



Glenn Springs Holdings, Inc.

A subsidiary of Occidental Petroleum

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February 28, 2018

Reference No. 001431

Mr. Brian Sadowski
New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999

Dear Mr. Sadowski:

**Re: 2017 Annual Periodic Review Report
102nd Street Landfill Site, Niagara Falls, New York**

Per the requirements of the Consent Decree and the Operations and Maintenance (O&M) Manual, Glenn Springs Holdings, Inc. (GSH) is submitting the 2017 Annual Periodic Review Report for the 102nd Street Landfill Site.

Please contact me at 231-670-6809 or email at joseph_branch@oxy.com should you have any questions or concerns.

Very truly yours,

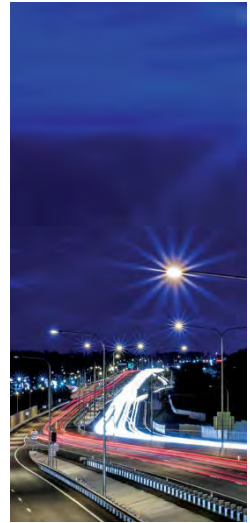
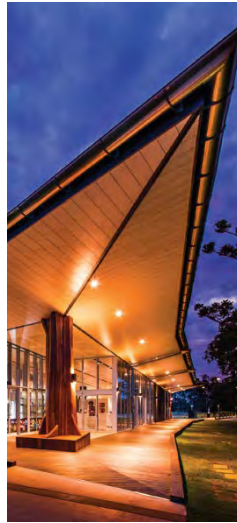
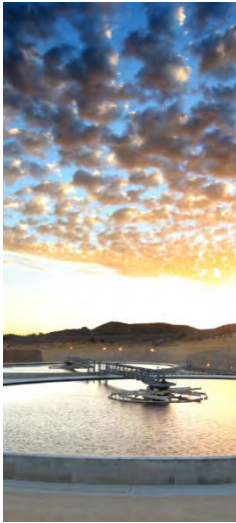
GLENN SPRINGS HOLDINGS, INC.

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2017 Annual Periodic Review Report

102nd Street Landfill Site
Niagara Falls, New York
NYSDEC Site No. 932022

Glenn Springs Holdings, Inc.

GHD | 2055 Niagara Falls Boulevard Niagara Falls New York 14304 USA
001431| Report No 94 | February 28, 2018



Executive Summary

The following report describes the Operation, Maintenance, and Monitoring (OM&M) activities for 2017 at the 102nd Street Landfill Site (Site) located in Niagara Falls, New York. The Site covers approximately 22.1 acres and consists of two separate properties owned by Occidental Chemical Corporation (OCC) (15.6 acres) and Olin Corporation (Olin) (6.5 acres). Management of the Site is performed on behalf of OCC and Olin by Glenn Springs Holdings, Inc. (GSH), an affiliate of OCC. Since October 1, 2008, GHD Services, Inc. (GHD), formerly Conestoga-Rovers & Associates (CRA), has performed operation, maintenance, monitoring, and reporting activities for the Site under contract to and direct management of GSH.

During 2017, the Remedial Action (RA) system components at the Site performed as designed. The leachate collection system removed 168,368 gallons of Aqueous Phase Liquid (APL) from the Site. The slurry wall installed at the Site continued to function as designed. Water level monitoring showed that an inward gradient, with respect to the potential for groundwater to flow across the slurry wall, continued to be maintained throughout the year at all 10 well pairs with the exception of one location during the March and December 2017 monitoring events. An inward gradient is demonstrated by a lower water elevation inside the slurry wall as compared to water elevations outside the slurry wall. In the case of well pairs with a dry inside well, the bottom elevation of the dry inside well was compared to the elevation of the water level at the outside well. At one location, the March and December 2017 monitoring events showed a slight outward gradient. Groundwater potentiometric contours demonstrate that groundwater flows in a north-to-south direction towards the APL collection trench.

In 2017, approximately 476.7 gallons of Non-Aqueous Phase Liquid (NAPL) were recovered from the Site NAPL Recovery (NR) Wells. The recovered NAPL was recovered and stored temporarily on Site in two 2,500-gallon accumulation containers, containerized, and shipped to the Clean Harbors Aragonite facility in Aragonite, Utah for incineration.

The 2017 data indicate that there has been no significant change in chemical and hydrogeological conditions at the Site. The APL collection trench continues to collect sufficient leachate from the landfill to maintain an inward gradient across the slurry wall and create a depressed water table inside the slurry wall. As mentioned above, the slurry wall is functioning as designed, preventing off-Site migration and influx of groundwater.



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1. Introduction

The following report describes the Operation, Maintenance, and Monitoring (OM&M) activities for 2017 at the 102nd Street Landfill Site (Site) located in Niagara Falls, New York (Figure 1.1). Management of the Site is performed on behalf of Occidental Chemical Corporation (OCC) and Olin Corporation (Olin) by Glenn Springs Holdings, Inc. (GSH), an affiliate of OCC. Since October 1, 2008, GHD Services, Inc. (GHD), formerly Conestoga-Rovers & Associates (CRA), has performed operation, maintenance, monitoring, and reporting activities for the Site under contract to and direct management of GSH.

The Site covers approximately 22.1 acres and consists of two separate properties owned by OCC (15.6 acres) and Olin (6.5 acres). The Site is bordered by the Niagara River to the south, Buffalo Avenue to the north, Griffon Park to the west, and privately owned land to the east. A perimeter fence restricts Site access. Authorized vehicular traffic access is provided from Buffalo Avenue by locked fence gates.

Remedial construction at the Site was completed in 1999, and groundwater pumping began in March 1999. The groundwater collection system at the Site is shown on Figure 1.2.

Final responses to the comments for the Final Closure Report for the Site were submitted to the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) (collectively, the "Agencies") on September 22, 2000. The Certificate of Completion for the Site was accepted by the Agencies on March 13, 2002, signifying that all remedial work had been completed. Subsequently, the formal initiation of the OM&M for the Site occurred in April 2002. This report is the 16th annual report for the Site.

The Remedial Action (RA) system components at the Site that have associated OM&M activities are as follows:

- Landfill cap
- Perimeter slurry wall
- Aqueous Phase Liquid (APL) collection and discharge system
- Non-Aqueous Phase Liquid (NAPL) recovery system
- Post-RA system performance monitoring
- Perimeter fence

This report describes the OM&M activities conducted in accordance with the OM&M Manual and presents the data collected at the Site between January 1, 2017 and December 31, 2017. The completed NYSDEC Institutional and Engineering Control Certification (ICEC) Form is included as Appendix A.



2. Site Monitoring Programs

The Site monitoring program was established to monitor the effectiveness of the RA system components and includes the following activities/programs:

- Quarterly groundwater level measurements
- Annual groundwater quality monitoring
- Quarterly NAPL presence monitoring
- Accelerated NAPL Recovery Program (ANRP)

2.1 Hydraulic Monitoring Program

Hydraulic monitoring at the Site consists of the measurement of water levels in monitoring wells to determine groundwater elevations. This includes 10 monitoring well pairs, each with a monitoring well located inside the slurry wall (PZ-01 through PZ-10) and a corresponding monitoring well located outside the slurry wall (PCM-01 through PCM-10). The measurements are used to evaluate RA system performance toward establishment of a depressed water table inside the slurry wall by comparing the water levels in each monitoring well pair. A lower water elevation inside the slurry wall than the water elevation outside the slurry wall at each monitoring well pair demonstrates that the water table has been depressed and that an "inward gradient" with respect to groundwater flow across the slurry wall has been created. The established monitoring well pairs are listed in Table 2.1, and the locations of the monitoring wells and slurry wall are shown on Figure 1.2.

Groundwater level measurements in the monitoring wells were measured quarterly in 2017, in accordance with the OM&M Manual. The 2017 water level measurements have been converted to elevations and are presented in Table 2.2. Table 2.2 also presents measured groundwater elevations for Site NAPL recovery (NR) wells and wet wells. The elevations for each of the monitoring well pairs and the gradients achieved for the quarterly events throughout the year are presented in Table 2.3.

Groundwater elevations are listed on the Annual Report Forms (Appendix B). Data for 2002 through 2017 have been graphed to show groundwater elevation trends (Appendix C). The quarterly groundwater elevations and associated potentiometric groundwater contours are presented on Figures 2.1 through 2.4.

2.2 Groundwater Quality Monitoring Program

The groundwater quality monitoring program consists of ten overburden monitoring wells (PCM-01 through PCM-10) and three bedrock monitoring wells (PCBM-01 through PCBM-03). These wells were sampled quarterly for the first 2 years following initiation of the OM&M in 2002, and then semiannually for the next 8 years through 2011. In 2012, sampling frequency decreased to annually in accordance with the approved OM&M Manual.

Annual groundwater quality monitoring was performed in October 2017. Samples were analyzed for Site-Specific volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides (i.e. hexachlorocyclohexanes), mercury, and arsenic. Table 2.4 presents the results of



the current groundwater monitoring event. Historical groundwater monitoring results are presented in Tables D-1 and D-2 of Appendix D. The next groundwater quality monitoring event will occur in October 2018.

Chemical concentrations present in the groundwater have been graphed for select monitoring wells (PCM-03, PCM-04, and PCM-05) to evaluate concentration trends and determine if any of the levels are increasing. These graphs are presented in Appendix E. The monitoring well locations and parameters presented were selected based on the historical detection of compounds. Those monitoring well locations and parameters not included in Appendix E are typically non-detect with the occasional low level detections and, therefore, do not present any useful data with regard to a discussion of historical analytical trends at the Site.

The monitoring well purge records for the 2017 groundwater quality monitoring event are presented in Appendix F.

2.3 NAPL Presence Monitoring Program

The NAPL presence monitoring program consists of eight NR wells (NR-01 through NR-05, NR-07, NR-08, and NR-10). NAPL presence monitoring began in these wells in April 2002, immediately after the Agencies accepted the Certificate of Completion. In accordance with the OM&M Manual, NAPL presence was checked each month for the first 3 months. The monthly monitoring ended in June 2002. Since June 2002, the NAPL presence monitoring has been completed quarterly. If during the quarterly monitoring more than 3 gallons of NAPL (6 inches deep in the 12-inch diameter well) is present in a NR well, the NAPL will be removed. NAPL removal will occur from April through October, during the warmer months of the year.

In December 2003, GSH submitted the "NAPL Extraction Program Work Plan for Accelerated Recovery" to determine the production capability and possible accelerated extraction of NAPL at NR-02 (known to have a quick recharge rate). As a result of the pumping tests conducted per the Work Plan, the ANRP was implemented in 2004. This program involved the continuous removal of NAPL from NR-02 through the use of a low-flow, automated pump installed in the NR-02 well with daily measurements, while the remaining NR wells were monitored quarterly and NAPL removed as necessary, per the OM&M Manual.

On June 23, 2010, CRA, on behalf of GSH, submitted a memorandum documenting modifications to the ANRP at the Site. The memo summarized March 10, 2011 discussions with Mr. Brian Sadowski of NYSDEC regarding a reduction in frequency of NAPL removal at NR-02 and the addition of NR-03 to the ANRP. Quarterly NAPL presence and removal data in 2010 indicated that NAPL presence in the vicinity of NR-02 may be diminishing, either due to a decrease in NAPL in the area of NR-02 (indicating a successful implementation of the recovery program), or possibly a result of creating a "de-NAPLed" (absence of NAPL) area around NR-02 due to the long-term pumping at this location and a decreased recharge rate of the NAPL. Due to the reduction in NAPL removed from NR-02, it was proposed to reduce the frequency of monitoring at NR-02 from continuous to weekly. Historic amounts of NAPL removed from NR-03, along with quarterly NAPL measurements during 2010, indicated that there may be sufficient NAPL present at NR-03 such that additional NAPL removal would be beneficial. Therefore, NR-03 was proposed to be added to the ANRP on a temporary basis. Mr. Sadowski agreed to the modification to the program, effective



immediately, with the addition of NR-03 and with the stipulation that NR-02 would be checked, and NAPL removed as necessary, no less than on a weekly frequency. The modification was further discussed and confirmed during the May 27, 2010 NYSDEC annual Site inspection. The addition of NR-03 to the ANRP was originally to be on a continuous basis. Monitoring and continuous removal of NAPL from NR-03 (in addition to weekly removal from NR-02) began in May 2010. A low NAPL recharge rate at NR-03 resulted in the pumping frequency at this NR well being reduced from continuous to twice weekly (NAPL checks and pumping as necessary), and subsequently from twice weekly to its current weekly frequency as approved by the NYSDEC. Subsequently, the high recharge rate in NR-02 resulted in an increase in NAPL check and pumping frequency from weekly to its current twice weekly frequency as approved by NYSDEC.

Results of the 2017 NAPL presence monitoring are included on the Annual Report Forms presented in Appendix B.

3. Site Monitoring Results

3.1 Hydraulic Monitoring Results

The 2017 quarterly groundwater elevations and potentiometric groundwater contours are shown on Figures 2.1 through 2.4. Where groundwater was present, inward gradients across the slurry wall towards the landfill (as indicated by a lower water elevation inside the slurry wall than outside the slurry wall) were demonstrated at all monitoring wells pairs for each event with the exception of well pair 7 (PCM-07R and PC-07) during the March and December 2017 events. During the March 2017 monitoring event, well pair 7 exhibited an outward gradient of 3.69 feet. Well pair 7 also exhibited an outward gradient of 1.53 feet during the December 2017 monitoring event.

PZ-06 and PZ-08 were dry during all of the quarterly events. The difference in elevation used to demonstrate an inward gradient at these monitoring well pairs during dry events was calculated using the bottom elevation of each dry monitoring well, with the rationale that if the monitoring well was dry, the water elevation would have to be at an elevation below the bottom of the monitoring well. PCM-06 was also dry during the March 2017 event. Since the corresponding well PZ-06 was also dry, a gradient could not be determined. The water level elevations in the monitoring wells outside the slurry wall were higher than the elevation of the bottom of the dry monitoring wells inside the slurry wall; therefore, regardless of the dry conditions at PZ-06 and PZ-08, an inward gradient across the slurry wall was maintained at these two monitoring well pairs in 2017.

Piezometers PZ-06, PZ-07, PZ-08, PZ-09R, and PZ-10 are located along the northern side of the Site, and as shown on Figures 2.1 through 2.4, exhibit groundwater elevations ranging from 564.34 feet above mean sea level (AMSL) to 569.66 feet AMSL. The remaining wells inside the slurry wall at the Site (piezometers PZ-01, PZ-02, PZ-03R, PZ-04, PZ-05), NAPL recovery wells (NR-01, NR-02, NR-03, NR-04, NR-05, NR-07, NR-08, NR-10), and Wet Wells (1 through 4) to the south of piezometers PZ-06, PZ-07, PZ-08, PZ-09R, and PZ-10 exhibit groundwater elevations ranging from 560.02 feet AMSL to 561.70 feet AMSL. Groundwater potentiometric contours presented on Figures 2.1 through 2.4 demonstrate that within the landfill, groundwater flows in a north-to-south direction towards the APL collection trench (located on the south side of the Site along the Niagara River and portions of the east and west sides of the Site). Therefore, the water



table is depressed inside the slurry wall and any groundwater impacts would migrate to the APL collection trench.

3.2 Groundwater Quality Monitoring Results

Overburden Monitoring Wells

In 2017, groundwater samples were collected from nine of the ten monitoring wells included in the annual analytical program (monitoring well location PCM-06 had an insufficient volume of water for sampling; therefore no samples were collected from that location). Chemical concentrations in groundwater samples exceeded NYSDEC Class GA groundwater criteria in 3 of the 9 overburden monitoring wells sampled in 2017 (PCM-03, PCM-04, and PCM-05). Concentrations in PCM-03, PCM-04, and PCM-05 were consistent with previous sampling results. With respect to VOCs, well PCM-03 had concentrations of benzene, chlorobenzene, 2-chlorotoluene and dichlorobenzenes that exceeded criteria. Well PCM-04 had concentrations of benzene, chlorobenzene and dichlorobenzenes that exceeded criteria. Well PCM-05 had a concentration of chlorobenzene that exceeded criteria. With respect to the SVOCs, well PCM-03 and PCM-04 had concentrations of 2-chlorophenol and 4-chlorophenol, and PCM-04 had concentrations of 2,4-dichlorophenol that exceeded criteria. Additionally, well PCM-03 had concentrations of pesticides (beta-BHC and delta-BHC) that exceeded criteria. The criteria exceedances at all of these locations are consistent with, or lower than, historical concentrations at these wells (see Appendix D).

Pursuant to a request from the USEPA regarding the residual chemical detections in PCM-03, PCM-04, and PCM-05, as outlined in their letter dated April 21, 2016, GSH conducted offshore sediment and surface water sampling in the Niagara River proximate to these three monitoring wells on August 16, 2017. The sampling was conducted in accordance with a work plan outlined in a letter dated August 17, 2016 and modified in a letter dated February 17, 2017. The results of the sampling were submitted to the Agencies in a letter dated November 28, 2017. There were no detections of analyzed parameters in the surface water samples. Concentrations of mercury, arsenic, and/or gamma-BHC (lindane) were the only parameters detected in the sediment samples but the concentrations were below Class A Freshwater Sediment Guidance Values published in the document entitled "Screening and Assessment of Contaminated Sediment" by NYSDEC, Division of Fish, Wildlife and Marine Resources, Bureau of Habitat, dated June 24, 2014. Since all detections were below Class A Freshwater Sediment Guidance Values, the concentrations present little to no potential for risk to aquatic life and therefore require no further evaluation. Based on these sampling results, the residual chemistry in monitoring wells PCM-03, PCM-04, and PCM-05 has not impacted surface water or sediment offshore of the Site.

Arsenic was detected at an estimated concentration of 52 micrograms per liter ($\mu\text{g/L}$) at PCM-09 in 2014, which is greater than the NYSDEC Class GA groundwater criteria of 25 $\mu\text{g/L}$. During the 2015 and 2016 sample events, well PCM-09 had an insufficient volume of water for sampling, preventing a sample from being collected. However, sufficient water was available in PCM-09 during the 2017 sampling event and a sample was collected. Arsenic was non-detect in the sample. Arsenic had not been detected in PCM-09 prior to 2014. Low levels of arsenic have been detected intermittently at other wells outside of the slurry wall. The hydraulic gradient at PCM-09 is inward towards the slurry wall, with inward groundwater gradients ranging from 2.59 feet to 6.93 feet between PCM-09 and PZ-09R observed in 2017. This fact, combined with the southward flow of groundwater within the



slurry wall, make off-Site migration of arsenic towards PCM-09 unlikely. The arsenic concentration in PCM-09 will continue to be monitored in the coming year.

Bedrock Monitoring Wells

NYSDEC Class GA groundwater criteria were not exceeded in any of the three bedrock monitoring wells that were sampled for groundwater quality in 2017.

3.3 NAPL Presence Monitoring Results

Monitoring for the presence of NAPL at the eight NR wells is checked quarterly. Results of the quarterly NAPL monitoring events are presented in the Annual Report Forms included in Appendix B.

NAPL was present in five of the eight NR wells in 2017 (NR-01 through NR-03, NR-05 and NR-08). The thickness of NAPL in these five wells ranged from 0.41 (NR-05) to 1.90 feet (NR-02) (see page B-2 of Appendix B). NAPL was removed from the wells between April and October 2017 when it was present in quantities of more than 3 gallons OR at a thickness greater than 6 inches.

4. Operation of 102nd Street Landfill Systems

4.1 APL Collection and Discharge System Operation

The individual APL pumps in the four APL collection wet wells operated throughout 2017 on level control. The pump in Wet Well 2 is set to start up at an elevation of 560.4 feet AMSL (2.6 feet below the average Niagara River water level) and to shut down when the elevation in the well reaches 560.2 feet AMSL. Over the years, the set points on the pumps in Wet Wells 1, 3, and 4 have been lowered to encourage pumping in the wells. The pumps in Wet Wells 1, 3, and 4 are set to start up at elevations of 561.3, 561.4, and 561.4, respectively, and to shut down when the elevations in the wells reach 561.1, 561.2, and 561.2, respectively.

A total of 168,368 gallons of APL was removed from the Site and pumped to the Love Canal Treatment Facility (LCTF). There, the APL was treated and discharged to the City of Niagara Falls Sanitary Sewer System, under the Niagara Falls Water Board Significant Industrial User (SIU) Permit #44. A total of approximately 9.6 million gallons of APL have been recovered from the Site since pumping was initiated in March 1999.

In 2017, Wet Well 1 collected 0.9 percent of the total APL for the Site, Wet Well 2 collected 98.2 percent, Wet Well 3 collected 0.4 percent, and Wet Well 4 collected 0.5 percent.

4.2 NAPL Recovery

The total volume of NAPL removed from the NR wells at the Site in 2017 was approximately 476.7 gallons (Table 4.1). The majority of the NAPL (467.2 gallons) was pumped from NR-02 (Table 4.2).

Table 4.1 shows the current and historical NAPL recoveries from the on-Site NR wells. Approximately 71,153 gallons of NAPL have been recovered at the Site to date.



4.2.1 NR-02 and NR-03 NAPL Recovery

As discussed in Section 2.3, in 2010 a temporary change to the ANRP at the Site was implemented. Previous to June 2010, the ANRP consisted of continuous NAPL recovery at well NR-02 and quarterly NAPL presence checks and recovery (if necessary) from NR-01, NR-03, NR-04, NR-05, NR-07, NR-08, and NR-10 between April and October of each year. The June 2010 modification and the evaluations of data collected thereafter resulted in the current schedule of NAPL removal at NR-02 twice weekly, NR-03 weekly, and quarterly at the remaining NR wells.

As per the approved modification to the ANRP, pumping at NR-02 was conducted twice weekly during the second and third quarters of 2017 and resulted in a total NAPL recovery of 467.2 gallons. Table 4.2 presents a summary of NAPL removed from NR-02 during 2017. The removal of NAPL from NR-02 will continue to be evaluated, and options to maximize NAPL removal and optimize the pumping schedule at NR-02 will be considered.

Weekly NAPL checks at well NR-03 were conducted from March through the beginning of October during 2017. Due to the high viscosity of the NAPL and typical measurements of NAPL of less than 6 inches, only 5 gallons of NAPL were removed from NR-03 in 2016. In addition, 4.5 gallons were removed from NR-01.

4.2.2 NAPL Storage and Disposal

NAPL removed from the NR wells during 2017 was pumped into one of two 2,500-gallon double-walled skid-mounted steel tanks with internal secondary containment. The tanks are located at NR-02 and NR-03 due to the current pumping schedule and can be easily moved depending on the productivity of the two wells during pumping events. The two 2,500-gallon NAPL tanks are inspected as part of the 102nd Street daily inspections. The 2017 daily inspections of the NAPL tanks did not identify any issues.

Approximately 4,400 pounds of accumulated NAPL were containerized and transported to the Clean Harbors Aragonite facility in Aragonite, Utah for incineration in 2017.

5. Site Maintenance and Inspections

5.1 Site Inspections

Daily inspections were conducted at the Site in 2017, as per the OM&M Manual. Copies of the daily inspection forms are available upon request.

The 2017 annual NYSDEC Site inspection was conducted on July 19, 2017 by representatives from NYSDEC, GSH, and GHD. During the Site Inspection, the RA system components are reviewed to ensure Site compliance. The inspection included a general Site walk and covered all portions of the landfill remediation including the APL Collection System, APL Discharge System, Landfill Cap, Bulkhead, and Storm Sewer. No deficiencies were noted.



5.2 Monitoring Well Inspections

The monitoring wells, NAPL recovery wells, and wet wells are inspected on an annual basis. The well depth is sounded, and the probe inspected for signs of NAPL. Additionally, the physical condition of each well is assessed, and any necessary repairs are noted as part of the water level measurement and groundwater sampling procedures. The 2017 well inspections were carried out on June 7 and October 4, 2017. No issues requiring immediate attention with the wells were noted. Several minor routine maintenance items were noted and were/will be repaired as time permits.

