> <p>The property may only be used for industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.</p> <p>The property may not be used for a higher level of use, such as, unrestricted, residential, restricted residential, and commercial use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;</p> <p>All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;</p> <p>The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;</p> <p>The potential for vapor intrusion must be evaluated for any buildings developed on the area noted on Figure 2-3 of the SMP and any potential impacts that are identified must be monitored or mitigated;</p>		

Vegetable gardens and farming on the property are prohibited; and,

The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such property any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

3-02942-0111

Rolling Frito Lay Sales, LP

Soil Management Plan  
Ground Water Use Restriction  
Landuse Restriction  
Monitoring Plan  
Site Management Plan  
O&M Plan  
IC/EC Plan

A series of ICs is required by the NYSDEC Decision Document dated July 2011 to: (1) implement, maintain and monitor engineering control (EC) systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Frito-Lay site to industrial uses only. Adherence to these institutional controls (ICs) on the Frito-Lay site is required by the Environmental Easement and will be implemented under the Site Management Plan (SMP).

The ICs are:

Compliance with the Environmental Easement and the SMP by the Grantor and the Grantor's successors and assigns;

All ECs must be operated and maintained as specified in the SMP;

All ECs must be inspected at a frequency and in a manner defined in the SMP.

Groundwater monitored natural attenuation sampling and analysis, soil vapor intrusion study, and other environmental or public health monitoring must be performed as defined in the SMP;

Data and information pertinent to Site Management of the site must be reported at the frequency and in a manner defined in the SMP;

All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP; and

Operation, monitoring, maintenance, inspection and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

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

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

The property may only be used for industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.

The property may not be used for a higher level of use, such as, unrestricted, residential, restricted residential, and commercial use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;

All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;

The potential for vapor intrusion must be evaluated for any buildings developed on the area noted on Figure 2-3 of the SMP and any potential impacts that are identified must be monitored or mitigated;

Vegetable gardens and farming on the property are prohibited; and,

The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such property any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

3-02942-0112

Rolling Frito Lay Sales, LP

Ground Water Use Restriction  
Landuse Restriction  
Monitoring Plan  
Site Management Plan  
O&M Plan  
IC/EC Plan  
Soil Management Plan

A series of ICs is required by the NYSDEC Decision Document dated July 2011 to: (1) implement, maintain and monitor engineering control (EC) systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Frito-Lay site to industrial uses only. Adherence to these institutional controls (ICs) on the Frito-Lay site is required by the Environmental Easement and will be implemented under the Site Management Plan (SMP).

The ICs are:

Compliance with the Environmental Easement and the SMP by the Grantor and the Grantor's successors and assigns;

All ECs must be operated and maintained as specified in the SMP;

All ECs must be inspected at a frequency and in a manner defined in the SMP.

Groundwater monitored natural attenuation sampling and analysis, soil vapor intrusion study, and other environmental or public health monitoring must be performed as defined in the SMP;

Data and information pertinent to Site Management of the site must be reported at the frequency and in a manner defined in the SMP;

All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP; and

Operation, monitoring, maintenance, inspection and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

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

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

The property may only be used for industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.

The property may not be used for a higher level of use, such as, unrestricted, residential, restricted residential, and commercial use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;

All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;

The potential for vapor intrusion must be evaluated for any buildings developed on the area noted on Figure 2-3 of the SMP and any potential impacts that are identified must be monitored or mitigated;

Vegetable gardens and farming on the property are prohibited; and,

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**Box 4**

**Description of Engineering Controls**

<u>Parcel</u>	<u>Engineering Control</u>
3-02942-0105	Vapor Mitigation Cover System Subsurface Barriers Fencing/Access Control

**Asphalt (Engineered) and Soil Cover Systems:**

Exposure to remaining contamination in soil at the Frito-Lay site is prevented by an asphalt and soil cover system placed over the site. This cover system is comprised of a minimum of 6 inches of asphalt pavement, with the exception along the bulkhead area where a soil cover system consists of a minimum of 1-foot of clean soil/fill able to support a vegetative cover.

**Chain Linked Fence:**

The site is enclosed by a "newly" constructed 10-foot high chain linked fence installed on the eastern, western, and southern sides which prevents unauthorized access. Access to the northern section of the site is available through the Frito-Lay facility.