5.3 Activities

Activities performed at the Site in 2017 included the following:

- Mowed the landfill vegetation once after August 15th to inhibit the growth of woody material
- Cleaned debris and removed rocks from the fence line around 102nd Street storm sewer inlet
- Maintained (including scheduled preventative maintenance) all pumps and on-Site control equipment to ensure proper function
- Monitored and pumped NAPL from NR-02 (twice per week) and NR-03 (once per week) between April and October
- Removed NAPL from the accumulation tanks and disposed off-Site
- Repaired Wet Well 4 flow indicator

5.4 Site Beautification/Wildlife

Wildlife/beautification enhancements implemented at the Site in the past continue to provide wildlife habitat and beneficial reuse.

These enhancements have included the following:

- Inspection, observation, and documentation of animal houses and wildlife
- Planting of lancer pea on a large portion of the landfill cap at the beginning of O&M activities at the Site to provide food for waterfowl
- Replanting the embayment area with water celery to enhance fish habitat
- Growth of native grasses and flowers on the landfill cap
- Installation of bluebird houses and bat boxes on the perimeter of the landfill cap
- Daily inspection of perimeter fencing and Site cover and removal of litter as necessary, which enhances the aesthetics of the Site when viewed from the Niagara River, from Buffalo Avenue, and from Griffon Park
- Other than the once yearly mowing that occurs after August 15th of the landfill cap vegetation, periodic mowing of only the space necessary to safely access the Site groundwater and NR wells. This is done to minimize the disruption of wildlife habitat in the native growth of the landfill cover vegetation.

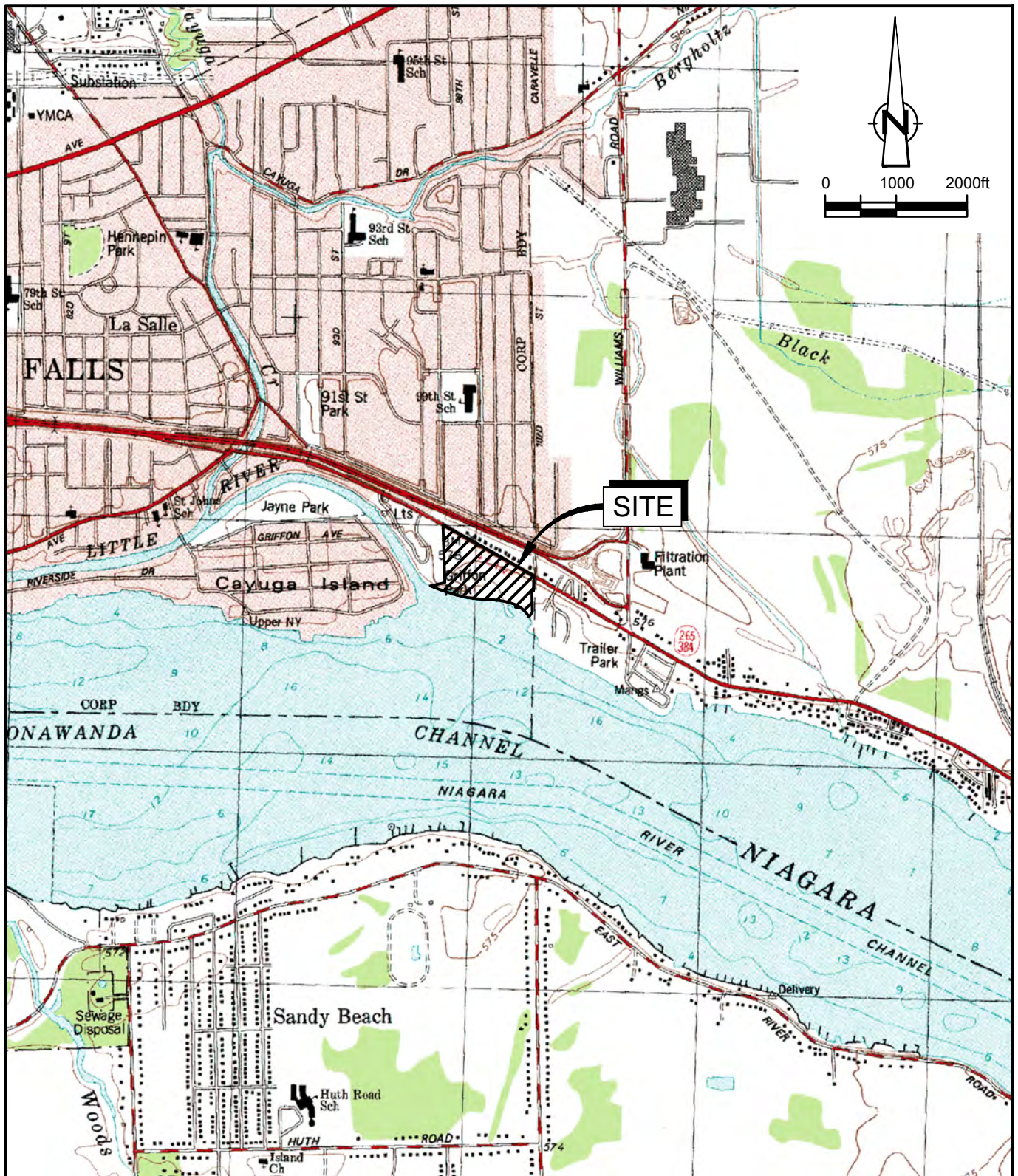


6. Conclusions and Recommendations

During 2017, the RA system components at the Site performed as designed. The leachate collection system removed 168,368 gallons of APL from the Site. Water level monitoring showed that an inward gradient, with respect to groundwater flow across the slurry wall, continues to be maintained throughout the year as indicated by a lower water elevation inside the slurry wall than outside the slurry wall with the exception of one location during the March and December 2017 monitoring events. Well pair 7 did exhibit a slight outward gradient during the March and December monitoring events. To address the elevated water level in PZ-07 in three of the monitoring events, GHD recommends redeveloping PZ-07 in 2018. Groundwater potentiometric contours demonstrate that groundwater flows in a north-to-south direction towards the APL collection trench.

In 2017, approximately 476.7 gallons of NAPL were recovered from the Site NR wells. The recovered NAPL was stored temporarily on Site in one of two 2,500-gallon containers during 2017, containerized, and was shipped to an off-Site disposal facility (incinerators) (Clean Harbors, Aragonite, Utah) for final destruction.

The 2017 data indicate that there has been no significant change in chemical and hydrogeological conditions at the Site. The APL collection trench continues to collect sufficient leachate from the landfill to maintain an inward gradient across the slurry wall and create a depressed water table inside the slurry wall. The slurry wall is functioning as designed, preventing off-Site migration and the influx of off-Site groundwater.



SOURCE: USGS QUADRANGLE MAP;
TONAWANDA WEST, NEW YORK, 1980

figure 1.1

SITE LOCATION
2017 PERIODIC REVIEW REPORT
102ND STREET LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York



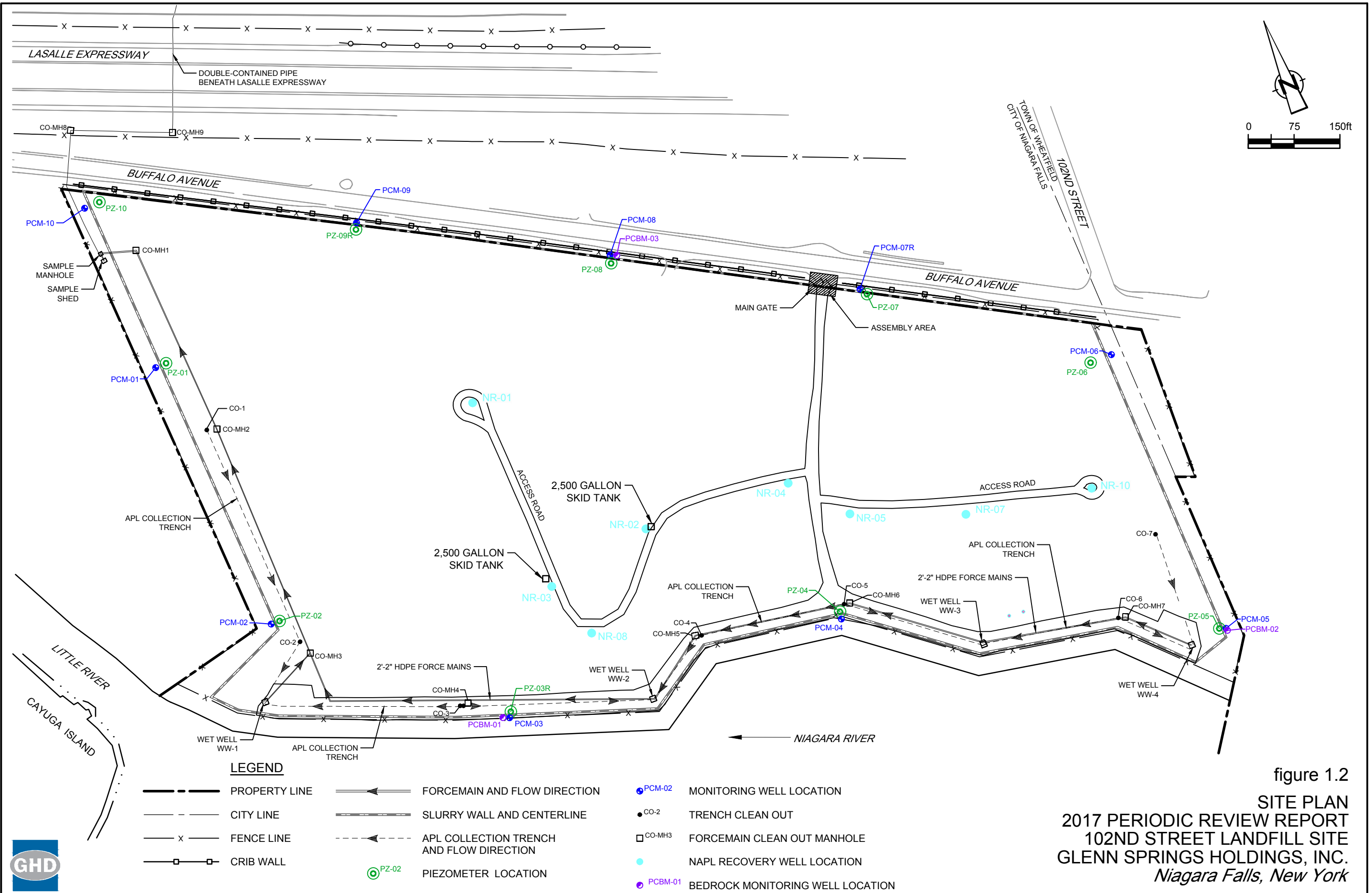
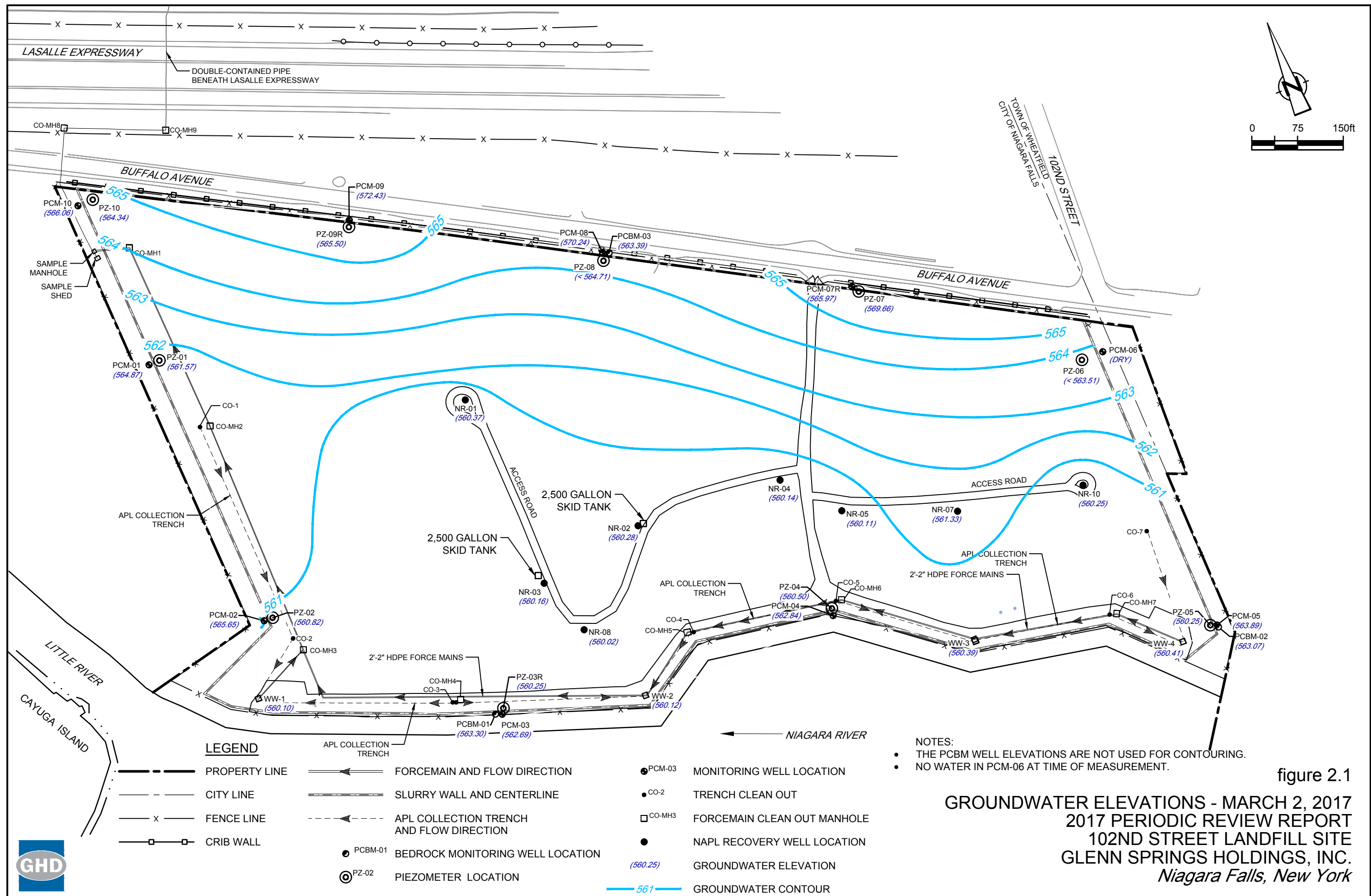
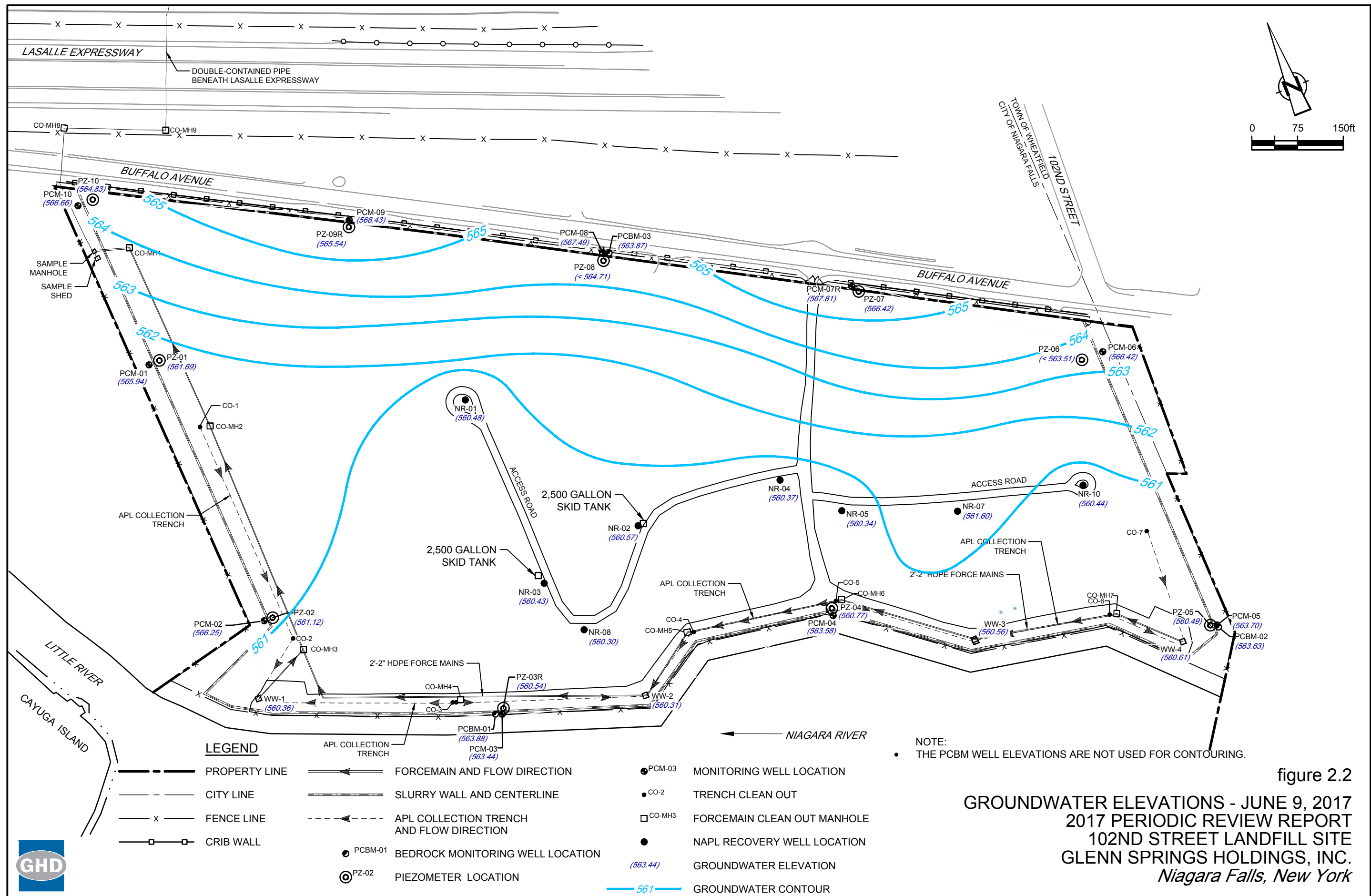
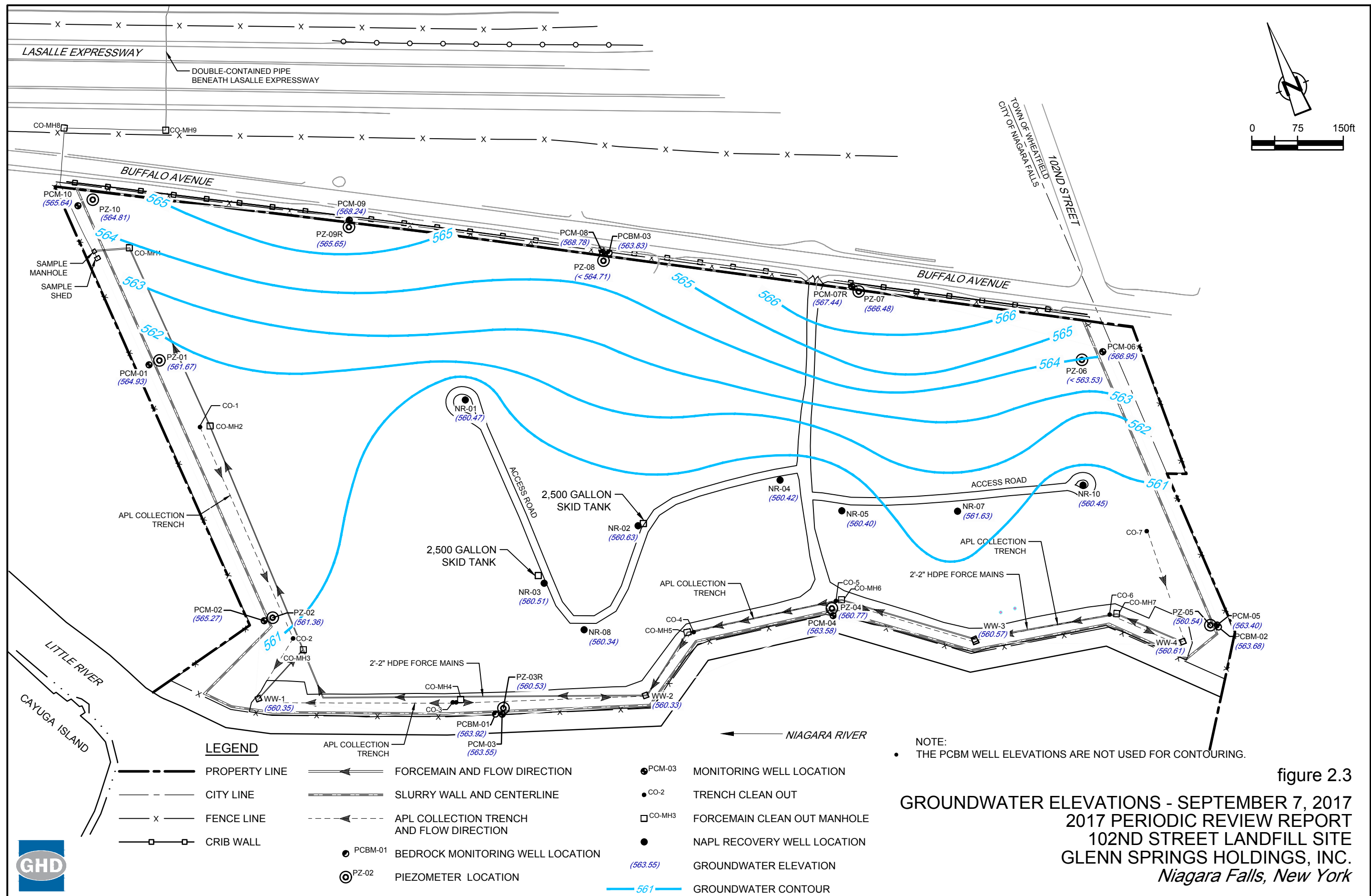


figure 1.2
 SITE PLAN
 2017 PERIODIC REVIEW REPORT
 102ND STREET LANDFILL SITE
 GLENN SPRINGS HOLDINGS, INC.
 Niagara Falls, New York







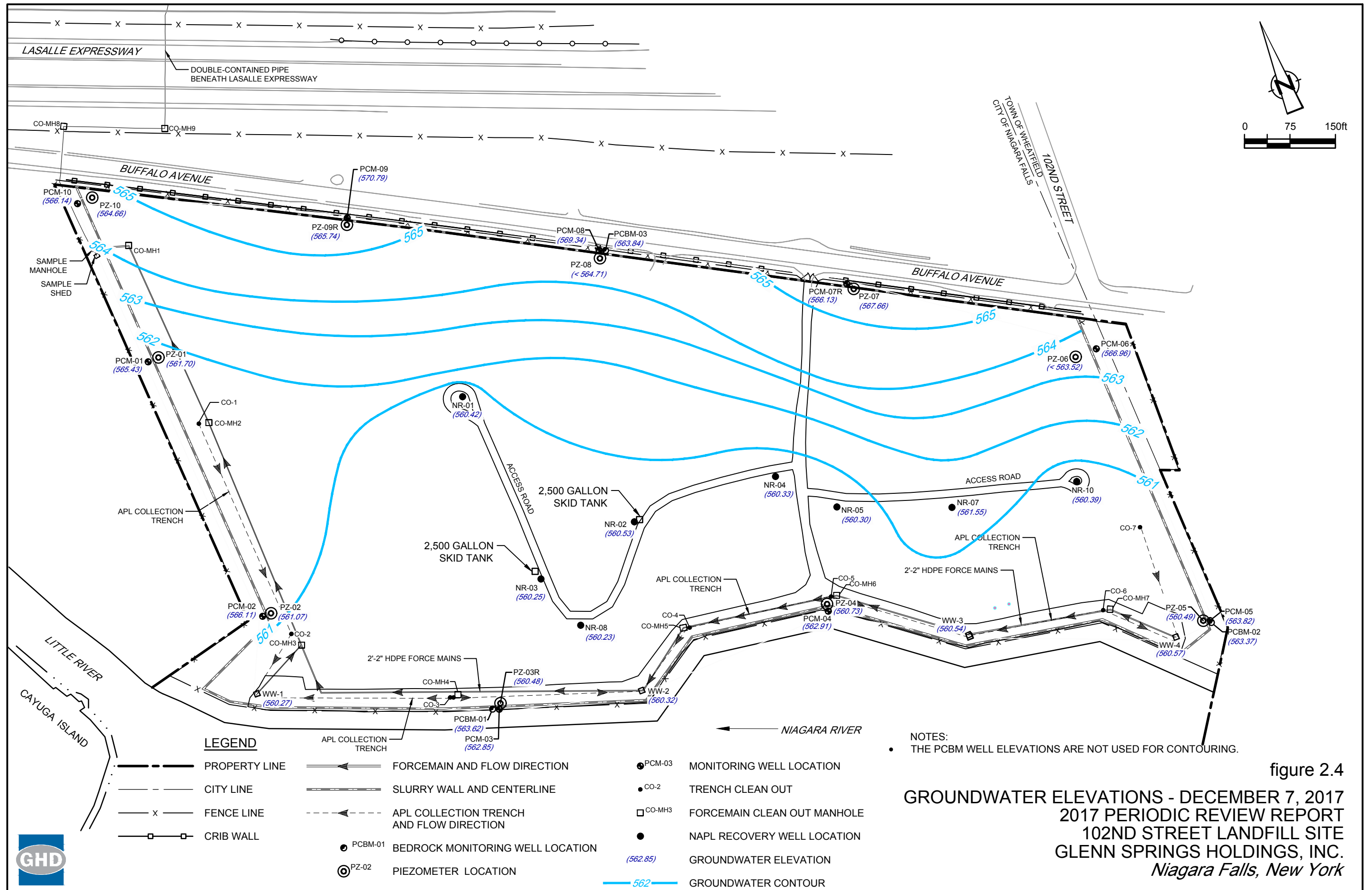


Table 2.1

**Hydraulic Gradient Well Pairs
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Pair	Outside	Inside	Location
1	PCM-01	PZ-01	West Side
2	PCM-02	PZ-02	Southwest Side
3	PCM-03	PZ-03*/PZ-03R	South Side
4	PCM-04	PZ-04	South Side
5	PCM-05	PZ-05	Southeast Side
6	PCM-06	PZ-06	Northeast Side
7	PCM-07R	PZ-07	North Side
8	PCM-08	PZ-08	North Side
9	PCM-09	PZ-09*/PZ-09R	North Side
10	PCM-10	PZ-10	Northwest Side

Notes:

- * - These wells are no longer present and were replaced with the "R" well of the same name

Table 2.2

**Quarterly Water Level Elevations
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Location	Ref Elev. (ft AMSL)	March 2, 2017	June 9, 2017	September 7, 2017	December 7, 2017
NR-01	595.96	560.37	560.48	560.47	560.42
NR-02	588.39	560.28	560.57	560.63	560.53
NR-03	593.09	560.16	560.43	560.51	560.25
NR-04	581.06	560.14	560.37	560.42	560.33
NR-05	580.33	560.11	560.34	560.40	560.30
NR-07	587.21	561.33	561.60	561.63	561.55
NR-08	590.72	560.02	560.30	560.34	560.23
NR-10	586.77	560.25	560.44	560.45	560.39
PCBM-01	576.19	563.30	563.88	563.92	563.62
PCBM-02	575.21	563.07	563.63	563.68	563.37
PCBM-03	579.34	563.39	563.87	563.83	563.84
PCM-01	577.02	564.87	565.94	564.93	565.43
PCM-02	576.22	565.65	566.25	565.27	566.11
PCM-03	576.14	562.69	563.44	563.55	562.85
PCM-04	574.90	562.84	563.58	563.58	562.91
PCM-05	575.21	563.89	563.70	563.40	563.82
PCM-06	579.26	Dry	566.42	566.95	566.96
PCM-07R	578.80	565.97	567.81	567.44	566.13
PCM-08	578.34	570.24	567.49	568.78	569.34
PCM-09	578.05	572.43	568.43	568.24	570.79
PCM-10	578.44	566.06	566.66	565.64	566.14
PZ-01	580.98	561.57	561.69	561.67	561.70
PZ-02	577.10	560.82	561.12	561.36	561.07
PZ-03R	576.15	560.25	560.54	560.53	560.48
PZ-04	575.99	560.50	560.77	560.77	560.73
PZ-05	575.92	560.25	560.49	560.54	560.49
PZ-06	583.70	Dry	Dry	Dry	Dry
PZ-07	578.48	569.66	566.42	566.48	567.66
PZ-08	579.71	Dry	Dry	Dry	Dry
PZ-09R	580.37	565.50	565.54	565.65	565.74
PZ-10	581.61	564.34	564.83	564.81	564.66
RIVERNPIER	567.02	563.14	563.91	563.93	563.26
WW-1	574.97	560.10	560.36	560.35	560.27
WW-2	574.43	560.12	560.31	560.33	560.32
WW-3	574.78	560.39	560.56	560.57	560.54
WW-4	575.20	560.41	560.61	560.61	560.57

Notes:

Dry - No water in well during time of measurement
ft AMSL - Feet above mean sea level

Table 2.3

**Well Pair Gradients
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Pairs	Well IDs	Elevation (ft AMSL)		March 2, 2017	June 9, 2017	September 7, 2017	December 7, 2017	Quarters Maintaining Inward Gradient
		TOC	Bottom					
Pair 1	PCM-01	577.02	549.05	564.87	565.94	564.93	565.43	4
	PZ-01	580.98	549.64	561.57	561.69	561.67	561.70	
				-3.30	-4.25	-3.26	-3.73	
Pair 2	PCM-02	576.22	547.90	565.65	566.25	565.27	566.11	4
	PZ-02	577.10	548.43	560.82	561.12	561.36	561.07	
				-4.83	-5.13	-3.91	-5.04	
Pair 3	PCM-03	576.14	545.15	562.69	563.44	563.55	562.85	4
	PZ-03R	576.15	542.75	560.25	560.54	560.53	560.48	
				-2.44	-2.90	-3.02	-2.37	
Pair 4	PCM-04	574.90	545.74	562.84	563.58	563.58	562.91	4
	PZ-04	575.99	545.63	560.50	560.77	560.77	560.73	
				-2.34	-2.81	-2.81	-2.18	
Pair 5	PCM-05	575.21	550.00	563.89	563.70	563.40	563.82	4
	PZ-05	575.92	550.50	560.25	560.49	560.54	560.49	
				-3.64	-3.21	-2.86	-3.33	
Pair 6	PCM-06	579.26	565.51	Dry	566.42	566.95	566.96	4*
	PZ-06	583.70	563.09	Dry	Dry	Dry	Dry	
				**	< -3.33	< -3.86	< -3.87	

Table 2.3

**Well Pair Gradients
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Pairs	Well IDs	Elevation (ft AMSL)		March 2, 2017	June 9, 2017	September 7, 2017	December 7, 2017	Quarters Maintaining Inward Gradient
		TOC	Bottom					
Pair 7	PCM-07R PZ-07	578.80	557.63	565.97	567.81	567.44	566.13	2
		578.48	563.72	569.66	566.42	566.48	567.66	
				3.69	-1.39	-0.96	1.53	
Pair 8	PCM-08 PZ-08	578.34	564.43	570.24	567.49	568.78	569.34	4*
		579.71	564.10	Dry	Dry	Dry	Dry	
				< -6.14	< -3.39	< -4.68	< -5.24	
Pair 9	PCM-09 PZ-09R	578.05	566.93	572.43	568.43	568.24	570.79	4
		580.37	563.27	565.50	565.54	565.65	565.74	
				-6.93	-2.89	-2.59	-5.05	
Pair 10	PCM-10 PZ-10	578.44	556.39	566.06	566.66	565.64	566.14	4
		581.61	561.56	564.34	564.83	564.81	564.66	
				-1.72	-1.83	-0.83	-1.48	

Notes:

- ft AMSL - Feet above mean sea level
- TOC - Top of casing
- 3.53 - Negative number indicates an inward gradient
- Dry - No water in well during time of measurement. Assumed to be less than bottom of well for gradient calculation.
- * - When the bottom elevation of the well is taken into account, all four quarters demonstrate inward gradients
- ** - A gradient could not be determined because PCM-06 and PZ-06 were dry during the March 2017 groundwater elevation event
- Bottom - Bottom of well screen elevation

Table 2.4

**Analytical Results Summary
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

			Overburden Wells									
Sample Location:			PCM-01	PCM-02	PCM-03	PCM-04	PCM-05	PCM-06	PCM-07R	PCM-08	PCM-09	PCM-10
Sample ID:			PCM-01-1017	PCM-02-1017	PCM-03-1017	PCM-04-1017	PCM-05-1017	NA	PCM-07R-1017	PCM-08-1017	PCM-09-1017	PCM-10-1017
Sample Date:			10/18/2017	10/18/2017	10/23/2017	10/23/2017	10/19/2017	10/19/2017	10/19/2017	10/17/2017	10/17/2017	10/18/2017
Parameters	NYSDEC	Units	GW Criteria									
	Class GA											
Volatile Organic Compounds												
1,2,3-Trichlorobenzene	5	µg/L	1.0 U	1.0 U	25 U	50 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	5	µg/L	1.0 U	1.0 U	25 U	50 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	3	µg/L	1.0 U	1.0 U	59	21 J	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	3	µg/L	1.0 U	1.0 U	390	200	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	5	µg/L	1.0 U	1.0 U	13 J	50 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1	µg/L	1.0 U	1.0 U	44	22 J	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	µg/L	1.0 U	1.0 U	3700	6700	110	--	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds												
1,2,4,5-Tetrachlorobenzene	5	µg/L	9.4 U	9.4 U	9.4 U	9.4 U	9.4 U	--	9.4 U	9.4 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	1	µg/L	9.4 U	9.4 U	9.4 UJ	9.4 UJ	9.4 U	--	9.4 U	9.4 U	9.4 U	9.4 U
2,4-Dichlorophenol	1	µg/L	9.4 U	9.4 U	9.4 UJ	1.6 J	9.4 U	--	9.4 U	9.4 U	9.4 U	9.4 U
2,5-Dichlorophenol	1	µg/L	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	--	4.7 U	4.7 U	4.7 U	4.7 U
2-Chlorophenol	1	µg/L	9.4 U	9.4 U	11 J	22 J	9.4 U	--	9.4 U	9.4 U	9.4 U	9.4 U
4-Chlorophenol	1	µg/L	9.4 U	9.4 U	24	43	9.4 U	--	9.4 U	9.4 U	9.4 U	9.4 U
Phenol	1	µg/L	9.4 U	9.4 U	9.4 U	9.4 U	9.4 U	--	9.4 U	9.4 U	9.4 U	9.4 U
Metals (Totals)												
Arsenic	25	µg/L	10 U	10 U	10 U	4 J	10 U	--	10 U	10 U	10 U	10 U
Mercury	0.7	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides												
alpha-BHC	0.01	µg/L	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	--	0.047 U	0.047 U	0.047 U	0.047 U
beta-BHC	0.04	µg/L	0.047 U	0.047 U	0.092	0.047 U	0.047 U	--	0.047 U	0.047 U	0.047 U	0.026 J
delta-BHC	0.04	µg/L	0.047 U	0.047 U	0.62	0.047 U	0.047 U	--	0.047 U	0.047 U	0.047 U	0.047 U
gamma-BHC (lindane)	0.05	µg/L	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	--	0.047 U	0.047 U	0.047 U	0.047 U

Table 2.4

Analytical Results Summary
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Parameters	Sample Location: Sample ID: Sample Date:		Bedrock Wells			
			PCBM-01	PCBM-02	PCBM-03	PCBM-03
			PCBM-01-1017	PCBM-02-1017	PCBM-03-1017	PCM-12-1017
			10/23/2017	10/23/2017	10/17/2017	10/17/2017 Duplicate
NYSDEC		Units				
Class GA						
GW Criteria						
Volatile Organic Compounds						
1,2,3-Trichlorobenzene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	3	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	3	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds						
1,2,4,5-Tetrachlorobenzene	5	µg/L	9.4 U	9.4 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	1	µg/L	9.4 UJ	9.4 UJ	9.4 U	9.4 U
2,4-Dichlorophenol	1	µg/L	9.4 UJ	9.4 UJ	9.4 U	9.4 U
2,5-Dichlorophenol	1	µg/L	4.7 U	4.7 U	4.7 U	4.7 U
2-Chlorophenol	1	µg/L	9.4 UJ	9.4 UJ	9.4 U	9.4 U
4-Chlorophenol	1	µg/L	9.4 U	9.4 U	9.4 U	9.4 U
Phenol	1	µg/L	9.4 U	9.4 U	9.4 U	9.4 U
Metals (Totals)						
Arsenic	25	µg/L	10 U	10 U	10 U	10 U
Mercury	0.7	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides						
alpha-BHC	0.01	µg/L	0.047 U	0.047 U	0.047 U	0.047 U
beta-BHC	0.04	µg/L	0.047 U	0.047 U	0.047 U	0.047 U
delta-BHC	0.04	µg/L	0.047 U	0.047 U	0.047 U	0.047 U
gamma-BHC (lindane)	0.05	µg/L	0.047 U	0.047 U	0.047 U	0.047 U

Notes:

J - Estimated Concentration

U - Not present at or above the associated value

UJ - Not detected; associated reporting limit is estimated

"--" - Well not sampled due to insufficient volume (Dry)

µg/L - Micrograms per liter

☐ - Concentration exceeds the NYSDEC Class GA GW Criteria

Table 4.1

**Current and Historical NAPL Recoveries
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Amount of NAPL Removed in Gallons																		
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Totals
Well																		
NR-01	55.0	0	60.0	0	0	30.0	85.0	44.0	46.0	7.0	10.5	7.0	4.5	4.8	7.0	6.0	4.5	371.3
NR-02	200.0	1,490.0	1,355.0	12,150.6	18,153.0	8,738.0	9,421.0	6,189.0	7,164.0	477.7	953.0	1,185.0	787.0	799.8	692.4	620.6	467.2	70,376.0
NR-03	40.0	0	0	0	0	10.0	42.0	22.0	12.0	0	7.0	6.0	5.3	5.9	5.8	2.8	5.0	163.6
NR-04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
NR-05	40.0	0	20.0	0	0	10.0	36.0	21.0	15.0	0	2.5	0	0	0	0	0	0	144.5
NR-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
NR-08	0	0	5.0	0	0	8.0	43.0	22.0	16.0	0	3.5	0	0	0	0	0	0	97.5
NR-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total	335.0	1,490.0	1,440.0	12,150.6	18,153.0	8,796.0	9,627.0	6,298.0	7,253.0	484.7	976.5	1,198.0	796.8	810.4	705.2	629.4	476.7	71,153

Notes:

NAPL - Non-Aqueous Phase Liquid

* 2010 - NR-2 inspections/pumping frequency reduced from daily to twice weekly, NR-3 increased to weekly

Table 4.2

**NAPL Recovery From NR-02
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Date	NAPL Removed (gallons)
04/06/2017	16.3
04/13/2017	26.4
04/21/2017	36.0
04/28/2017	22.8
05/04/2017	24.9
05/17/2017	19.1
05/26/2017	16.3
05/30/2017	24.4
06/12/2017	17.1
06/26/2017	22.6
06/30/2017	17.6
07/12/2017	22.8
07/24/2017	21.4
07/28/2017	17.8
08/04/2017	21.4
08/07/2017	23.0
08/14/2017	20.4
08/18/2017	16.3
08/21/2017	17.1
08/25/2017	26.9
08/28/2017	18.0
09/01/2017	18.6
TOTAL	467.2

Notes:

NAPL - Non-Aqueous Phase Liquid

Appendices

Appendix A

Institutional and Engineering Controls Certification Form

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation

625 Broadway, 11th Floor, Albany, NY 12233-7020

P: (518)402-9543 | F: (518)402-9547

www.dec.ny.gov

12/19/2017

Joseph Branch

Project Manager

OCC/Glenn Springs Holdings Inc.

7601 Old Channel Trail

Montague, MI 49437

Re: Reminder Notice: Site Management Periodic Review Report and IC/EC Certification Submittal

Site Name: Hooker-102nd Street Landfill

Site No.: 932022

Site Address: 102nd Street, South of River Road
Niagara Falls, NY 14304

Dear Joseph Branch:

This letter serves as a reminder that sites in active Site Management (SM) require the submittal of a periodic progress report. This report, referred to as the Periodic Review Report (PRR), must document the implementation of, and compliance with, site specific SM requirements. Section 6.3(b) of DER-10 *Technical Guidance for Site Investigation and Remediation* (available online at <http://www.dec.ny.gov/regulations/67386.html>) provides guidance regarding the information that must be included in the PRR. Further, if the site is comprised of multiple parcels, then you as the Certifying Party must arrange to submit one PRR for all parcels that comprise the site. The PRR must be received by the Department no later than **January 30, 2018**. Guidance on the content of a PRR is enclosed.

Site Management is defined in regulation (6 NYCRR 375-1.2(at)) and in Chapter 6 of DER-10. Depending on when the remedial program for your site was completed, SM may be governed by multiple documents (e.g., Operation, Maintenance, and Monitoring Plan; Soil Management Plan) or one comprehensive Site Management Plan.

A Site Management Plan (SMP) may contain one or all of the following elements, as applicable to the site: a plan to maintain institutional controls and/or engineering controls ("IC/EC Plan"); a plan for monitoring the performance and effectiveness of the selected remedy ("Monitoring Plan"); and/or a plan for the operation and maintenance of the selected remedy ("O&M Plan"). Additionally, the technical requirements for SM are stated in the decision document (e.g., Record of Decision) and, in some cases, the legal agreement directing the remediation of the site (e.g., order on consent, voluntary agreement, etc.).

When you submit the PRR (by the due date above), include the enclosed forms documenting that all SM requirements are being met. The Institutional Controls (ICs) portion of the form (Box 6) must be signed by you or your designated representative. The Engineering Controls (ECs) portion of the form (Box 7) must be signed by a Professional Engineer (PE). If you cannot certify that all SM requirements are being met, you must submit a Corrective Measures Work Plan that identifies the actions to be taken to restore compliance. The work plan must include a schedule to be approved by the Department. The Periodic Review process will not be considered complete until all necessary corrective measures are completed and all required controls are certified. Instructions for completing the certifications are enclosed.



Department of
Environmental
Conservation

All site-related documents and data, including the PRR, are to be submitted in electronic format to the Department of Environmental Conservation. The Department will not approve the PRR unless all documents and data generated in support of that report have been submitted in accordance with the electronic submissions protocol. In addition, the certification forms are required to be submitted in both paper and electronic formats.

Information on the format of the data submissions can be found at:
<http://www.dec.ny.gov/regulations/2586.html>

The signed certification forms should be sent to Brian Sadowski, Project Manager, at the following address:

New York State Department of Environmental Conservation
270 Michigan Ave
Buffalo, NY 14203-2915

Phone number: 716-851-7220. E-mail: brian.sadowski@dec.ny.gov

The contact information above is also provided so that you may notify the project manager about upcoming inspections, or for any other questions or concerns that may arise in regard to the site.

Enclosures

PRR General Guidance
Certification Form Instructions
Certification Forms

cc: w/ enclosures

Brian Sadowski, Project Manager
Chad Staniszewski, Hazardous Waste Remediation Engineer, Region 9

Enclosure 1

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional Controls/ Engineering Controls (IC/ECs)(Boxes 3, 4, and 5)

1.1.1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7):

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.
- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the 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
Site No.	932022	
Site Name Hooker-102nd Street Landfill		
Site Address: 102nd Street, South of River Road Zip Code: 14304		
City/Town: Niagara Falls		
County: Niagara		
Site Acreage: 16.5 22.1		
Reporting Period: December 31, 2016 to December 31, 2017		
		YES NO
1. Is the information above correct?		☒ ☐
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?		☐ ☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?		☐ ☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		☐ ☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?		☐ ☒

		Box 2
		YES NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill		☒ ☐
7. Are all ICs/ECs in place and functioning as designed?		☒ ☐
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.		
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

Description of Institutional Controls

ParcelOwnerInstitutional Control

161.18-1-34.2

Occidental Chemical Corporation

Landuse Restriction

Ground Water Use Restriction
 Building Use Restriction
 Monitoring Plan
 O&M Plan

1. Record of Decision; September 26, 1990.

2. Deed Restriction; January 25, 2000. Prohibits the use of site groundwater or disturbance of the landfill cover.

161.19-3-1

Occidental Chemical Corporation

Monitoring Plan
 O&M Plan
 Building Use Restriction
 Landuse Restriction

Ground Water Use Restriction

1. Record of Decision; September 26, 1990.

2. Deed Restriction; January 25, 2000. Prohibits the use of site groundwater or disturbance of the landfill cover.

161.19-3-2

Occidental Chemical Corporation

Landuse Restriction

Ground Water Use Restriction
 Building Use Restriction
 Monitoring Plan
 O&M Plan

1. Record of Decision (ROD) September 26, 1990.

2. Deed Restriction; January 25, 2000. Prohibits the use of site groundwater or disturbance of the landfill cover.

174.07-1-1

Occidental Chemical Corporation

Ground Water Use Restriction
 Building Use Restriction
 O&M Plan
 Monitoring Plan
 Landuse Restriction

1. Record of Decision; September 26, 1990.

2. Deed Restriction; January 25, 2000. Prohibits the use of site groundwater or disturbance of the landfill cover.

174.07-1-2

Occidental Chemical Corporation

Ground Water Use Restriction
Building Use Restriction

Landuse Restriction

Monitoring Plan
O&M Plan

1. Record of Decision; September 26, 1990.

2. Deed Restriction; January 25, 2000. Prohibits the use of site groundwater or disturbance of the landfill cover.

174.07-1-3

Olin Corporation

Monitoring Plan
O&M Plan
Ground Water Use Restriction
Building Use Restriction
Landuse Restriction

1. Record of Decision; September 26, 1990.

2. Deed Restriction; January 25, 2000. Prohibits the use of site groundwater or disturbance of the landfill cover.

174.07-1-4

Olin Corporation

Landuse Restriction
Monitoring Plan
O&M Plan

Ground Water Use Restriction
Building Use Restriction

1. Record of Decision; September 26, 1990.

2. Deed Restriction; January 25, 2000. Prohibits the use of site groundwater or disturbance of the landfill cover.

Box 4

Description of Engineering Controls

Parcel**Engineering Control****161.18-1-34.2**

Groundwater Treatment System
Groundwater Containment
Subsurface Barriers
Cover System
Fencing/Access Control
Leachate Collection

The engineering controls consist of a containment system for the landfill, including: perimeter fencing, NAPL recovery wells, a groundwater collection system, a perimeter sub-surface slurry wall, and a landfill cap. Groundwater collected from the containment system is pumped north for treatment at the Love Canal Leachate Treatment Facility. NAPL is pumped seasonally (April - Nov.) from NAPL recovery wells into two double walled skid mounted tanks with internal secondary containment and sent off site for proper disposal. OCC/Olin, or their consultant has performed the required OM&M activities since 1999.