**Composite Cover System:**

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

**Sub-Slab Depressurization System (SSDS):**

The active SSD system, when it is constructed and operational, will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD system is no longer required, a proposal to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH.

**Monitored Natural Attenuation:**

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



Parcel

Engineering Control

discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

**3-02942-0111**

Vapor Mitigation  
Cover System  
Subsurface Barriers  
Fencing/Access Control

**Asphalt (Engineered) and Soil Cover Systems:**

Exposure to remaining contamination in soil at the Frito-Lay site is prevented by an asphalt and soil cover system placed over the site. This cover system is comprised of a minimum of 6 inches of asphalt pavement, with the exception along the bulkhead area where a soil cover system consists of a minimum of 1-foot of clean soil/fill able to support a vegetative cover.

**Chain Linked Fence:**

The site is enclosed by a "newly" constructed 10-foot high chain linked fence installed on the eastern, western, and southern sides which prevents unauthorized access. Access to the northern section of the site is available through the Frito-Lay facility.

**Composite Cover System:**

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

**Sub-Slab Depressurization System (SSDS):**

The active SSD system, when it is constructed and operational, will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD system is no longer required, a proposal to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH.

**Monitored Natural Attenuation:**

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

**3-02942-0112**

Vapor Mitigation  
Cover System  
Subsurface Barriers  
Fencing/Access Control

**Asphalt (Engineered) and Soil Cover Systems:**

Exposure to remaining contamination in soil at the Frito-Lay site is prevented by an asphalt and soil cover system placed over the site. This cover system is comprised of a minimum of 6 inches of asphalt pavement, with the exception along the bulkhead area where a soil cover system consists of a minimum of 1-foot of clean soil/fill able to support a vegetative cover.

**Chain Linked Fence:**

The site is enclosed by a "newly" constructed 10-foot high chain linked fence installed on the eastern, western, and southern sides which prevents unauthorized access. Access to the northern section of the site is available through the Frito-Lay facility.

**Composite Cover System:**

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

**Sub-Slab Depressurization System (SSDS):**

The active SSD system, when it is constructed and operational, will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD system is no longer required, a proposal to discontinue the SSD system will be submitted by the property owner to the NYSDEC and NYSDOH.

**Monitored Natural Attenuation:**

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards

Parcel

Engineering Control

or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

Box 5

**Periodic Review Report (PRR) Certification Statements**

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

a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO

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

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

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

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

**IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

**A Corrective Measures Work Plan must be submitted along with this form to address these issues.**

\_\_\_\_\_  
Signature of Owner, Remedial Party or Designated Representative

\_\_\_\_\_  
Date

IC CERTIFICATIONS  
SITE NO. C224133

Box 6

**SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE**

I certify that all information and statements in Boxes 1, 2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Cedric Robinson at 7701 Legacy Drive, Plano, TX 75024  
print name print business address

am certifying as Owner (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

*Cedric Robinson*  
Signature of Owner, Remedial Party, or Designated Representative  
Rendering Certification

4/4/18  
Date

IC/EC CERTIFICATIONS

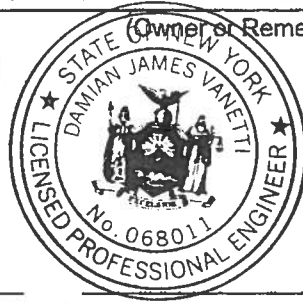
Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Damian J. Vanetti at GHD Consulting Services Inc.  
One Remington Park Drive, Cazenovia, NY 13035  
print name print business address

I am certifying as a Professional Engineer for the Owner  
(Owner or Remedial Party)



1/5/18

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

Date

# Appendix B

## Annual Inspection Form

**SITE-WIDE INSPECTION FORM**

FRITO-LAY 202-218 MORGAN AVENUE  
KINGS COUNTY  
BROOKLYN, NEW YORK  
NYSDEC SITE NUMBER C224133

NAME OF INSPECTOR: Damian Vanetti

COMPANY OF INSPECTOR: GHD

DATE OF INSPECTION: 11-16-17

CURRENT USE OF THE SITE: Frito Lay parking lot

HAS A CHANGE OF LAND-USE OCCURRED SINCE THE LAST INSPECTION?  
 YES  NO

IF YES, EXPLAIN HOW THE SITE HAS CHANGED: \_\_\_\_\_  
\_\_\_\_\_

IS THERE EVIDENCE OF LAND-USE OTHER THAN FOR INDUSTRIAL SINCE THE LAST INSPECTION?  
 YES  NO

IF YES, EXPLAIN THE NON-INDUSTRIAL LAND USE: \_\_\_\_\_  
\_\_\_\_\_

HAVE ANY STRUCTURES BEEN CONSTRUCTED ON THE SITE SINCE THE LAST INSPECTION?  YES  NO

IF YES, EXPLAIN HOW THE SITE HAS CHANGED: \_\_\_\_\_  
\_\_\_\_\_

GENERAL DESCRIPTION OF THE COVER: Soil cover around perimeter of paving to south and east. Rip rap cover to south outside fence line. Soil cover to east outside fence line. Soil cover in south west corner and concrete curb. Remainder is asphalt pavement

HAS THE COVER BEEN COMPROMISED?  YES  NO

IF YES, EXPLAIN HOW THE COVER HAS CHANGED: \_\_\_\_\_  
\_\_\_\_\_

**SITE-WIDE INSPECTION FORM**

FRITO-LAY 202-218 MORGAN AVENUE  
KINGS COUNTY  
BROOKLYN, NEW YORK  
NYSDEC SITE NUMBER C224133

IS THERE A VISABLE CHANGE IN THE DESIGNATED DRAINAGE PATTERN?

\_\_\_ YES  NO

IF YES, EXPLAIN WHERE THE VISABLE CHANGE IN THE DESIGNATED DRAINAGE PATTERN ARE LOCATED: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

IS SETTLEMENT OR SUBSIDNCE VISIBLE?

\_\_\_ YES  NO

IF YES, EXPLAIN WHERE SETTLEMENT OR SUBSIDNCE VISIBLE IS LOCATED:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ARE SIGNIFICANT EROSION RILLS OR CRACKING PRESENT?

\_\_\_ YES  NO

IF YES, EXPLAIN WHERE EROSION RILLS OR CRACKING ARE PRESENT: \_\_\_\_\_

*Minor surface cracks in asphalt pavement*

ARE ALL GROUNDWATER MONITORING WELLS MAINTAINED PROPERLY AND IN GOOD PHYSICAL CONDITION?

YES \_\_\_ NO *see photos*

IF NO, EXPLAIN HOW THE GROUNDWATER MONITORING WELLS HAVE BEEN COMPROMISED:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



LEGEND:  
 ◆ MW-1 Groundwater Monitoring Well  
 □ Location and ID

Job Number 86-16480  
 Revision A  
 Date 07.06.2017  
**Figure 2**

Rolling Frito-Lay Sales, LP  
 202-218 Morgan Avenue BCP Site  
 Brooklyn, NY (BCP Site #C224133)