161.19-3-1

Leachate Collection
Cover System
Fencing/Access Control
Groundwater Treatment System
Groundwater Containment
Subsurface Barriers

The engineering controls consist of a containment system for the landfill, including: perimeter fencing, NAPL recovery wells, a groundwater collection system, a perimeter sub-surface slurry wall, and a landfill cap. Groundwater collected from the containment system is pumped north for treatment at the Love Canal Leachate Treatment Facility. NAPL is pumped seasonally (April - Nov.) from NAPL recovery wells into two double walled skid mounted tanks with internal secondary containment and sent off site for proper disposal. OCC/Olin, or their consultant has performed the required OM&M activities since 1999.

161.19-3-2

Groundwater Treatment System
Groundwater Containment
Subsurface Barriers
Cover System
Fencing/Access Control
Leachate Collection

The engineering controls consist of a containment system for the landfill, including: perimeter fencing, NAPL recovery wells, a groundwater collection system, a perimeter sub-surface slurry wall, and a landfill cap. Groundwater collected from the containment system is pumped north for treatment at the Love Canal Leachate Treatment Facility. NAPL is pumped seasonally (April - Nov.) from NAPL recovery wells into two double walled skid mounted tanks with internal secondary containment and sent off site for proper disposal. OCC/Olin, or their consultant has performed the required OM&M activities since 1999.

174.07-1-1

Leachate Collection
Cover System
Fencing/Access Control
Groundwater Treatment System
Groundwater Containment
Subsurface Barriers

The engineering controls consist of a containment system for the landfill, including: a perimeter sub-surface slurry wall, groundwater collection system, NAPL recovery wells, landfill cap and perimeter fencing. Groundwater collected from the containment system is pumped north for treatment at the Love Canal Leachate Treatment Facility. NAPL is pumped seasonally (April-October) from NAPL recovery wells into two, 2,500 gallon, double walled skid mounted tanks with internal secondary containment. Accumulated NAPL is shipped off site for proper disposal. OCC/Olin, or their consultant has performed the required OM&M activities since 1999.

174.07-1-2

Leachate Collection
Cover System
Fencing/Access Control
Groundwater Treatment System
Groundwater Containment
Subsurface Barriers

Parcel

Engineering Control

The engineering controls consist of a containment system for the landfill, including: perimeter fencing, NAPL recovery wells, a groundwater collection system, a perimeter sub-surface slurry wall, and a landfill cap. Groundwater collected from the containment system is pumped north for treatment at the Love Canal Leachate Treatment Facility. NAPL is pumped seasonally (April - Nov.) from NAPL recovery wells into two double walled skid mounted tanks with internal secondary containment and sent off site for proper disposal. OCC/Olin, or their consultant has performed the required OM&M activities since 1999.

174.07-1-3

Groundwater Treatment System
Cover System
Groundwater Containment
Leachate Collection
Subsurface Barriers
Fencing/Access Control

The engineering controls consist of a containment system for the landfill, including: perimeter fencing, NAPL recovery wells, a groundwater collection system, a perimeter sub-surface slurry wall, and a landfill cap. Groundwater collected from the containment system is pumped north for treatment at the Love Canal Leachate Treatment Facility. NAPL is pumped seasonally (April - Nov.) from NAPL recovery wells into two double walled skid mounted tanks with internal secondary containment and sent off site for proper disposal. OCC/Olin, or their consultant has performed the required OM&M activities since 1999.

174.07-1-4

Groundwater Treatment System
Cover System
Groundwater Containment
Leachate Collection
Subsurface Barriers
Fencing/Access Control

The engineering controls consist of a containment system for the landfill, including: perimeter fencing, NAPL recovery wells, a groundwater collection system, a perimeter sub-surface slurry wall, and a landfill cap. Groundwater collected from the containment system is pumped north for treatment at the Love Canal Leachate Treatment Facility. NAPL is pumped seasonally (April - Nov.) from NAPL recovery wells into two double walled skid mounted tanks with internal secondary containment and sent off site for proper disposal. OCC/Olin, or their consultant has performed the required OM&M activities since 1999.

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. 932022

Box 6

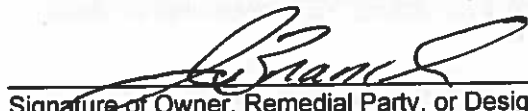
SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

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, Joseph A Branch at 7601 Old Channel Trail
print name print business address 49437

am certifying as Owner (Owner or Remedial Party)

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


Signature of Owner, Remedial Party, or Designated Representative
Rendering Certification

1/22/2018
Date

IC/EC CERTIFICATIONS

Box 7

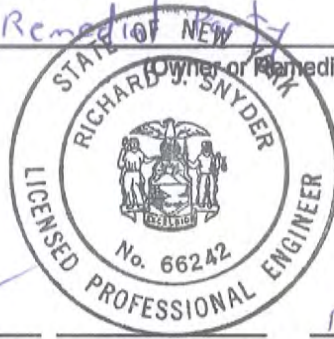
Professional Engineer Signature

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 Richard J. Snyder at 2055 Niagara Falls Blvd Niagara Falls, NY
print name print business address

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

Richard J. Snyder
Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification



Stamp
(Required for PE)

February 27, 2018
Date

Enclosure 3
Periodic Review Report (PRR) General Guidance

- I. **Executive Summary: (1/2-page or less)**
 - A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
 - B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
 1. progress made during the reporting period toward meeting the remedial objectives for the site
 2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
 - C. Compliance
 1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
 2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
 - D. Recommendations
 1. recommend whether any changes to the SMP are needed
 2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
 3. recommend whether the requirements for discontinuing site management have been met.
- II. **Site Overview (one page or less)**
 - A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
 - B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.
- III. **Evaluate Remedy Performance, Effectiveness, and Protectiveness**

Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations should be presented simply and concisely.
- IV. **IC/EC Plan Compliance Report (if applicable)**
 - A. IC/EC Requirements and Compliance
 1. Describe each control, its objective, and how performance of the control is evaluated.
 2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
 3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
 4. Conclusions and recommendations for changes.
 - B. IC/EC Certification
 1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).
- V. **Monitoring Plan Compliance Report (if applicable)**
 - A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
 - B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
 - C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
 - D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
 - E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.
- VI. **Operation & Maintenance (O&M) Plan Compliance Report (if applicable)**
 - A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
 - B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.

- C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated the ability of each component of the remedy subject to O&M requirements to perform as designed/expected.
- D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.
- E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

- A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;
 - 1. whether all requirements of each plan were met during the reporting period
 - 2. any requirements not met
 - 3. proposed plans and a schedule for coming into full compliance.
- B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.
- C. Future PRR Submittals
 - 1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
 - 2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

Additional guidance regarding the preparation and submittal of an acceptable PRR can be obtained from the Departments Project Manager for the site.

Appendix B

Annual Report Forms

Annual Operation And Maintenance Report

102nd Street Landfill Site
Niagara Falls, New York

YEAR: 2017

MONITORING - Water Level Elevations (ft. AMSL)

Month	Day	Inspector	PCM-01	PZ-01	PCM-02	PZ-02	PCM-03	PZ-03R
1st Qtr.	3/2/2017	S. Gardner	564.87	561.57	565.65	560.82	562.69	560.25
2nd Qtr.	6/9/2017	S. Gardner	565.94	561.69	566.25	561.12	563.44	560.54
3rd Qtr.	9/7/2017	D. Tyran	564.93	561.67	565.27	561.36	563.55	560.53
4th Qtr.	12/7/2017	S. Gardner	565.43	561.70	566.11	561.07	562.85	560.48

Month	Day	Inspector	PCM-04	PZ-04	PCM-05	PZ-05	PCM-06	PZ-06
1st Qtr.	3/2/2017	S. Gardner	562.84	560.50	563.89	560.25	Dry	Dry
2nd Qtr.	6/9/2017	S. Gardner	563.58	560.77	563.70	560.49	566.42	Dry
3rd Qtr.	9/7/2017	D. Tyran	563.58	560.77	563.40	560.54	566.95	Dry
4th Qtr.	12/7/2017	S. Gardner	562.91	560.73	563.82	560.49	566.96	Dry

Month	Day	Inspector	PCM-07R	PZ-07	PCM-08	PZ-08	PCM-09	PZ-09R
1st Qtr.	3/2/2017	S. Gardner	565.97	569.66	570.24	Dry	572.43	565.50
2nd Qtr.	6/9/2017	S. Gardner	567.81	566.42	567.49	Dry	568.43	565.54
3rd Qtr.	9/7/2017	D. Tyran	567.44	566.48	568.78	Dry	568.24	565.65
4th Qtr.	12/7/2017	S. Gardner	566.13	567.66	569.34	Dry	570.79	565.74

Month	Day	Inspector	PCM-10	PZ-10
1st Qtr.	3/2/2017	S. Gardner	566.06	564.34
2nd Qtr.	6/9/2017	S. Gardner	566.66	564.83
3rd Qtr.	9/7/2017	D. Tyran	565.64	564.81
4th Qtr.	12/7/2017	S. Gardner	566.14	564.66

FORM 1

Annual Operation And Maintenance Report

102Nd Street Landfill Site
Niagara Falls, New York

YEAR: 2017

GROUNDWATER - Quality Monitoring

Quarter	Date Sample Taken	Inspector	Comments
1st			
2nd			
3rd			
4th	10/17, 10/18, 10/19, 10/23	D. Tyran, S. Gardner	Annual Event

Results of analyses are attached.

NAPL PRESENCE - Monitoring

	Date	Inspector	NR-01		NR-02		NR-03	
			Thickness of NAPL (ft)	Gallons Removed	Thickness of NAPL (ft)	Gallons Removed	Thickness of NAPL (ft)	Gallons Removed
1st Quarter	3/2/2017	S. Gardner	0.98	0.00	1.90	0.00	0.82	0.00
2nd Quarter	6/9/2017	S. Gardner	1.06	4.50	1.83	243.50	0.64	5.00
3rd Quarter	9/7/2017	D. Tyran	0.61	0.00	1.88	223.70	0.70	0.00
4th Quarter	12/7/2017	S. Gardner	0.78	0.00	1.85	0.00	0.57	0.00

	Date	Inspector	NR-04		NR-05		NR-07	
			Thickness of NAPL (ft)	Gallons Removed	Thickness of NAPL (ft)	Gallons Removed	Thickness of NAPL (ft)	Gallons Removed
1st Quarter	3/2/2017	S. Gardner	NO NAPL	0.00	0.63	0.00	NO NAPL	0.00
2nd Quarter	6/9/2017	S. Gardner	NO NAPL	0.00	NO NAPL	0.00	NO NAPL	0.00
3rd Quarter	9/7/2017	D. Tyran	NO NAPL	0.00	0.51	0.00	NO NAPL	0.00
4th Quarter	12/7/2017	S. Gardner	NO NAPL	0.00	0.41	0.00	NO NAPL	0.00

	Date	Inspector	NR-08		NR-10	
			Thickness of NAPL (ft)	Gallons Removed	Thickness of NAPL (ft)	Gallons Removed
1st Quarter	3/2/2017	S. Gardner	0.65	0.00	NO NAPL	0.00
2nd Quarter	6/9/2017	S. Gardner	0.66	0.00	NO NAPL	0.00
3rd Quarter	9/7/2017	D. Tyran	0.64	0.00	NO NAPL	0.00
4th Quarter	12/7/2017	S. Gardner	0.73	0.00	NO NAPL	0.00

Notes:
ft. - Feet

FORM 1

Annual Operation And Maintenance Report

102nd Street Landfill Site
Niagara Falls, New York

YEAR: 2017

OPERATION

APL COLLECTION AND DISCHARGE SYSTEM

APL Flow for Previous Year (gallons)	APL Flow for Current Year (gallons)
184,970	168,368

NAPL REMOVAL SYSTEM

	NAPL Removed for Previous Year (gallons)	NAPL Removed for Current Year (gallons)
NR-01	6.0	4.5
NR-02	620.6	467.2
NR-03	2.75	5.00
NR-04	0	0
NR-05	0	0
NR-07	0	0
NR-08	0	0
NR-10	0	0
Total	629.35	476.70

Where was NAPL treated/disposed?

Facility	<u>4 Drums shipped to Clean Harbors Aragonite, Grantsville, Utah</u>	Date	<u>6/21/2017</u>
Facility	<u>6 Drums shipped to Clean Harbors Aragonite, Grantsville, Utah</u>	Date	<u>9/11/2017</u>
Facility	<u></u>	Date	<u></u>
Facility	<u></u>	Date	<u></u>
Facility	<u></u>	Date	<u></u>
Facility	<u></u>	Date	<u></u>

FORM 1

Annual Operation And Maintenance Report

102nd Street Landfill Site
Niagara Falls, New York

YEAR: 2017

INSPECTION AND MAINTENANCE

Scheduled inspections performed:

	<i>Date</i>	<i>Inspectors</i>
DEC Inspection	<u>7/19/2017</u>	<u>Brian Sadowski (NYSDEC); Darrell Crockett (GHD)</u>
Well Inspection	<u>10/16/2017</u>	<u>Dave Tyran (GHD); Shawn Gardner (GHD)</u>

Was maintenance required?

Yes

No

☒

☐

What maintenance was required?

Date Performed

Cleaned WW4 flow indicator	10/27/2017
Drummed NAPL from tank	6/21/2017
Drummed NAPL from tank	9/11/2017

Describe any maintenance activity that required an activity specific work plan and health and safety plan.

None

Annual Operation And Maintenance Report

102nd Street Landfill Site
Niagara Falls, New York

YEAR: 2017

Send completed copies of this form to the following for review:

Mr. Joseph Branch
Glenn Springs Holdings, Inc.
7601 Old Channel Trail
Montague, MI 49437

and

Mr. Dave M. Share
Olin Corporation
3855 North Ocoee Street, Suite 200
Cleveland, TN 37312

After review is complete, send 1 copy to the following:

Ms. Gloria M. Sosa
Site Investigation and Compliance Branch
U.S. Environmental Protection Agency - Region II
290 Broadway, 20th Floor
New York, NY 10007-1866

and

Mr. Brian Sadowski (electronic/email copy only)
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203-2999

FORM 1

Appendix C

Graphs of Groundwater Level Elevations: 2002 through 2017

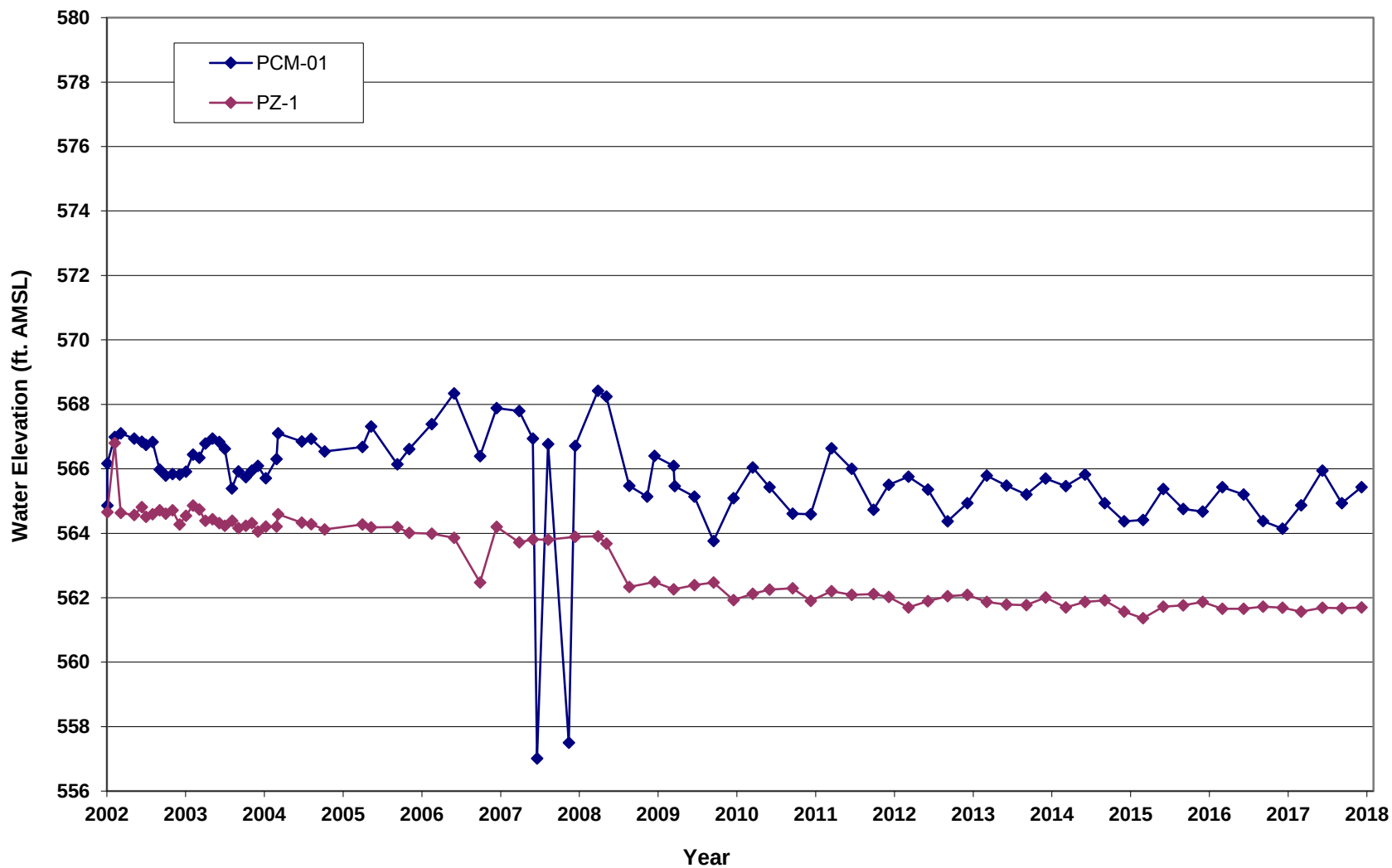


figure C.1
 GROUNDWATER LEVELS WELL PAIR 1
 102ND STREET LANDFILL SITE
 GLENN SPRINGS HOLDINGS, INC
Niagara Falls, New York



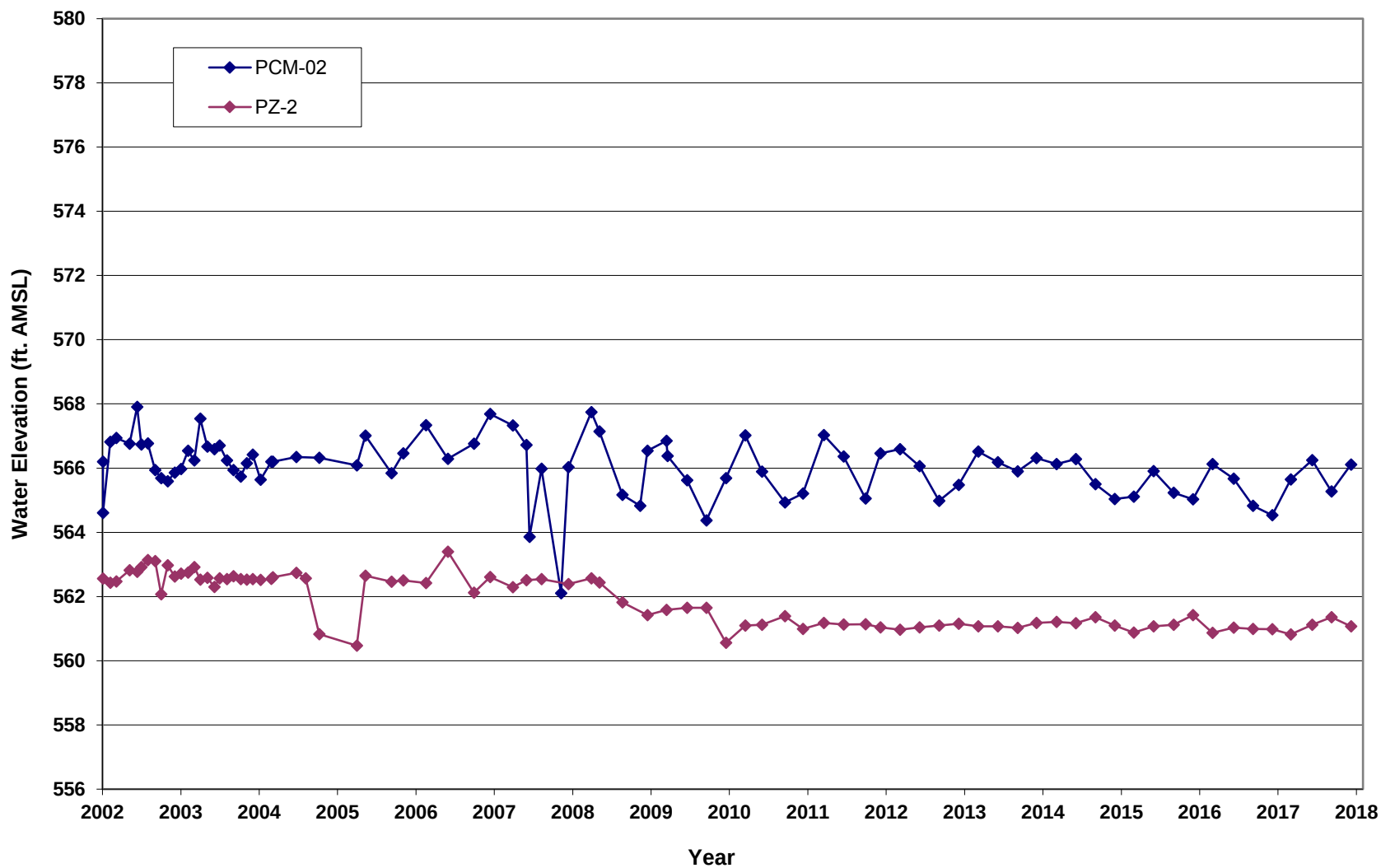


figure C.2
GROUNDWATER LEVELS WELL PAIR 2
102ND STREET LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC
Niagara Falls, New York



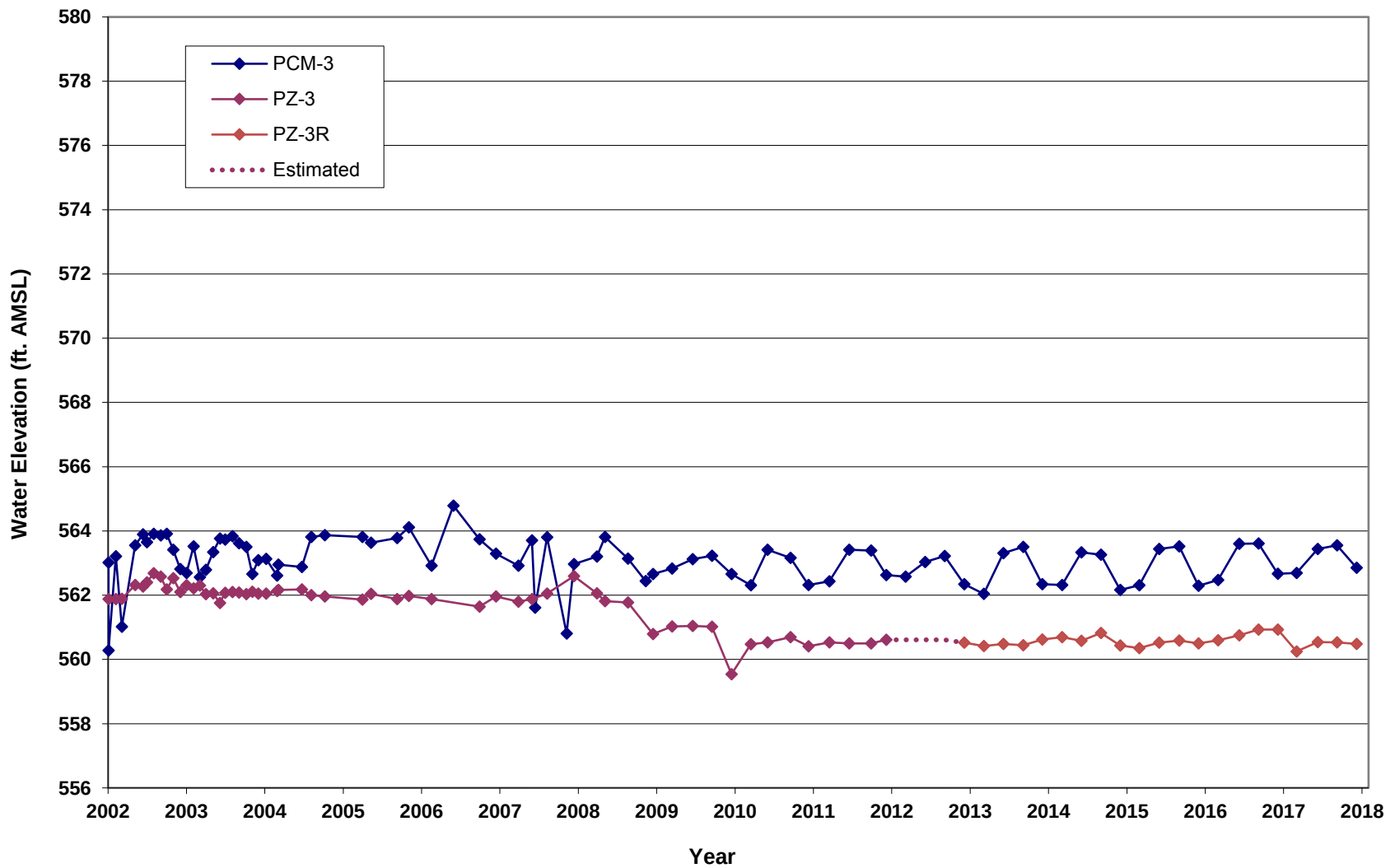


figure C.3
 GROUNDWATER LEVELS WELL PAIR 3
 102ND STREET LANDFILL SITE
 GLENN SPRINGS HOLDINGS, INC
 Niagara Falls, New York



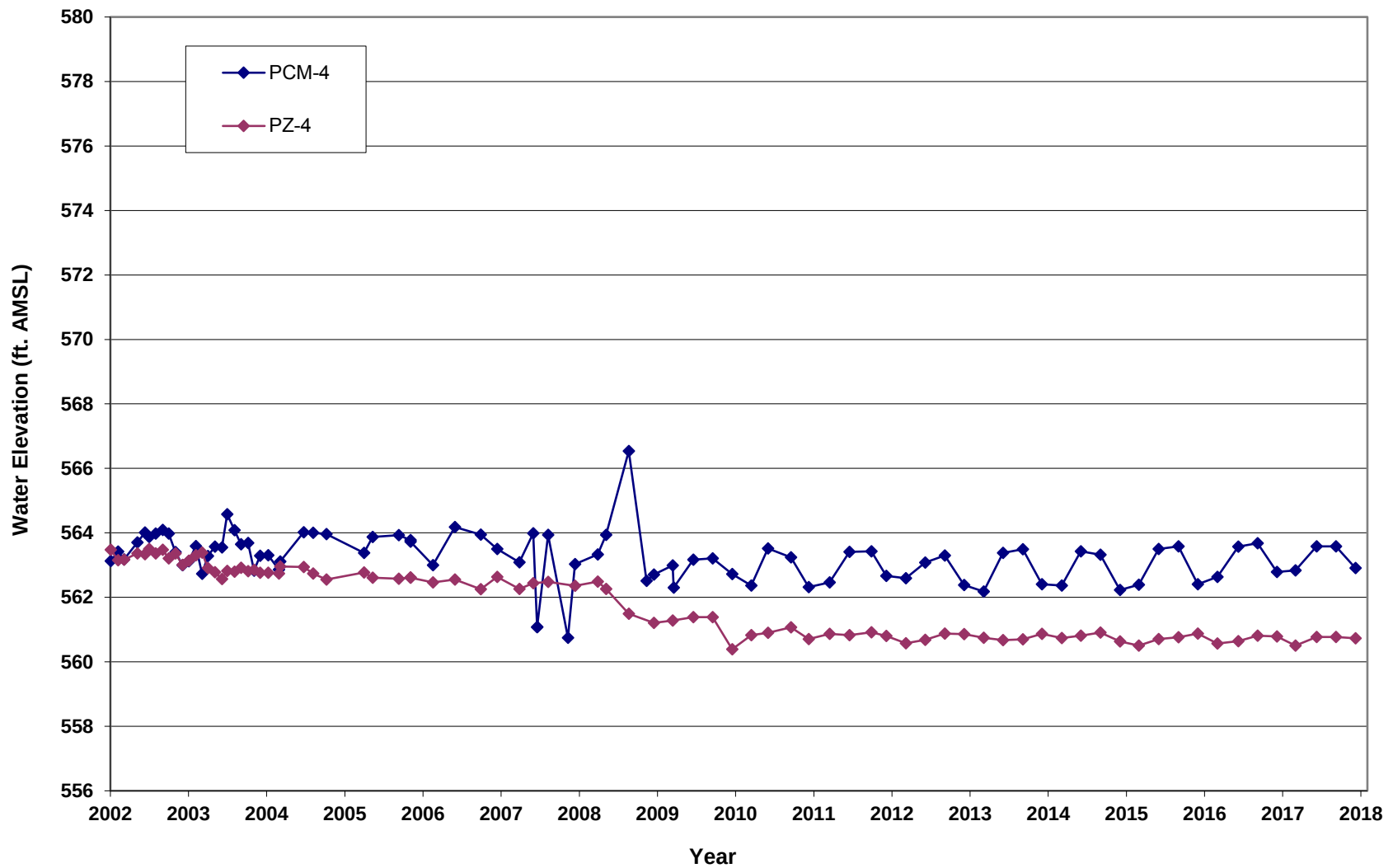


figure C.4
GROUNDWATER LEVELS WELL PAIR 4
102ND STREET LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC
Niagara Falls, New York



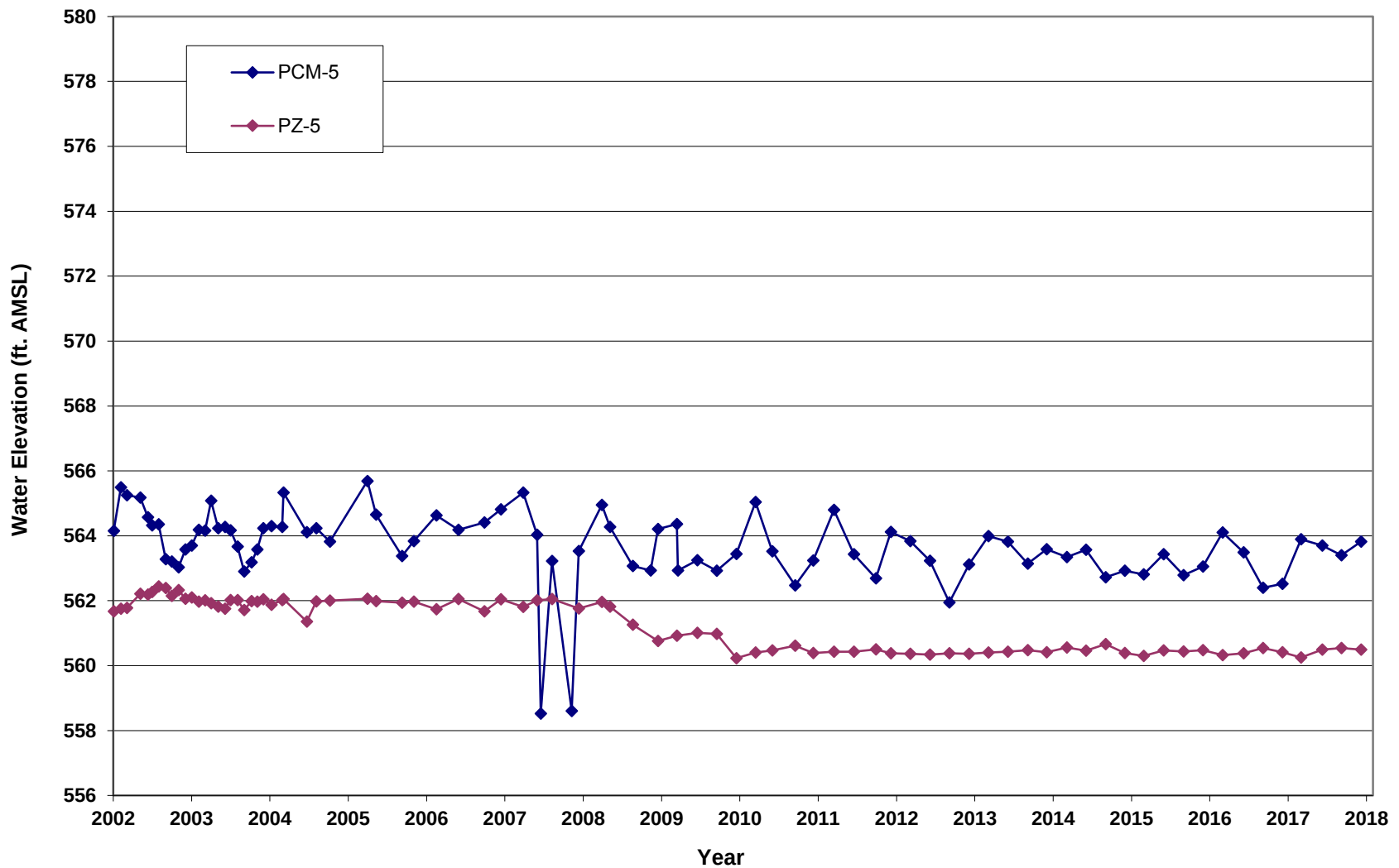


figure C.5
GROUNDWATER LEVELS WELL PAIR 5
102ND STREET LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC
Niagara Falls, New York



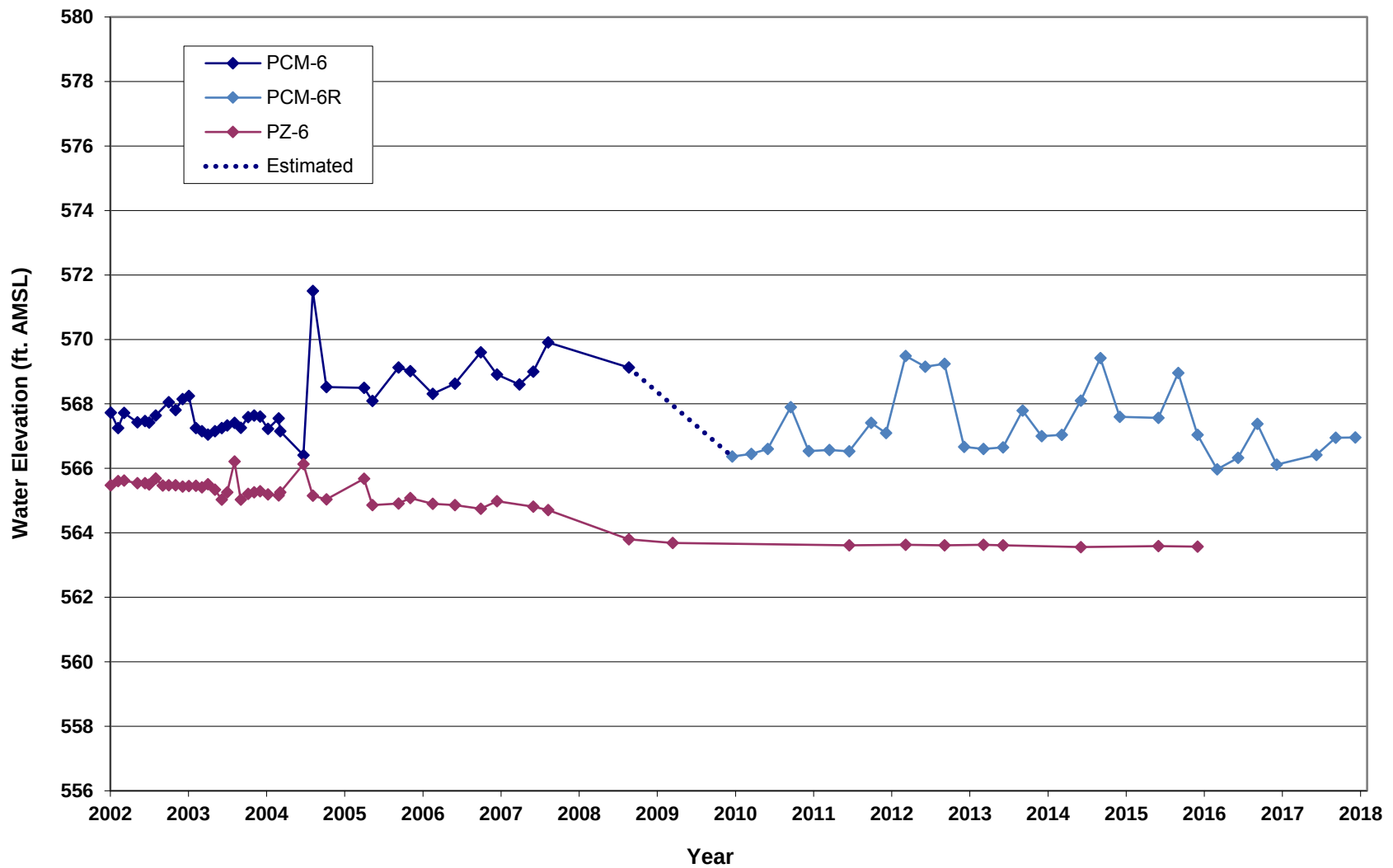


figure C.6
 GROUNDWATER LEVELS WELL PAIR 6
 102ND STREET LANDFILL SITE
 GLENN SPRINGS HOLDINGS, INC
Niagara Falls, New York



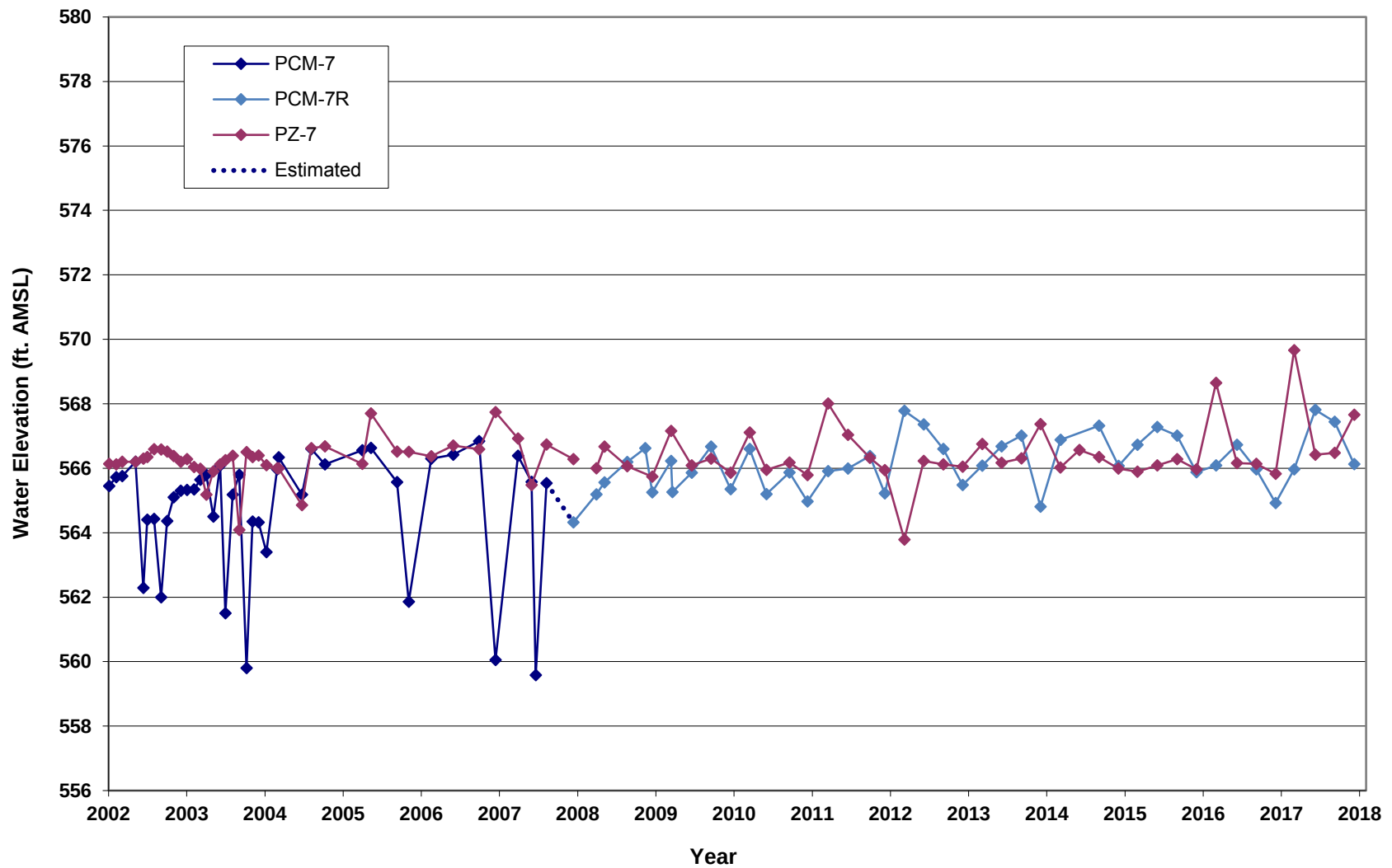
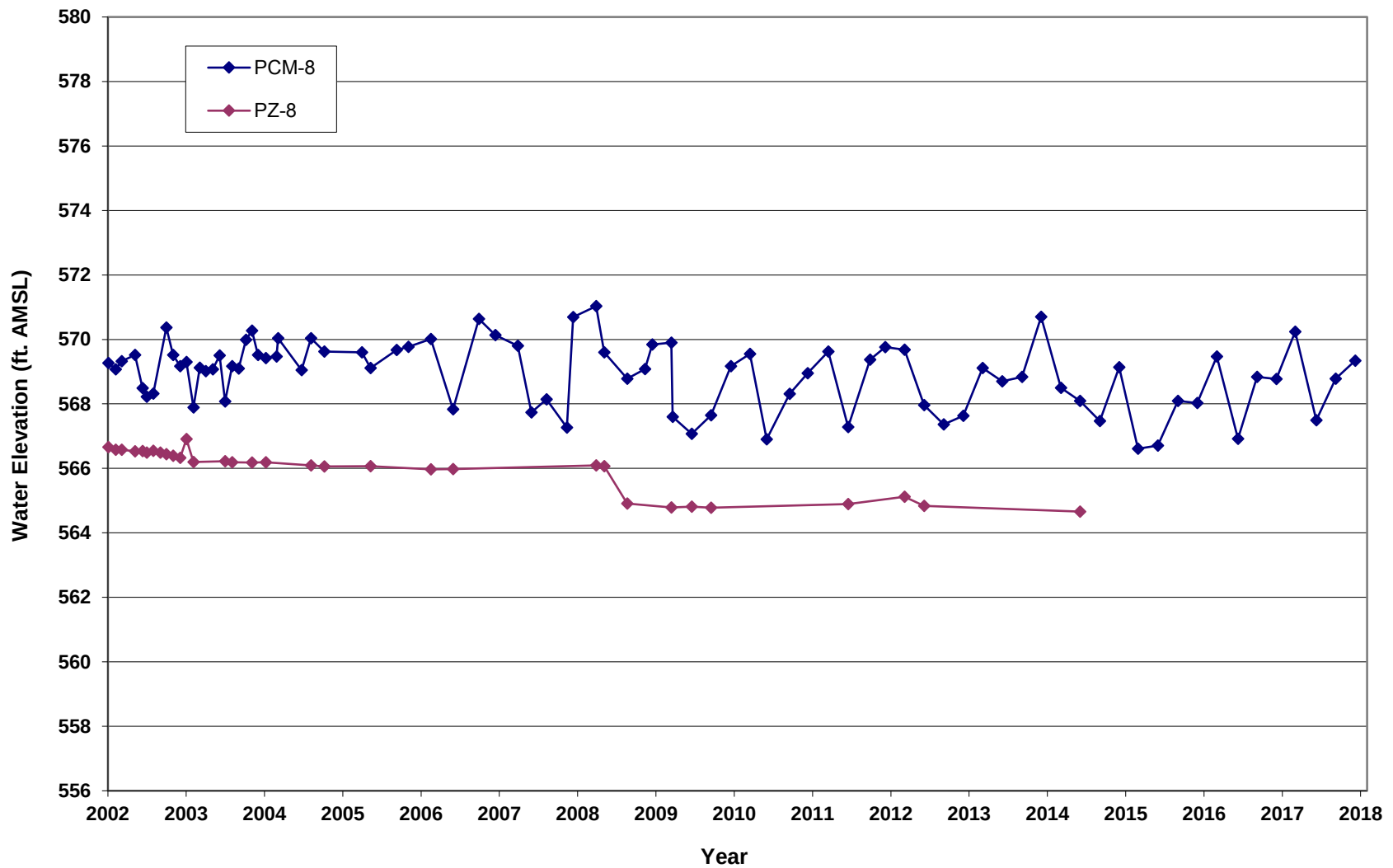


figure C.7
GROUNDWATER LEVELS WELL PAIR 7
102ND STREET LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC
Niagara Falls, New York





Note: PZ-8 dry during all four quarters of the 2016 quarterly monitoring.

figure C.8
 GROUNDWATER LEVELS WELL PAIR 8
 102ND STREET LANDFILL SITE
 GLENN SPRINGS HOLDINGS, INC
Niagara Falls, New York