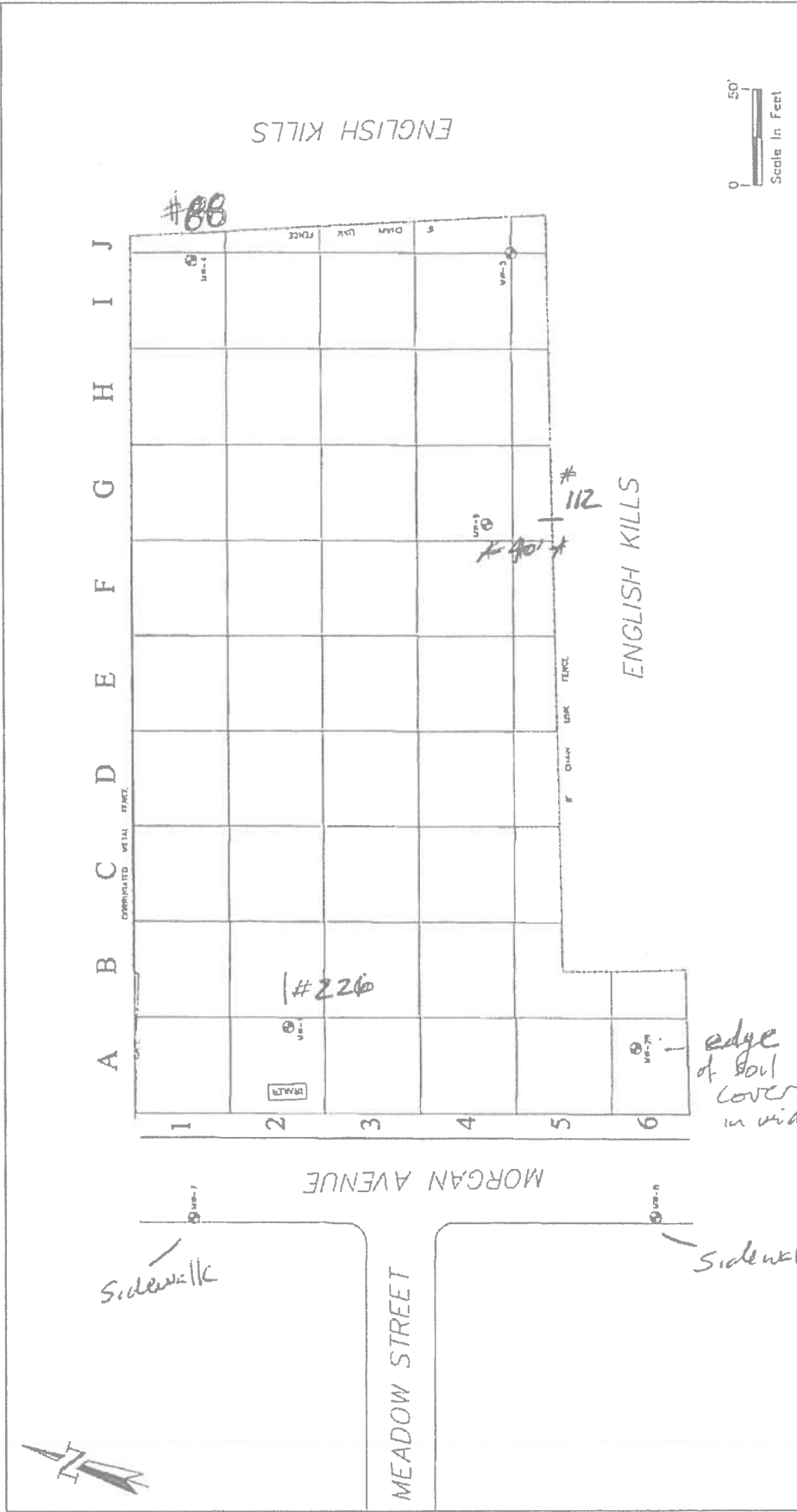
Site Layout

One Remington Park Drive, Cazenovia NY 13035 USA T 1 315 679 5800 F 1 315 679 5801 E cazmail@ghd.com W www.ghd.com

NOTES:  
 1. Aerial photograph is a 2014 6-inch resolution true color image taken from the U.S. Geological Survey website: <http://hd2.farcasterbare.usgs.gov/>  
 2. Site features taken from an as-built field survey completed by FCS&S on August 21, 2013.







**MONITORING WELL LOCATIONS**  
FRITO LAY, INC.  
202-218 MORGAN AVENUE, BROOKLYN, NEW YORK

**LEGEND**  
● MONITORING WELL  
NOTE: RYSDEC TOGS IS THE NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
TECHNICAL AND OPERATIONAL GUIDANCE SERIES

# Appendix C

## Approval Notification for EQUIS Database Submittal

## Ian McNamara

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**From:** dec.sm.NYENVDATA <NYENVDATA@dec.ny.gov>  
**Sent:** Wednesday, August 02, 2017 1:50 PM  
**To:** Ian McNamara  
**Cc:** Post, Charles H (DEC)  
**Subject:** RE: 202-218 Morgan Avenue BCP Site (Site #C224133) - Annual 2017 Groundwater Monitoring EQUIS Submittal

**CompleteRepository:** 8616480  
**Description:** Frito-Lay Brooklyn BCP  
**JobNo:** 16480  
**OperatingCentre:** 86  
**RepoEmail:** 8616480@ghd.com  
**RepoType:** Job

Ian,

Thank you, I appreciate the initiative you've shown, creating a revised copy for the previously loaded EDD as well. Accordingly, we've rolled back the data we loaded from 20160629 1239.C224133.NYSDEC and loaded your replacement, 20170731 1426.C224133.NYSDEC.