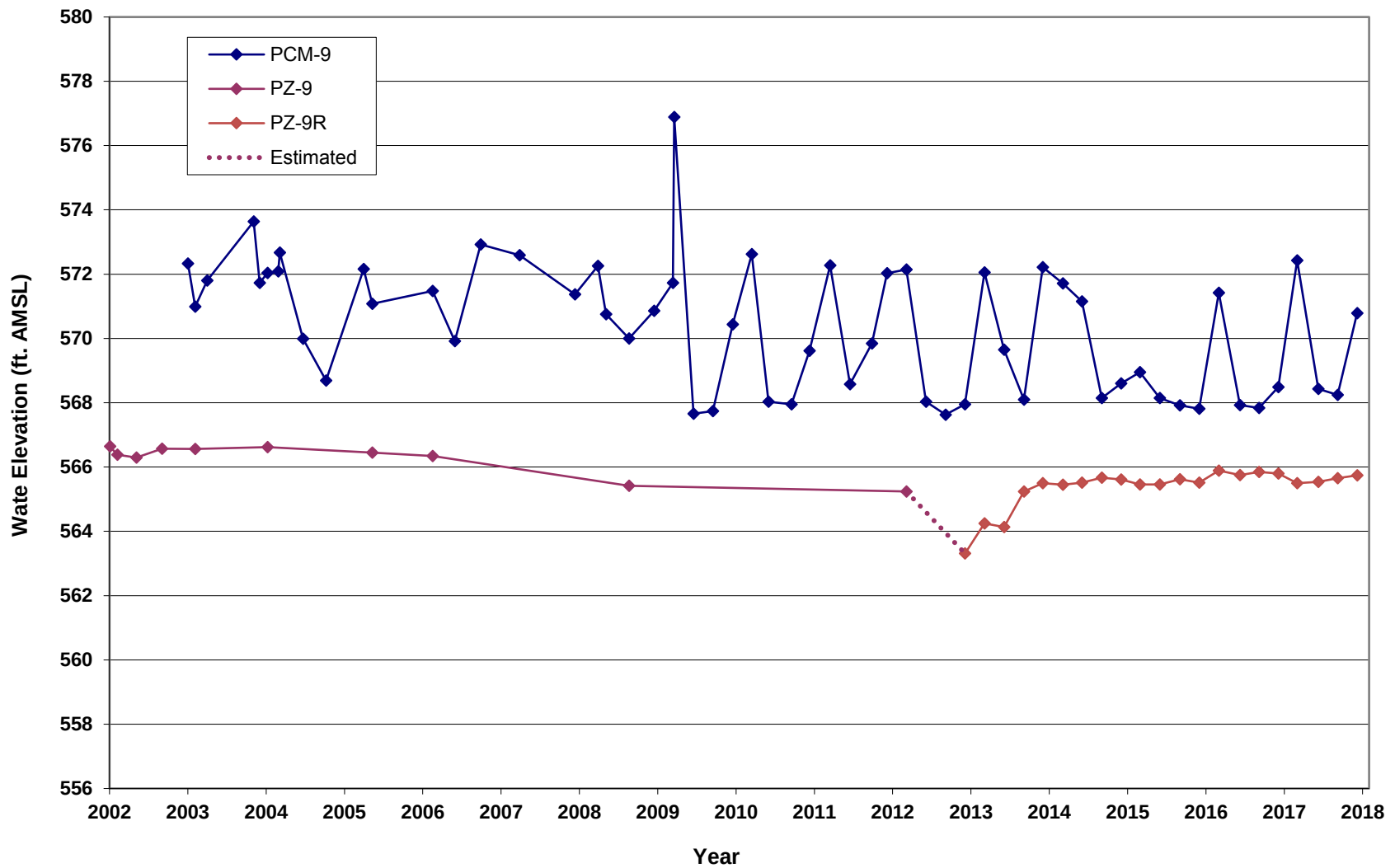


figure C.9
 GROUNDWATER LEVELS WELL PAIR 9
 102ND STREET LANDFILL SITE
 GLENN SPRINGS HOLDINGS, INC
Niagara Falls, New York



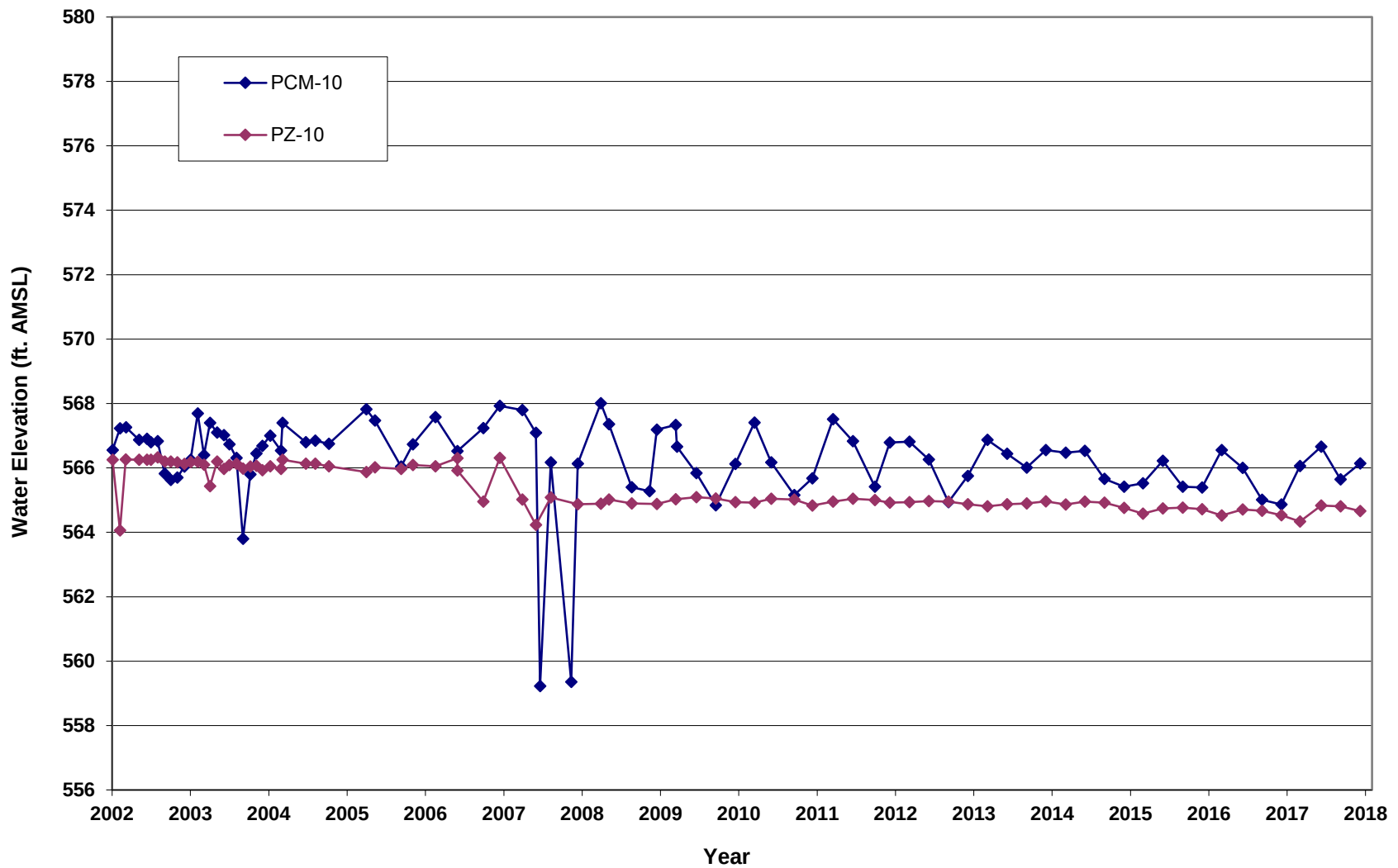


figure C.10
GROUNDWATER LEVELS WELL PAIR 10
102ND STREET LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC
Niagara Falls, New York



Appendix D

Historic Groundwater Monitoring Results

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location: Sample ID: Sample Date:		PCBM-01 PCBM-01-502 5/31/2002	PCBM-01 PCBM-01-802 8/29/2002	PCBM-01 PCM-12-802 8/29/2002 (Duplicate)	PCBM-01 PCBM-01-1202 12/10/2002	PCBM-01 PCBM-01-303 3/31/2003	PCBM-01 PCBM-01-603 6/23/2003	PCBM-01 PCBM-01-903 9/29/2003	PCBM-01 PCBM-01-1203 12/23/2003	PCBM-01 PCBM-01-304 3/11/2004
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chlorotoluene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Benzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	5.05 U	4.72 U	4.67 U	4.72 U	4.72 U	4.67 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.1 U	9.43 U	9.35 U	9.43 U	9.43 U	9.35 U
2,4-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.1 U	9.43 U	9.35 U	9.43 U	9.43 U	9.35 U
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.1 U	9.43 U	9.35 U	9.43 U	9.43 U	9.35 U
2-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.1 U	9.43 U	9.35 U	9.43 U	9.43 U	9.35 U
4-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.1 U	9.43 U	9.35 U	9.43 U	9.43 U	9.35 U
Phenol	µg/L	10.0 U	10.0 U	10.0 U	10.1 U	9.43 U	9.35 U	9.43 U	9.43 U	9.35 U
Metals										
Arsenic	µg/L	50.0 U	8.35 J	10.0 U	10.0 U	27.7	10.0 U	10.0 U	10.0 U	10.0 U
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides										
alpha-BHC	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0467 U	0.0467 U	0.0467 U	0.0377 U	0.0374 U
beta-BHC	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0467 U	0.0467 U	0.0467 U	0.0472 U	0.0467 U
delta-BHC	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0467 U	0.0467 U	0.0467 U	0.0566 U	0.0561 U
gamma-BHC (lindane)	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0467 U	0.0467 U	0.0467 U	0.0377 U	0.0374 U

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location: Sample ID: Sample Date:		PCBM-01 PCBM-01-1204 12/13/2004	PCBM-01 PCBM-01-605 6/21/2005	PCBM-01 PCM-12-605 6/21/2005 (Duplicate)	PCBM-01 PCBM-01-1005 10/18/2005	PCBM-01 PCBM-01-606 6/26/2006	PCBM-01 PCM-12-606 6/26/2006 (Duplicate)	PCBM-01 PCBM-01-1206 12/14/2006	PCBM-01 PCBM-01-607 6/14/2007	PCBM-01 PCBM-01-1107 11/8/2007
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
1,2,4-Trichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
1,2-Dichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
1,4-Dichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
2-Chlorotoluene	µg/L	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.22 J	0.50 U	2.5 U
Benzene	µg/L	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
Chlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.98 J
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	4.67 U	10 U	10 U	10.0 U	10 U	10 U	10 U	10 U	5.0 U
2,4,5-Trichlorophenol	µg/L	9.35 U	10 U	10 U	10.0 U	10 U	10 U	10 U	10 U	5.0 U
2,4-Dichlorophenol	µg/L	9.35 U	10 U	10 U	10.0 U	10 U	10 U	10 U	10 U	5.0 U
2,5-Dichlorophenol	µg/L	9.35 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U
2-Chlorophenol	µg/L	9.35 U	10 U	10 U	10.0 U	10 U	10 U	10 U	10 U	5.0 U
4-Chlorophenol	µg/L	9.35 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U
Phenol	µg/L	9.35 U	10 U	10 U	10.0 U	10 U	10 U	10 U	10 UJ	5.0 U
Metals										
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	10 U	10 U	10 U	10 U	10.0 U
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	0.20 U	0.20 U
Pesticides										
alpha-BHC	µg/L	0.0377 U	0.013 U	0.013 U	0.063 UJ	0.013 U	0.013 U	0.039J	0.042 J	0.054
beta-BHC	µg/L	0.0472 U	0.025 U	0.025 U	0.13 J	0.025 U	0.025 U	0.05 U	0.013 J	0.013 J
delta-BHC	µg/L	0.0566 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.014 J	0.02 J	0.017 J
gamma-BHC (lindane)	µg/L	0.0377 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.022 J	0.029 J	0.033 J

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location: Sample ID: Sample Date:		PCBM-01 PCBM-01-0508 5/21/2008	PCBM-01 PCBM-01-1108 11/11/2008	PCBM-01 PCBM-01-309 3/18/2009	PCBM-01 PCM-13-309 3/18/2009 (Duplicate)	PCBM-01 PCBM-011009 10/21/2009	PCBM-01 PCBM-01-310 4/6/2010	PCBM-01 PCM-12 4/6/2010 (Duplicate)	PCBM-01 PCBM-01-1010 10/9/2010	PCBM-01 PCM-12-1010 10/9/2010 (Duplicate)
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	2.5 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	2.5 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	2.5 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	2.5 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	2.5 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	2.5 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	2.5 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 U	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.6 U	9.4 U
2,4,5-Trichlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.6 U	9.4 U
2,4-Dichlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.6 U	9.4 U
2,5-Dichlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.6 U	9.4 U
2-Chlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.6 U	9.4 U
4-Chlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.6 U	9.4 U
Phenol	µg/L	5.0 U	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.6 U	9.4 U
Metals										
Arsenic	µg/L	10.0 U	10.0 U	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10.0 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.26 U	0.20 U	0.20 U	0.20 U
Pesticides										
alpha-BHC	µg/L	0.25 U	0.01 J	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.048 U	0.048 U
beta-BHC	µg/L	0.56	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.048 U	0.048 U
delta-BHC	µg/L	0.81	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.048 U	0.048 U
gamma-BHC (lindane)	µg/L	0.25 U	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.048 U	0.048 U

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCBM-01	PCBM-01	PCBM-01	PCBM-01	PCBM-01	PCBM-01	PCBM-01	PCBM-01
Sample ID:		PCBM-01-0411	PCBM-01-1011	PCBM-01-1012	PCBM-01-1013	PCBM-01-1114	PCBM-01-1015	PCBM-01-1016	PCBM-01-1017
Sample Date:		4/13/2011	10/19/2011	10/2/2012	10/3/2013	10/27/2014	10/15/2015	10/19/2016	10/23/2017
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	9.4 U	9.5 U	9.5 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.4 U	9.5 U	9.5 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 UJ
2,4-Dichlorophenol	µg/L	9.4 U	9.5 U	9.5 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 UJ
2,5-Dichlorophenol	µg/L	9.4 U	9.5 UJ	9.5 U	9.6 U	9.4 U	9.5 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	9.4 U	9.5 U	9.5 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 UJ
4-Chlorophenol	µg/L	9.4 U	9.5 U	9.5 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U
Phenol	µg/L	9.4 U	9.5 U	9.5 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U
Metals									
Arsenic	µg/L	10.0 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.048 U	0.048 U	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
beta-BHC	µg/L	0.048 U	0.048 U	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
delta-BHC	µg/L	0.048 U	0.055	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.048 U	0.048 U	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U

Table D.1

**Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Sample Location: Sample ID: Sample Date:		PCBM-02 PCBM-02-602 6/4/2002	PCBM-02 PCBM-02-802 8/29/2002	PCBM-02 PCBM-02-1202 12/12/2002	PCBM-02 PCBM-02-303 3/31/2003	PCBM-02 PCBM-02-603 6/26/2003	PCBM-02 PCBM-02-903 9/30/2003	PCBM-02 PCBM-02-1203 12/29/2003	PCBM-02 PCBM-02-304 3/15/2004	PCBM-02 PCBM-02-1204 12/14/2004
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chlorotoluene	µg/L	5.00 U	5.00 U	1.78 U	1.00 U	1.00 U	1.00 U	0.513 J	0.285 J	1.00 U
Benzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	0.855 J	1.00 U	1.00 U
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	4.72 U	4.67 U	4.72 U	4.76 U	4.76 U	4.81 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.52 U	9.52 U	9.62 U
2,4-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.52 U	9.52 U	9.62 U
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.52 U	9.52 U	9.62 U
2-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.52 U	9.52 U	9.62 U
4-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.52 U	9.52 U	9.62 U
Phenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.52 U	9.52 U	9.62 U
Metals										
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	30.7	4.39 J	10.0 U	10.0 U	9.84 J	10.0 U
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides										
alpha-BHC	µg/L	0.0510 U	0.0500 U	0.0500 U	0.0467 U	0.0467 U	0.0467 U	0.0374 U	0.0377 U	0.0400 U
beta-BHC	µg/L	0.0510 U	0.0500 U	0.0500 U	0.0467 U	0.0467 U	0.0467 U	0.0467 U	0.0472 U	0.0500 U
delta-BHC	µg/L	0.0510 U	0.0500 U	0.0500 U	0.0467 U	0.0467 U	0.0467 U	0.0561 U	0.0566 U	0.0600 U
gamma-BHC (lindane)	µg/L	0.0510 U	0.0500 U	0.0500 U	0.0467 U	0.0467 U	0.0467 U	0.0374 U	0.0377 U	0.0400 U

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location: Sample ID: Sample Date:		PCBM-02 PCBM-02-605 6/22/2005	PCBM-02 PCBM-02-1005 10/19/2005	PCBM-02 PCBM-02-706 7/5/2006	PCBM-02 PCBM-02-1206 12/13/2006	PCBM-02 PCM-12-1206 12/13/2006 (Duplicate)	PCBM-02 PCBM-02-607 6/18/2007	PCBM-02 PCBM-02-1107 11/9/2007	PCBM-02 PCM-12-1107 11/9/2007 (Duplicate)	PCBM-02 PCBM-02-0508 5/22/2008
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	6.3 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	6.3 U	0.18 J	0.50 U	0.50 U
1,2-Dichlorobenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	6.3 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	6.3 U	0.50 U	0.50 U	0.50 U
2-Chlorotoluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	6.3 U	1.2 U	0.50 U	0.50 U
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	6.3 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	6.3 U	0.50 U	0.50 U	0.50 U
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	10 U	10.0 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U	5.0 U
2,4,5-Trichlorophenol	µg/L	10 U	10.0 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U	5.0 U
2,4-Dichlorophenol	µg/L	10 U	10.0 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U	5.0 U
2,5-Dichlorophenol	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U	5.0 U
2-Chlorophenol	µg/L	10 U	10.0 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U	5.0 U
4-Chlorophenol	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U	5.0 U
Phenol	µg/L	10 U	10.0 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U	5.0 UJ
Metals										
Arsenic	µg/L	10.0 U	10.0 U	10 U	10 U	10 U	10 U	10.0 U	10.0 U	10.0 U
Mercury	µg/L	NR	NR	NR	NR	NR	0.2 U	0.20 U	0.20 U	0.20 U
Pesticides										
alpha-BHC	µg/L	0.013 U	0.013 U	0.013 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U
beta-BHC	µg/L	0.025 U	0.025 U	0.025 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U
delta-BHC	µg/L	0.013 U	0.013 U	0.013 U	0.05 U	0.05 U	0.05 U	0.050 UJ	0.050 UJ	0.050 U
gamma-BHC (lindane)	µg/L	0.013 U	0.013 U	0.013 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U

Table D.1

**Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Sample Location: Sample ID: Sample Date:		PCBM-02 PCBM-02-1108 11/11/2008	PCBM-02 PCBM-02-309 3/18/2009	PCBM-02 PCBM-021009 10/21/2009	PCBM-02 PCM-121009 10/21/2009 (Duplicate)	PCBM-02 PCBM-02-310 4/6/2010	PCBM-02 PCBM-02-1010 10/9/2010	PCBM-02 PCBM-02-0411 4/13/2011	PCBM-02 PCBM-02-1011 10/18/2011	PCBM-02 PCBM-02-1012 10/2/2012
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.5 U	9.6 U	9.7 U
2,4,5-Trichlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.5 U	9.6 U	9.7 U
2,4-Dichlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.5 U	9.6 U	9.7 U
2,5-Dichlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.5 U	9.6 U	9.7 U
2-Chlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.5 U	9.6 U	9.7 U
4-Chlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.5 U	9.6 U	9.7 U
Phenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.5 U	9.5 U	9.6 U	9.7 U
Metals										
Arsenic	µg/L	10.0 U	10 U	3.3 J	2.0 J	10.0 U	10.0 U	10.0 U	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides										
alpha-BHC	µg/L	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.047 U	0.047 U	0.048 U
beta-BHC	µg/L	0.031 J	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.047 U	0.047 U	0.048 U
delta-BHC	µg/L	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.047 UJ	0.047 U	0.048 U
gamma-BHC (lindane)	µg/L	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.047 UJ	0.047 U	0.048 U

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:	PCBM-02	PCBM-02	PCBM-02	PCBM-02	PCBM-02
Sample ID:	PCBM-02-1013	PCBM-02-1114	PCBM-02-1015	PCBM-02-1016	PCBM-02-1017
Sample Date:	10/3/2013	10/22/2014	10/14/2015	10/19/2016	10/23/2017

Parameters	Units					
Volatile Organic Compounds						
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	0.40 J	1.0 U
Semi-volatile Organic Compounds						
1,2,4,5-Tetrachlorobenzene	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 UJ
2,4-Dichlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 UJ
2,5-Dichlorophenol	µg/L	9.6 U	9.5 U	9.4 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 UJ
4-Chlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
Phenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
Metals						
Arsenic	µg/L	10 U	10 U	10 U	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides						
alpha-BHC	µg/L	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
beta-BHC	µg/L	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
delta-BHC	µg/L	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U

Table D.1

**Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Sample Location: Sample ID: Sample Date:		PCBM-03 PCBM-03-502 6/3/2002	PCBM-03 PCBM-03-802 8/30/2002	PCBM-03 PCBM-03-1202 12/13/2002	PCBM-03 PCBM-03-303 4/1/2003	PCBM-03 PCBM-03-603 6/24/2003	PCBM-03 PCBM-03-1003 10/1/2003	PCBM-03 PCBM-03-1203 12/30/2003	PCBM-03 PCM-12-1203 12/30/2003 (Duplicate)	PCBM-03 PCBM-03-304 4/14/2004
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.24 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chlorotoluene	µg/L	5.00 U	5.00 U	1.08 U	1.00 U	1.00 U	3.54 U	1.00 U	0.398 J	1.00 U
Benzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	4.67 U	4.67 U	4.67 U	4.67 U	4.67 U	4.67 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U
2,4-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U
2-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U
4-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U
Phenol	µg/L	10.0 U	9.86 J	10.0 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U	9.35 U
Metals										
Arsenic	µg/L	50.0 U	9.20 J	10.0 U	31.1	10.0 U	10.0 U	10.0 U	10.0 U	9.39 J
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides										
alpha-BHC	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0476 U	0.0467 U	0.0467 U	0.0374 U	0.0374 U	0.0374 UJ
beta-BHC	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0476 U	0.0467 U	0.0467 U	0.0467 U	0.0467 U	0.0467 UJ
delta-BHC	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0476 U	0.0467 U	0.0467 U	0.0561 U	0.0561 U	0.0561 UJ
gamma-BHC (lindane)	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0590	0.0467 U	0.0467 U	0.0374 U	0.0374 U	0.0374 UJ

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location: Sample ID: Sample Date:		PCBM-03 PCM-12-304 4/14/2004 (Duplicate)	PCBM-03 PCBM-03-1204 12/15/2004	PCBM-03 PCBM-03-605 6/27/2005	PCBM-03 PCBM-03-1005 10/31/2005	PCBM-03 PCBM-03-706 7/6/2006	PCBM-03 PCBM-03-1206 12/12/2006	PCBM-03 PCBM-03-607 6/19/2007	PCBM-03 PCBM-03-1107 11/12/2007	PCBM-03 PCBM-03-0508 5/23/2008
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	1.00 U	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
1,2,4-Trichlorobenzene	µg/L	1.00 U	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
1,2-Dichlorobenzene	µg/L	1.00 U	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
1,4-Dichlorobenzene	µg/L	1.00 U	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
2-Chlorotoluene	µg/L	1.00 U	1.00 U	0.26 J	0.50 U	0.37 J	0.50 U	0.50 U	0.50 U	2.5 U
Benzene	µg/L	1.00 U	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
Chlorobenzene	µg/L	1.00 U	1.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.5 U
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	5.05 U	5.05 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U	5.0 U
2,4,5-Trichlorophenol	µg/L	10.1 U	10.1 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U	5.0 U
2,4-Dichlorophenol	µg/L	10.1 U	10.1 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U	5.0 U
2,5-Dichlorophenol	µg/L	10.1 U	10.1 U	10 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U
2-Chlorophenol	µg/L	10.1 U	10.1 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U	5.0 U
4-Chlorophenol	µg/L	10.1 U	10.1 U	10 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U
Phenol	µg/L	10.1 U	10.1 U	10 U	10.0 U	10 U	10 U	10 UJ	5.0 U	5.0 U
Metals										
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	10 U	10 U	10 U	10.0 U	10.0 U
Mercury	µg/L	NR	NR	NR	NR	NR	NR	0.20 U	0.20 U	0.20 U
Pesticides										
alpha-BHC	µg/L	0.0374 UJ	0.0400 U	0.019	R	0.013 U	0.05 U	0.05 U	0.050 U	0.050 U
beta-BHC	µg/L	0.0467 UJ	0.0500 U	0.025 U	R	0.016 J	0.05 U	0.05 U	0.050 U	0.050 U
delta-BHC	µg/L	0.0561 UJ	0.0600 U	0.013 U	R	0.013 U	0.05 U	0.05 U	0.050 UJ	0.050 U
gamma-BHC (lindane)	µg/L	0.0374 UJ	0.0400 U	0.012 J	R	0.013 U	0.05 U	0.05 U	0.050 U	0.050 U

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location: Sample ID: Sample Date:		PCBM-03 PCBM-03-1108 11/10/2008	PCBM-03 PCBM-03-309 3/18/2009	PCBM-03 PCBM-031009 10/21/2009	PCBM-03 PCBM-03-310 4/6/2010	PCBM-03 PCBM-03-1010 10/9/2010	PCBM-03 PCBM-03-0411 4/14/2011	PCBM-03 PCM-12-0411 4/14/2011 (Duplicate)	PCBM-03 PCBM-03-1011 10/19/2011	PCBM-03 PCM-12-1011 10/19/2011 (Duplicate)
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	0.10 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 U	10 U	10 U	9.4 U	9.4 U	9.5 U	9.5 U	48 U	9.6 U
2,4,5-Trichlorophenol	µg/L	5.0 U	10 U	10 U	9.4 U	9.4 U	9.5 U	9.5 U	48 U	9.6 U
2,4-Dichlorophenol	µg/L	5.0 U	10 U	10 U	9.4 U	9.4 U	9.5 U	9.5 U	48 U	9.6 U
2,5-Dichlorophenol	µg/L	5.0 U	10 U	10 U	9.4 U	9.4 U	9.5 U	9.5 U	48 U	9.6 U
2-Chlorophenol	µg/L	5.0 U	10 U	10 U	9.4 U	9.4 U	9.5 U	9.5 U	17 J	9.6 U
4-Chlorophenol	µg/L	5.0 U	10 U	10 U	9.4 U	9.4 U	9.5 U	9.5 U	48 U	9.6 U
Phenol	µg/L	5.0 U	10 U	10 U	9.4 U	9.4 U	9.5 U	9.5 U	48 U	9.6 U
Metals										
Arsenic	µg/L	10.0 U	10 U	3.4 J	10.0 U	10.0 U	10.0 U	10.0 U	3.9 J	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides										
alpha-BHC	µg/L	0.050 U	0.050 U	0.050 U	0.047 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
beta-BHC	µg/L	0.050 U	0.050 U	0.050 U	0.16	0.048 U	0.048 U	0.048 U	0.054	0.048 U
delta-BHC	µg/L	0.050 U	0.050 U	0.050 U	0.047 U	0.048 U	0.048 U	0.048 U	0.52	0.048 U
gamma-BHC (lindane)	µg/L	0.050 U	0.050 U	0.050 U	0.047 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location: Sample ID: Sample Date:		PCBM-03 PCBM-03-1012 10/1/2012	PCBM-03 PCM-12-1012 10/1/2012 (Duplicate)	PCBM-03 PCBM-03-1013 10/9/2013	PCBM-03 PCM-12-1013 10/9/2013 (Duplicate)	PCBM-03 PCBM-03-1114 10/22/2014	PCBM-03 PCM-12-1114 10/22/2014 (Duplicate)	PCBM-03 PCBM-03-1015 10/14/2015	PCBM-03 PCM-12-1015 10/14/2015 (Duplicate)	PCBM-03 PCBM-03-1016 10/18/2016
Parameters	Units									
Volatile Organic Compounds										
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds										
1,2,4,5-Tetrachlorobenzene	µg/L	9.6 U	9.5 U	9.6 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.6 U	9.5 U	9.6 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4-Dichlorophenol	µg/L	9.6 U	9.5 U	9.6 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U
2,5-Dichlorophenol	µg/L	9.6 U	9.5 U	9.6 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U	4.7 U
2-Chlorophenol	µg/L	9.6 U	9.5 U	9.6 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chlorophenol	µg/L	9.6 U	9.5 U	9.6 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U
Phenol	µg/L	9.6 U	9.5 U	9.6 U	9.6 U	9.4 U	9.5 U	9.4 U	9.4 U	9.4 U
Metals										
Arsenic	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	3.8 J	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides										
alpha-BHC	µg/L	0.047 U	0.047 U	0.047 U	0.048 U	0.050 U	0.050 U	0.052 U	0.050 U	0.047 U
beta-BHC	µg/L	0.047 U	0.047 U	0.047 U	0.048 U	0.050 U	0.050 U	0.052 U	0.050 U	0.047 U
delta-BHC	µg/L	0.047 U	0.047 U	0.047 U	0.048 U	0.050 U	0.050 U	0.052 U	0.050 U	0.047 U
gamma-BHC (lindane)	µg/L	0.047 U	0.047 U	0.047 U	0.048 U	0.050 U	0.050 U	0.052 U	0.050 U	0.047 U

Table D.1

Historical Bedrock Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:	PCBM-03	PCBM-03	PCBM-03
Sample ID:	PCM-12-1016	PCBM-03-1017	PCM-12-1017
Sample Date:	10/18/2016	10/17/2017	10/17/2017
	Duplicate		Duplicate

Parameters	Units			
Volatile Organic Compounds				
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds				
1,2,4,5-Tetrachlorobenzene	µg/L	9.4 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.4 U	9.4 U	9.4 U
2,4-Dichlorophenol	µg/L	9.4 U	9.4 U	9.4 U
2,5-Dichlorophenol	µg/L	4.7 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	9.4 U	9.4 U	9.4 U
4-Chlorophenol	µg/L	9.4 U	9.4 U	9.4 U
Phenol	µg/L	9.4 U	9.4 U	9.4 U
Metals				
Arsenic	µg/L	10 U	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U
Pesticides				
alpha-BHC	µg/L	0.047 U	0.047 U	0.047 U
beta-BHC	µg/L	0.047 U	0.047 U	0.047 U
delta-BHC	µg/L	0.047 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.047 U	0.047 U	0.047 U

Notes:

NR- Not Required

µg/L - Micrograms per liter

U - Not detected at the associated reporting limit

"- " - Data not available

J - Estimated concentration

R - Data rejected

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-01	PCM-01	PCM-01	PCM-01	PCM-01	PCM-01	PCM-01	PCM-01
Sample ID:		PCM-01-502	PCM-01-802	PCM-01-1202	PCM-01-303	PCM-01-603	PCM-01-1003	PCM-01-1203	PCM-01-304
Sample Date:		6/3/2002	8/29/2002	12/18/2002	4/1/2003	6/27/2003	10/1/2003	12/31/2003	4/13/2004
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chlorotoluene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	0.751 J	0.332 J
Benzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	4.67 U	4.67 U	4.67 U	4.72 U	5.05 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.43 U	10.1 U
2,4-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.43 U	10.1 U
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.43 U	10.1 U
2-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.43 U	10.1 U
4-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.43 U	10.1 U
Phenol	µg/L	10.0 U	10.0 U	10.0 U	9.35 U	9.35 U	9.35 U	9.43 U	10.1 U
Metals									
Arsenic	µg/L	50.0 U	100 U	20.0 U	20.0 U	7.45 J	10.0 U	10.0 U	10.0 U
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	0.0146 J	0.0500 U	0.0500 U	0.0623	0.0467 U	0.0467 U	0.0374 U	0.0551 J
beta-BHC	µg/L	0.141	0.0500 U	0.0500 U	0.0472 U	0.0467 U	0.0467 U	0.0467 U	0.0505 UJ
delta-BHC	µg/L	0.864	0.0500 U	0.0500 U	0.0613	0.0467 U	0.0467 U	0.0561 U	0.0669 J
gamma-BHC (lindane)	µg/L	0.0103 J	0.0500 U	0.0500 U	0.0472 U	0.0467 U	0.0467 U	0.0374 U	0.0404 UJ

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-01	PCM-01	PCM-01	PCM-01	PCM-01	PCM-01	PCM-01	PCM-01
Sample ID:		PCM-01-1204	PCM-01-605	PCM-01-1005	PCM-01-706	PCM-01-1206	PCM-01-607	PCM-01-1107	PCM-01-0508
Sample Date:		12/16/2004	6/23/2005	10/27/2005	7/7/2006	12/12/2006	6/19/2007	11/13/2007	5/27/2008
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 UJ	0.50 UJ
1,2,4-Trichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 UJ	0.50 UJ
1,2-Dichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 UJ	0.50 UJ
1,4-Dichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.12 J	0.5 U	0.5 U	0.50 UJ	0.50 UJ
2-Chlorotoluene	µg/L	1.00 U	0.50 U	0.19 J	0.5 U	0.5 U	0.5 U	0.50 UJ	0.50 UJ
Benzene	µg/L	1.00 U	0.50 U	0.17 J	0.5 U	0.5 U	0.5 U	0.50 UJ	0.50 UJ
Chlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 UJ	0.50 UJ
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.05 U	10 U	10.5 U	10 U	10 U	10 U	5.0 U	5.0 U
2,4,5-Trichlorophenol	µg/L	10.1 U	10 U	10.5 U	10 U	10 U	10 U	5.0 U	5.0 U
2,4-Dichlorophenol	µg/L	10.1 U	10 U	10.5 U	10 U	10 U	10 U	5.0 U	5.0 U
2,5-Dichlorophenol	µg/L	10.1 U	10 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U
2-Chlorophenol	µg/L	10.1 U	10 U	10.5 U	10 U	10 U	10 U	5.0 U	5.0 U
4-Chlorophenol	µg/L	10.1 U	10 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U
Phenol	µg/L	10.1 U	10 U	10.5 U	10 U	10 U	10 UJ	5.0 U	5.0 U
Metals									
Arsenic	µg/L	10.0 U	5.6 J	2.6 J	10 U	10 U	10 U	10.0 U	10.0 U
Mercury	µg/L	NR	NR	NR	NR	NR	0.2 U	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.0404 UJ	0.051 J	R	0.013 U	0.05 UJ	0.05 UJ	0.050 UJ	0.050 UJ
beta-BHC	µg/L	0.0505 UJ	0.025 UJ	R	0.025 U	0.05 UJ	0.05 UJ	0.050 UJ	0.050 UJ
delta-BHC	µg/L	0.0606 UJ	0.012 J	R	0.013 U	0.05 UJ	0.05 UJ	0.050 UJ	0.050 UJ
gamma-BHC (lindane)	µg/L	0.0404 UJ	0.024 J	R	0.013 U	0.05 UJ	0.05 UJ	0.050 UJ	0.050 UJ

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-01	PCM-01	PCM-01	PCM-01	PCM-01	PCM-01	PCM-01	PCM-01
Sample ID:		PCM-01-1108	PCM-01-309	PCM-011009	PCM-01-310	PCM-01-1010	PCM-01-0411	PCM-01-1011	PCM-01-1012
Sample Date:		11/10/2008	3/18/2009	10/21/2009	4/13/2010	10/11/2010	4/14/2011	10/19/2011	10/2/2012
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 U	10 U	10 U	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U
2,4,5-Trichlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U
2,4-Dichlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U
2,5-Dichlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U
2-Chlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U
4-Chlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U
Phenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.4 U	9.5 U	9.6 U	9.5 U
Metals									
Arsenic	µg/L	10.0 UJ	10 U	3.8 J	7.1 J	6.6 J	10.0 U	2.9 J	10 U
Mercury	µg/L	0.20 UJ	0.20 U	0.20 U	0.20 U	0.060 J	0.20 U	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.050 UJ	0.050 U	0.050 U	0.048 U	0.047 U	0.048 U	0.047 U	0.047 U
beta-BHC	µg/L	0.050 UJ	0.050 U	0.050 U	0.048 U	0.047 U	0.048 U	0.047 U	0.047 U
delta-BHC	µg/L	0.050 UJ	0.050 U	0.050 U	0.048 U	0.047 U	0.048 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.050 UJ	0.050 U	0.050 U	0.048 U	0.047 U	0.048 U	0.047 U	0.047 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-01	PCM-01	PCM-01	PCM-01	PCM-01
Sample ID:		PCM-01-1013	PCM-01-1114	PCM-01-1015	PCM-01-1016	PCM-01-1017
Sample Date:		10/9/2013	10/27/2014	10/15/2015	10/18/2016	10/18/2017
Parameters	Units					
Volatile Organic Compounds						
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds						
1,2,4,5-Tetrachlorobenzene	µg/L	9.5 U	9.4 U	9.5 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.5 U	9.4 U	9.5 U	9.4 U	9.4 U
2,4-Dichlorophenol	µg/L	9.5 U	9.4 U	9.5 U	9.4 U	9.4 U
2,5-Dichlorophenol	µg/L	9.5 U	9.4 U	9.5 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	9.5 U	9.4 U	9.5 U	9.4 U	9.4 U
4-Chlorophenol	µg/L	9.5 U	9.4 U	9.5 U	9.4 U	9.4 U
Phenol	µg/L	9.5 U	9.4 U	9.5 U	9.4 U	9.4 U
Metals						
Arsenic	µg/L	10 U	10 U	10 U	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides						
alpha-BHC	µg/L	0.048 U	0.050 U	0.050 U	0.047 U	0.047 U
beta-BHC	µg/L	0.048 U	0.050 U	0.050 U	0.047 U	0.047 U
delta-BHC	µg/L	0.048 U	0.050 U	0.050 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.048 U	0.050 U	0.050 U	0.047 U	0.047 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02
Sample ID:		PCM-02-502	PCM-12-502	PCM-02-802	PCM-02-1202	PCM-02-303	PCM-02-603	PCM-02-1003	PCM-02-1203
Sample Date:		6/3/2002	6/3/2002 (Duplicate)	8/28/2002	12/17/2002	3/31/2003	6/26/2003	10/2/2003	12/30/2003
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	0.246 J	1.00 U	0.221 J
2-Chlorotoluene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	0.639 J
Benzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	1.00 U	1.00 U	0.178 J	1.00 U	1.00 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	5.00 U	4.72 U	4.67 U	4.67 U	4.72 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.35 U	9.43 U
2,4-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.35 U	9.43 U
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.35 U	9.43 U
2-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.35 U	9.43 U
4-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.35 U	9.43 U
Phenol	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.35 U	9.43 U
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	12.1 U	14.4
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0505 U	0.0660	0.0467 U	0.0541 U	0.0374 U
beta-BHC	µg/L	0.0500 U	0.00720 J	0.0500 U	0.0505 U	0.0472 U	0.0467 U	0.0748 J	0.0467 U
delta-BHC	µg/L	0.0500 U	0.0384 J	0.0500 U	0.0505 U	0.0783	0.0467 U	0.0991 J	0.0561 U
gamma-BHC (lindane)	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0505 U	0.0472 U	0.0467 U	0.0467 U	0.0374 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02
Sample ID:		NA	PCM-02-1204	PCM-02-605	PCM-02-1005	PCM-02-706	PCM-02-1206	PCM-02-607	PCM-02-1107
Sample Date:		3/15/2004	12/16/2004	6/23/2005	10/27/2005	7/7/2006	12/12/2006	6/14/2007	11/8/2007
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	OW-NS	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U
1,2,4-Trichlorobenzene	µg/L	OW-NS	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U
1,2-Dichlorobenzene	µg/L	OW-NS	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U
1,4-Dichlorobenzene	µg/L	OW-NS	1.00 U	0.50 U	0.50 U	0.26 J	0.2 J	0.27 J	0.33 J
2-Chlorotoluene	µg/L	OW-NS	1.00 U	0.27 J	0.15 J	0.5 U	0.5 U	0.5 U	0.85 U
Benzene	µg/L	OW-NS	1.00 U	0.20 J	0.16 J	0.15 J	0.5 U	0.14 J	0.19 J
Chlorobenzene	µg/L	OW-NS	1.00 U	0.50 U	0.16 J	0.22 J	0.19 J	0.5 U	0.50 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	OW-NS	5.05 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U
2,4,5-Trichlorophenol	µg/L	OW-NS	10.1 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U
2,4-Dichlorophenol	µg/L	OW-NS	10.1 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U
2,5-Dichlorophenol	µg/L	OW-NS	10.1 U	10 U	10 U	10 U	10 U	10 U	5.0 U
2-Chlorophenol	µg/L	OW-NS	10.1 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U
4-Chlorophenol	µg/L	OW-NS	10.1 U	10 U	10 U	10 U	10 U	10 U	5.0 U
Phenol	µg/L	OW-NS	10.1 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U
Metals									
Arsenic	µg/L	OW-NS	10.0 U	7.2 J	10.0 U	10 U	10 U	10 U	11.2
Mercury	µg/L	NR	NR	NR	NR	NR	NR	0.2 U	0.20 U
Pesticides									
alpha-BHC	µg/L	OW-NS	0.0404 UJ	0.019 J	R	0.0047 J	0.05 UJ	0.05 UJ	0.050 U
beta-BHC	µg/L	OW-NS	0.0505 UJ	0.025 UJ	0.0074 J	0.025 U	0.05 UJ	0.05 UJ	0.01 J
delta-BHC	µg/L	OW-NS	0.0606 UJ	0.013 UJ	R	0.008 J	0.05 UJ	0.05 UJ	0.050 U
gamma-BHC (lindane)	µg/L	OW-NS	0.0404 UJ	0.0064 J	R	0.013 U	0.05 UJ	0.05 UJ	0.050 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02
Sample ID:		PCM-02-0508	PCM-02-1108	PCM-02-309	PCM-021009	PCM-02-310	PCM-02-1010	PCM-02-0411	PCM-02-1011
Sample Date:		5/27/2008	11/11/2008	3/18/2009	10/23/2009	4/13/2010	10/11/2010	4/15/2011	10/19/2011
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	0.50 U	0.20 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	0.50 U	0.13 J	1.0 U	1.0 U	1.0 U	0.12 J	1.0 U	1.0 U
Chlorobenzene	µg/L	0.21 J	0.19 J	1.0 U	1.0 U	1.0 U	0.16 J	1.0 U	0.16 J
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 U	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.7 U
2,4,5-Trichlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.7 U
2,4-Dichlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.7 U
2,5-Dichlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.7 U
2-Chlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.7 U
4-Chlorophenol	µg/L	5.0 U	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.7 U
Phenol	µg/L	5.0 U	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.7 U
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10 U	10 U	4.6 J	2.7 J	10.0 U	2.8 J
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.050 UJ	0.050 U	0.050 U	0.050 U	0.048 U	0.045 J	0.048 U	0.048 U
beta-BHC	µg/L	0.050 UJ	0.050 U	0.050 U	0.050 U	0.048 U	0.047 U	0.048 U	0.048 U
delta-BHC	µg/L	0.050 UJ	0.050 U	0.050 U	0.050 U	0.048 U	0.047 U	0.048 U	0.048 U
gamma-BHC (lindane)	µg/L	0.050 UJ	0.050 U	0.050 U	0.050 U	0.048 U	0.047 U	0.048 U	0.048 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-02	PCM-02	PCM-02	PCM-02	PCM-02	PCM-02
Sample ID:		PCM-02-1012	PCM-02-1013	PCM-02-1114	PCM-02-1015	PCM-02-1016	PCM-02-1017
Sample Date:		10/2/2012	10/9/2013	10/27/2014	10/15/2015	10/19/2016	10/18/2017
Parameters	Units						
Volatile Organic Compounds							
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	0.22 J	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	0.14 J	1.0 U	0.15 J	0.16 J	1.0 U	1.0 U
Semi-volatile Organic Compounds							
1,2,4,5-Tetrachlorobenzene	µg/L	9.6 U	9.7 U	9.5 U	9.5 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.6 U	9.7 U	9.5 U	9.5 U	9.4 U	9.4 U
2,4-Dichlorophenol	µg/L	9.6 U	9.7 U	9.5 U	9.5 U	9.4 U	9.4 U
2,5-Dichlorophenol	µg/L	9.6 U	9.7 U	9.5 U	9.5 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	9.6 U	9.7 U	9.5 U	9.5 U	9.4 U	9.4 U
4-Chlorophenol	µg/L	9.6 U	9.7 U	9.5 U	9.5 U	9.4 U	9.4 U
Phenol	µg/L	9.6 U	9.7 U	9.5 U	9.5 U	9.4 U	9.4 U
Metals							
Arsenic	µg/L	10 U	10 U	10 U	10 U	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides							
alpha-BHC	µg/L	0.047 U	0.047 U	0.050 U	0.052 U	0.047 U	0.047 U
beta-BHC	µg/L	0.047 U	0.047 U	0.050 U	0.052 U	0.047 U	0.047 U
delta-BHC	µg/L	0.047 U	0.047 U	0.050 U	0.052 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.047 U	0.047 U	0.050 U	0.052 U	0.047 U	0.047 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03
Sample ID:		PCM-03-502	PCM-03-802	PCM-03-1202	PCM-12-1202	PCM-03-303	PCM-12-303	PCM-03-603	PCM-03-903
Sample Date:		5/31/2002	8/28/2002	12/12/2002	12/12/2002 (Duplicate)	3/28/2003	3/28/2003 (Duplicate)	6/18/2003	9/29/2003
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	125 U	100 U	10.0 U	10.0 U	1.00 U	20.0 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	125 U	100 U	10.0 U	10.0 U	1.00 U	20.0 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	71.1 J	63.4 J	86.9	84.7	99.8	79.0	95.4	99.9
1,4-Dichlorobenzene	µg/L	217	199	291	281	280	273	267	252
2-Chlorotoluene	µg/L	125 U	100 U	9.36 U	9.91 U	11.4	20.0 U	8.93	10.4 U
Benzene	µg/L	82.6 J	82.4 J	133	131	131	105	107	94.2
Chlorobenzene	µg/L	3600	3810	3590	3790	3860	3830	3540	3640
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 UJ	5.00 U	5.00 U	4.72 U	4.72 U	4.72 U	4.72 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	9.43 U	9.43 U	9.43 U	9.43 U
2,4-Dichlorophenol	µg/L	17.1	10.0 U	3.20 J	10.0 U	15.3	7.25 J	15.2 J	10.8
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	9.43 U	9.43 U	9.43 U	9.43 U
2-Chlorophenol	µg/L	42.7	4.51 J	5.40 J	4.20 J	12.8	7.40 J	27.4 J	10.9
4-Chlorophenol	µg/L	84.7	15.4	10.0 U	10.0 U	28.9	17.0	53.5 J	21.9
Phenol	µg/L	5.10 J	10.0 U	10.0 U	10.0 U	9.43 U	9.43 U	3.79 J	9.43 U
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	10.0 U	7.34 J
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0501 U	0.0688	0.0685	0.0469 U	0.0509 U
beta-BHC	µg/L	0.0500 U	0.0820	0.107	0.0870	0.133	0.130	3.75 J	0.0467 U
delta-BHC	µg/L	0.0500 U	0.679	0.666 J	0.353 J	1.28	1.25	1.13 J	0.848
gamma-BHC (lindane)	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0500 U	0.0472 U	0.0472 U	0.0469 U	0.0467 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03
Sample ID:		PCM-03-1203	PCM-03-304	PCM-03-1204	PCM-03-605	PCM-03-1005	PCM-03-606	PCM-03-1206	PCM-03-607
Sample Date:		12/23/2003	3/11/2004	12/13/2004	6/21/2005	10/18/2005	6/26/2006	12/14/2006	6/14/2007
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	1.00 U	1.00 U	1.00 U	0.50 U	36 J	25 U	25 U	250 U
1,2,4-Trichlorobenzene	µg/L	0.412 J	1.00 U	1.00 U	0.22 J	41 J	25 U	25 U	250 U
1,2-Dichlorobenzene	µg/L	117	77.6	72.4	73 J	87 J	11 J	66	68 J
1,4-Dichlorobenzene	µg/L	250	207	181	280	300	47	260	300
2-Chlorotoluene	µg/L	12.5	8.24	8.10	9.5 J	28 J	25 U	8.5 J	250 U
Benzene	µg/L	141	99.8	72.8	73 J	61 J	8.9 J	47	70 J
Chlorobenzene	µg/L	3550	3010	2890	4100	4000	680	2700	3900
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	4.76 U	4.72 U	4.67 U	10 U	10.0 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	µg/L	9.52 U	9.43 U	9.35 U	10 U	10.0 U	10 U	10 U	10 U
2,4-Dichlorophenol	µg/L	22.6	25.6	9.35 U	11	6.62 J	3.5 J	8 J	15
2,5-Dichlorophenol	µg/L	9.52 U	9.43 U	17.1	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	µg/L	34.2	28.0	21.0	21	11.4	8.3 J	12	20
4-Chlorophenol	µg/L	70.6	59.1	41.8	60	20	10 U	26	44
Phenol	µg/L	4.32 J	4.84 J	9.35 U	0.56 J	0.628 J	10 U	10 U	10 U
Metals									
Arsenic	µg/L	8.61 J	10.0 U	10.0 U	10.0 UJ	10.0 U	10 U	10 U	10 UJ
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	.2 UJ
Pesticides									
alpha-BHC	µg/L	0.0377 U	0.0374 UJ	0.0377 U	0.026 J	0.025 U	.019	.25 U	.5 U
beta-BHC	µg/L	0.126	0.0467 UJ	0.236 U	0.34 J	0.28	.29	.25 U	0.08 J
delta-BHC	µg/L	1.16	0.933 J	1.12 U	0.25 J	0.44	.65	.73	0.75
gamma-BHC (lindane)	µg/L	0.0377 U	0.0374 UJ	0.0377 U	0.013 UJ	0.013 U	.013 U	.25 U	.5 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03
Sample ID:		PCM-03-1107	PCM-03-0508	PCM-12-0508	PCM-03-1108	PCM-03-309 031809	PCM-031009	PCM-03-310	PCM-03-1010
Sample Date:		11/8/2007	5/21/2008	5/21/2008 (Duplicate)	11/11/2008	3/18/2009	10/23/2009	4/6/2010	10/9/2010
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	130 U	130 U	130 U	130 U	1.0 U	1.0 U	250 U	200 U
1,2,4-Trichlorobenzene	µg/L	130 U	51 J	130 U	130 U	1.0 U	1.0 U	250 U	200 U
1,2-Dichlorobenzene	µg/L	67 J	130 U	130 U	87 J	97	90	100 J	66 J
1,4-Dichlorobenzene	µg/L	310	440	430	380	440	500	510	340
2-Chlorotoluene	µg/L	130 U	130 U	130 U	130 U	12 U	1.0 U	120 J	200 U
Benzene	µg/L	48 J	47 J	51 J	73 J	84	73	76 J	50 J
Chlorobenzene	µg/L	4000	4300	4300	4000	4300	4900	5000	3500
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	9.4 U	9.6 U
2,4,5-Trichlorophenol	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	9.4 U	9.6 U
2,4-Dichlorophenol	µg/L	16	28	26	12	28	11 J	6.0 J	18
2,5-Dichlorophenol	µg/L	5.0 U	5.0 U	7.5	22	6.1 J	3.9 J	9.4 U	9.6 U
2-Chlorophenol	µg/L	19	37	35	13	41	16	5.9 J	14
4-Chlorophenol	µg/L	5.0 U	77	67	29	93	71	9.0 J	31
Phenol	µg/L	0.72 J	5.0 U	1.1 J	0.58 J	4.2 J	1.3 J	9.4 U	1.7 J
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	10 U	10 U	5.7 J	10.0 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.95	0.20 U
Pesticides									
alpha-BHC	µg/L	0.25 U	0.25 U	0.25 U	1.0 U	0.050 U	0.050 U	0.048 U	0.048 U
beta-BHC	µg/L	0.076 J	0.48	0.46	5.6	0.072	0.12	0.060	0.046 J
delta-BHC	µg/L	0.6 J	0.6	0.68	1.1	2.0	1.5	1.0	0.59
gamma-BHC (lindane)	µg/L	0.25 U	0.25 U	0.25 U	1.0 U	0.050 U	0.050 U	0.048 U	0.048 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03	PCM-03
Sample ID:		PCM-03-0411	PCM-03-1011	PCM-03-1012	PCM-03-1013	PCM-03-1113	PCM-03-1015	PCM-03-1016	PCM-03-1017
Sample Date:		4/13/2011	10/19/2011	10/2/2012	10/3/2013	10/28/2014	10/15/2015	10/19/2016	10/23/2017
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	120 U	130 U	130 U	4.0 U	200 U	200 U	5.0 U	25 U
1,2,4-Trichlorobenzene	µg/L	120 U	130 U	130 U	4.0 U	200 U	200 U	5.0 U	25 U
1,2-Dichlorobenzene	µg/L	61 J	46 J	49 J	82	59 J	50 J	52	59
1,4-Dichlorobenzene	µg/L	310	220	260	450	310	310	320	390
2-Chlorotoluene	µg/L	120 U	130 U	130 U	16	200 U	200 U	12	13 J
Benzene	µg/L	62 J	34 J	44 J	58	64 J	49 J	34	44
Chlorobenzene	µg/L	3400	3000	3200	4600	3700	3700	3500	3700
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	9.5 U	9.6 U	48 U	38 U	9.5 U	9.5 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.5 U	9.6 U	48 U	38 U	9.5 U	9.5 U	9.4 U	9.4 UJ
2,4-Dichlorophenol	µg/L	9.5 U	9.6 U	48 U	27 J	9.5 U	5.6 J	24	9.4 UJ
2,5-Dichlorophenol	µg/L	13	9.6 U	48 U	38 U	9.5 U	9.5 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	9.0 J	9.6 U	16 J	18 J	9.5 U	5.0 J	24	11 J
4-Chlorophenol	µg/L	16	9.6 U	31 J	31 J	3.1 J	8.2 J	53	24
Phenol	µg/L	0.91 J	9.6 U	48 U	38 U	9.5 U	9.5 U	9.4 U	9.4 U
Metals									
Arsenic	µg/L	10.0 U	10 U	10 U	10 U	10 U	3.7 J	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.048 U	0.048 U	0.047 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
beta-BHC	µg/L	0.059	0.048 U	0.061	0.093	0.064	0.059	0.068	0.092
delta-BHC	µg/L	0.075	0.048 U	0.91	0.86	0.79	0.76	0.047 U	0.62
gamma-BHC (lindane)	µg/L	0.048 U	0.048 U	0.047 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04
Sample ID:		PCM-04-602	PCM-04-802	PCM-04-1202	PCM-04-303	PCM-04-603	PCM-12-603	PCM-04-903	PCM-04-1203
Sample Date:		6/4/2002	8/30/2002	12/10/2002	3/28/2003	6/23/2003	6/23/2003 (Duplicate)	9/30/2003	12/29/2003
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	5.00 U	5.00 U	20.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	5.00 U	5.00 U	20.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	66.9	52.5	27.2	53.4	50.0	48.7	41.7 J	31.1
1,4-Dichlorobenzene	µg/L	261	272	154	269	259	266	267 J	240
2-Chlorotoluene	µg/L	5.00 U	5.00 U	20.0 U	2.73	1.57 U	1.61 U	3.25 U	3.17
Benzene	µg/L	228 J	218	143	225	204	202	185 J	161
Chlorobenzene	µg/L	6080	6290	4210	6210	6870	6760	7010 J	6470
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 U	5.05 U	4.72 U	4.67 U	4.67 U	4.72 U	4.76 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.1 U	9.43 U	9.35 U	9.35 U	9.43 U	9.52 U
2,4-Dichlorophenol	µg/L	6.19 J	4.69 J	10.1 U	6.48 J	4.15 J	3.79 J	4.20 J	9.52 U
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.1 U	9.43 U	9.35 U	9.35 U	9.43 U	9.52 U
2-Chlorophenol	µg/L	19.3	18.8	12.4 J	23.5	20.4	20.1	18.0	11.4
4-Chlorophenol	µg/L	48.6	37.3	32.6 J	45.2	38.0	38.4	35.4	27.9
Phenol	µg/L	3.60 J	10.0 U	10.1 U	3.91 J	9.35 U	9.35 U	9.43 U	9.52 U
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	20.0 U	10.0 U	10.0 U	12.8	7.61 J
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0642	0.0467 U	0.0467 U	0.0479 U	0.0374 U
beta-BHC	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0361 J	0.0467 U	0.0467 U	0.0467 U	0.0467 U
delta-BHC	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0472 U	0.0467 U	0.0467 U	1.38	0.895
gamma-BHC (lindane)	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0472 U	0.0467 U	0.0467 U	0.0467 U	0.0374 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04
Sample ID:		PCM-04-304	PCM-04-1204	PCM-04-605	PCM-04-1005	PCM-12-1005	PCM-04-606	PCM-04-1206	PCM-04-607
Sample Date:		3/12/2004	12/15/2004	6/22/2005	10/19/2005	10/19/2005 (Duplicate)	6/26/2006	12/14/2006	6/18/2007
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	1.00 U	1.00 U	250 U	13 U	13 U	250 U	250 U	310 U
1,2,4-Trichlorobenzene	µg/L	1.00 U	1.00 U	250 U	13 U	13 U	250 U	250 U	310 U
1,2-Dichlorobenzene	µg/L	45.9	1.00 U	250 U	20	21	250 U	250 U	310 U
1,4-Dichlorobenzene	µg/L	229	245	300	250	260	330	260	330
2-Chlorotoluene	µg/L	2.45	2.13 U	250 U	13 U	13 U	250 U	250 U	310 U
Benzene	µg/L	195	178	140 J	85	86	69 J	65 J	110 J
Chlorobenzene	µg/L	6330 J	7220	8600	6600	8000	10000	7100	10000
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	4.67 U	5.05 U	10 U	10.0 U	10.0 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	µg/L	9.35 U	10.1 U	10 U	10.0 U	10.0 U	10 U	10 U	10 U
2,4-Dichlorophenol	µg/L	4.69 J	10.1 U	3.0 J	1.38 J	1.36 J	4.3 J	1.4 J	10 U
2,5-Dichlorophenol	µg/L	9.35 U	10.1 U	10 U	10 U	10 U	10 U	1.5 J	10 U
2-Chlorophenol	µg/L	28.1	13.9	20	15.6	15.0	14	14	14
4-Chlorophenol	µg/L	55.3	28.3	32	42	32	34	28	26
Phenol	µg/L	5.67 J	10.1 U	10 U	10.0 U	10.0 U	10 U	10 U	10 U
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10 U	10 U	10 U
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	0.10 J
Pesticides									
alpha-BHC	µg/L	0.0374 UJ	0.0400 U	0.013 U	0.013 U	0.013 U	.013 U	.05 UJ	0.0081 J
beta-BHC	µg/L	0.0467 UJ	0.0500 U	0.025 U	0.025 U	0.025 U	.025 U	.05 UJ	0.14 J
delta-BHC	µg/L	0.0561 UJ	1.40 U	0.05	0.035	0.035	.032	.057 J	.05 UJ
gamma-BHC (lindane)	µg/L	0.0374 UJ	0.0400 U	0.013 U	0.013 U	0.013 U	.013 U	.05 UJ	.05 UJ