We've successfully uploaded the dataset 20170731 1424.C224133.NYSDEC to Frito Lay in the NYSDEC database as well.

Aaron  
NYSDEC EIMS Team



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**From:** Ian McNamara [mailto:ian.McNamara@ghd.com]  
**Sent:** Monday, July 31, 2017 2:28 PM  
**To:** dec.sm.NYENVDATA <NYENVDATA@dec.ny.gov>  
**Cc:** Post, Charles H (DEC) <charles.post@dec.ny.gov>  
**Subject:** RE: 202-218 Morgan Avenue BCP Site (Site #C224133) - Annual 2017 Groundwater Monitoring EQUIS Submittal

*ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.*

Hello,  
Attached is a revised EDD for the May 2017 sampling event adding a date to the Trip Blank sample code. I also included a revised EDD for the May 2016 sampling event if you would like to upload to correct the previous discrepancy with the Trip Blank sample.  
Thanks,  
Ian

**Ian McNamara, GIT (PA)**  
Scientist III

**GHD**

T: 1 315 679 5732 | M: 1 315 368 8432 | V: 865732 | E: [ian.mcnamara@ghd.com](mailto:ian.mcnamara@ghd.com)  
One Remington Park Drive Cazenovia New York 13035 USA | [www.ghd.com](http://www.ghd.com)  
[WATER](#) | [ENERGY & RESOURCES](#) | [ENVIRONMENT](#) | [PROPERTY & BUILDINGS](#) | [TRANSPORTATION](#)

Please consider the environment before printing this email

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**From:** dec.sm.NYENVDATA [<mailto:NYENVDATA@dec.ny.gov>]  
**Sent:** Monday, July 31, 2017 2:13 PM  
**To:** Ian McNamara <[Ian.McNamara@ghd.com](mailto:Ian.McNamara@ghd.com)>  
**Cc:** Post, Charles H (DEC) <[charles.post@dec.ny.gov](mailto:charles.post@dec.ny.gov)>  
**Subject:** RE: 202-218 Morgan Avenue BCP Site (Site #C224133) - Annual 2017 Groundwater Monitoring EQUIS Submittal

Ian,

Your firm has submitted the sample code 'TRIP BLANK' before, for a sample collected in May of 2016. If we load 20170725 1107.C224133.NYSDEC to the NYSDEC database as-is, it will merge the new 'TRIP BLANK' information for your trip blank sample collected in May of 2017 with the old trip blank sample. We'll load your data as-is if the NYSDEC Project Manager, copied on this message, insists that we do so – but anyone generating reports from the C224133 data we will have loaded to the database will be confronted with misleading information relating to the 'TRIP BLANK' sample. Either the sample 'TRIP BLANK' can have the sampling date from May of 2016 or the date from 2017. It can't have both.

In the meantime, we've loaded the data from the 20170725 1103.C224133.NYSDEC dataset. The data is available for use within the system.

Thank you,  
Aaron  
NYSDEC EIMS Team



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**From:** Ian McNamara [<mailto:Ian.McNamara@ghd.com>]  
**Sent:** Friday, July 28, 2017 8:37 AM  
**To:** dec.sm.NYENVDATA <[NYENVDATA@dec.ny.gov](mailto:NYENVDATA@dec.ny.gov)>  
**Cc:** Post, Charles H (DEC) <[charles.post@dec.ny.gov](mailto:charles.post@dec.ny.gov)>  
**Subject:** 202-218 Morgan Avenue BCP Site (Site #C224133) - Annual 2017 Groundwater Monitoring EQUIS Submittal

*ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.*

Hello,  
Attached are 2 EDDs for the 2017 Annual sampling event at the above referenced site. One contains field parameters and water levels and one contains analytical results.  
Please let me know if edits are needed for a successful upload.  
Thank you,  
Ian

**Ian McNamara, GIT (PA)**  
Scientist III

**GHD**

T: 1 315 679 5732 | M: 1 315 368 8432 | V: 865732 | E: [ian.mcnamara@ghd.com](mailto:ian.mcnamara@ghd.com)  
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