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04
Sample ID:		PCM-12-607	PCM-04-1107	PCM-04-0508	PCM-04-1108	PCM-04-309	PCM-041009	PCM-04-310	PCM-04-1010
Sample Date:		6/18/2007 (Duplicate)	11/9/2007	5/21/2008	11/11/2008	3/18/2009	10/23/2009	4/6/2010	10/9/2010
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	310 U	210 U	500 U	360 U	1.0 U	1.0 U	500 U	500 U
1,2,4-Trichlorobenzene	µg/L	310 U	210 U	500 U	360 U	1.0 U	1.0 U	500 U	500 U
1,2-Dichlorobenzene	µg/L	310 U	210 U	500 U	360 U	1.0 U	18 J	500 U	500 U
1,4-Dichlorobenzene	µg/L	320	300	400 J	400	290	300	380 J	210 J
2-Chlorotoluene	µg/L	310 U	210 U	500 U	360 U	2.1 U	1.0 U	500 U	500 U
Benzene	µg/L	100 J	48 J	500 U	360 U	41 J	25 J	500 U	500 U
Chlorobenzene	µg/L	11000	8600	12000	11000	10000	10000	12000	7700
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	10 U	5.0 U	5.0 U	5.0 U	10 U	10 U	9.4 U	9.5 U
2,4,5-Trichlorophenol	µg/L	10 U	5.0 U	5.0 U	5.0 U	10 U	10 U	9.4 U	9.5 U
2,4-Dichlorophenol	µg/L	10 U	1.2 J	1.6 J	0.88 J	1.8 J	10 U	1.1 J	0.98 J
2,5-Dichlorophenol	µg/L	10 U	5.0 U	2.0 J	5.0 U	1.9 J	1.4 J	9.4 U	9.5 U
2-Chlorophenol	µg/L	15	5.0 U	5.0 U	10	34	24	14	14
4-Chlorophenol	µg/L	26	25	35	30	66	49	24	27
Phenol	µg/L	10 U	5.0 U	5.0 U	5.0 U	2.4 J	7.2 J	9.4 U	9.5 U
Metals									
Arsenic	µg/L	10 U	10.0 U	10.0 U	10.0 U	10 U	10 U	3.2 J	10.0 U
Mercury	µg/L	.2 U	0.11 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.060 J
Pesticides									
alpha-BHC	µg/L	.05 U	0.050 U	0.050 U	0.25 U	0.050 U	0.050 U	0.048 U	0.048 U
beta-BHC	µg/L	0.16	0.050 U	0.050 U	0.25 U	0.050 U	0.050 U	0.048 U	0.048 U
delta-BHC	µg/L	.05 U	0.025 J	0.12	1.1	1.2	0.050 U	0.10	0.13 J
gamma-BHC (lindane)	µg/L	.05 U	0.050 U	0.050 U	0.25 U	0.050 U	0.050 U	0.048 U	0.048 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04	PCM-04
Sample ID:		PCM-04-0411	PCM-04-1011	PCM-04-1012	PCM-04-1013	PCM-04-1113	PCM-04-1015	PCM-04-1016	PCM-04-1017
Sample Date:		4/13/2011	10/19/2011	10/2/2012	10/3/2013	10/28/2014	10/15/2015	10/19/2016	10/23/2017
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	500 U	500 U	400 U	4.0 U	500 U	500 U	10 U	50 U
1,2,4-Trichlorobenzene	µg/L	500 U	500 U	400 U	4.0 U	500 U	500 U	10 U	50 U
1,2-Dichlorobenzene	µg/L	500 U	500 U	400 U	20	500 U	500 U	14	21 J
1,4-Dichlorobenzene	µg/L	220 J	200 J	170 J	340	250 J	200 J	230	200
2-Chlorotoluene	µg/L	500 U	500 U	400 U	4.0 U	500 U	500 U	2.2 J	50 U
Benzene	µg/L	500 U	500 U	400 U	33	500 U	500 U	27	22 J
Chlorobenzene	µg/L	8400	8000	7000	10000 J	9500	8500	7700	6700
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	9.5 U	48 U	9.6 U	9.6 U	9.5 U	9.5 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.5 U	48 U	9.6 U	9.6 U	9.5 U	9.5 U	9.4 U	9.4 UJ
2,4-Dichlorophenol	µg/L	0.90 J	48 U	0.54 J	0.71 J	9.5 U	0.54 J	1.4 J	1.6 J
2,5-Dichlorophenol	µg/L	9.5 U	48 U	9.6 U	9.6 U	9.5 U	9.5 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	12	39 J	8.0 J	11	4.5 J	8.0 J	23	22 J
4-Chlorophenol	µg/L	28	48 U	18	18	8.9 J	14	46	43
Phenol	µg/L	9.5 U	48 U	9.6 U	9.6 U	9.5 U	9.5 U	9.4 U	9.4 U
Metals									
Arsenic	µg/L	10.0 U	10 U	10 U	10 U	10 U	10 U	10 U	4 J
Mercury	µg/L	0.11 J	0.064 J	0.071 J	0.20 U	0.060 J	0.097 J	0.04 J	0.20 U
Pesticides									
alpha-BHC	µg/L	0.048 U	0.047 U	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
beta-BHC	µg/L	0.048 U	0.047 U	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
delta-BHC	µg/L	0.13	0.090	0.053	0.81	1.8	0.13	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.048 U	0.047 U	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U

Table D.2

**Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Sample Location: Sample ID: Sample Date:		PCM-05 PCM-05-602 6/4/2002	PCM-05 PCM-05-802 8/29/2002	PCM-05 PCM-05-1202 12/12/2002	PCM-05 PCM-05-303 3/28/2003	PCM-05 PCM-05-603 6/24/2003	PCM-05 PCM-05-903 9/30/2003	PCM-05 PCM-12-903 9/30/2003 (Duplicate)	PCM-05 PCM-05-1203 12/29/2003
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chlorotoluene	µg/L	5.00 U	5.00 U	2.00 U	1.00 U	1.00 U	1.13 U	1.01 U	1.00 U
Benzene	µg/L	5.91	2.79 J	1.23	3.79	4.44	1.39	1.22	0.690 J
Chlorobenzene	µg/L	96.8	69.9	47.8	56.2	76.2	49.7	45.3	49.6
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	4.72 U	4.67 U	4.72 U	4.72 U	4.81 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.43 U	9.62 U
2,4-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.43 U	9.62 U
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.43 U	9.62 U
2-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.43 U	9.62 U
4-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.43 U	9.62 U
Phenol	µg/L	10.0 U	10.0 U	10.0 U	9.43 U	9.35 U	9.43 U	9.43 U	9.62 U
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	15.4	18.5	7.09 J
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0613	0.0472 U	0.0511 U	0.0471 U	0.0374 U
beta-BHC	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0472 U	0.0472 U	0.0467 U	0.0467 U	0.0467 U
delta-BHC	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0472 U	0.0472 U	0.0467 U	0.0467 U	0.0561 U
gamma-BHC (lindane)	µg/L	0.0500 U	0.0500 U	0.0505 U	0.0472 U	0.0472 U	0.0467 U	0.0467 U	0.0374 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-05	PCM-05	PCM-05	PCM-05	PCM-05	PCM-05	PCM-05	PCM-05
Sample ID:		PCM-05-304	PCM-05-1204	PCM-05-605	PCM-05-1005	PCM-05-706	PCM-05-1206	PCM-05-607	PCM-05-1107
Sample Date:		3/15/2004	12/14/2004	6/20/2005	10/20/2005	7/5/2006	12/13/2006	6/18/2007	11/9/2007
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	1.00 U	1.00 U	4.2 U	3.1 U	13 U	0.5 U	0.5 U	1.8 U
1,2,4-Trichlorobenzene	µg/L	1.00 U	1.00 U	4.2 U	3.1 U	13 U	0.5 U	0.5 U	1.8 U
1,2-Dichlorobenzene	µg/L	1.00 U	1.00 U	4.2 U	3.1 U	13 U	0.5 U	0.5 U	1.8 U
1,4-Dichlorobenzene	µg/L	1.00 U	1.00 U	4.2 U	3.1 U	13 U	0.79 J	0.5 U	1.8 U
2-Chlorotoluene	µg/L	0.288 J	1.00 U	4.2 U	3.1 U	13 U	0.5 U	0.5 U	1.8 U
Benzene	µg/L	1.71	5.68	7.0	3.1 U	13 U	3.4	4.9	0.68 J
Chlorobenzene	µg/L	56.1	94.9	120	77	87	91	100	61
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	4.76 U	4.67 U	10 U	10.0 U	10 U	10 U	10 U	5.0 U
2,4,5-Trichlorophenol	µg/L	9.52 U	9.35 U	10 U	10.0 U	10 U	10 U	10 U	R
2,4-Dichlorophenol	µg/L	9.52 U	9.35 U	10 U	10.0 U	10 U	10 U	10 U	R
2,5-Dichlorophenol	µg/L	9.52 U	9.35 U	10 U	10 U	10 U	10 U	10 U	R
2-Chlorophenol	µg/L	9.52 U	9.35 U	10 U	10.0 U	10 U	10 U	10 U	R
4-Chlorophenol	µg/L	9.52 U	9.35 U	10 U	10 U	1.4 J	10 U	10 U	R
Phenol	µg/L	9.52 U	9.35 U	10 U	10.0 U	10 U	10 U	10 U	R
Metals									
Arsenic	µg/L	8.71 J	10.0 U	10.0 UJ	10.0 U	10 UJ	10 U	10 U	10.0 U
Mercury	µg/L	NR	NR	NR	NR	NR	NR	0.2 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.0374 U	0.0377 U	0.022	0.013 U	.013 U	0.05 U	0.05 U	0.050 U
beta-BHC	µg/L	0.0467 U	0.0472 U	0.025 U	0.025 U	.025 U	0.05 U	0.05 U	0.050 U
delta-BHC	µg/L	0.0561 U	0.0566 U	0.011 J	0.025	.013 U	0.05 U	0.05 U	0.050 UJ
gamma-BHC (lindane)	µg/L	0.0374 U	0.0377 U	0.015	0.013 U	.013 U	0.05 U	0.05 U	0.050 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-05	PCM-05	PCM-05	PCM-05	PCM-05	PCM-05	PCM-05	PCM-05
Sample ID:		PCM-05-0508	PCM-05-1108	PCM-05-309	PCM-051009	PCM-05-310	PCM-05-1010	PCM-05-0411	PCM-05-1011
Sample Date:		5/22/2008	11/11/2008	3/18/2009	10/23/2009	4/16/2010	10/9/2010	4/13/2011	10/18/2011
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	2.5 U	3.6 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2,4-Trichlorobenzene	µg/L	2.5 U	3.6 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichlorobenzene	µg/L	2.5 U	3.6 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	µg/L	2.5 U	3.6 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Chlorotoluene	µg/L	2.5 U	3.6 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	µg/L	2.2 J	5.5	9.2	4.5	4.3 J	1.8 J	2.4 J	5.0 U
Chlorobenzene	µg/L	72	110	190	150	130	100	87	81
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 UJ	R	10 U	10 U	9.4 U	9.5 U	9.5 U	9.7 U
2,4,5-Trichlorophenol	µg/L	5.0 UJ	R	10 U	10 U	9.4 U	9.5 U	9.5 U	9.7 U
2,4-Dichlorophenol	µg/L	5.0 UJ	R	10 U	10 U	9.4 U	9.5 U	9.5 U	9.7 U
2,5-Dichlorophenol	µg/L	5.0 UJ	R	10 U	10 U	9.4 U	9.5 U	9.5 U	9.7 U
2-Chlorophenol	µg/L	5.0 UJ	R	0.78 J	10 U	9.4 U	9.5 U	9.5 U	9.7 U
4-Chlorophenol	µg/L	5.0 UJ	R	2.9 J	10 U	1.5 J	9.5 U	1.7 J	2.8 J
Phenol	µg/L	5.0 UJ	R	10 U	10 U	9.4 U	9.5 U	9.5 U	9.7 U
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10 U	10 U	10.0 U	6.7 J	10.0 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.048 U	0.048 U
beta-BHC	µg/L	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.048 U	0.048 U
delta-BHC	µg/L	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.048 U	0.048 U
gamma-BHC (lindane)	µg/L	0.050 U	0.050 U	0.050 U	0.050 U	0.048 U	0.048 U	0.048 U	0.048 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-05	PCM-05	PCM-05	PCM-05	PCM-05	PCM-05
Sample ID:		PCM-05-1012	PCM-05-1013	PCM-05-1113	PCM-05-1015	PCM-05-1016	PCM-05-1017
Sample Date:		10/2/2012	10/3/2013	10/28/2014	10/14/2015	10/29/2016	10/18/2017
Parameters	Units						
Volatile Organic Compounds							
1,2,3-Trichlorobenzene	µg/L	4.0 U	4.0 U	5.0 U	5.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	4.0 U	4.0 U	5.0 U	5.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	4.0 U	4.0 U	5.0 U	5.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	4.0 U	4.0 U	5.0 U	5.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	4.0 U	4.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Benzene	µg/L	4.0 U	4.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	80	150	130	110	110	110
Semi-volatile Organic Compounds							
1,2,4,5-Tetrachlorobenzene	µg/L	9.6 U	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.6 U	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4-Dichlorophenol	µg/L	9.6 U	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,5-Dichlorophenol	µg/L	9.6 U	9.6 U	9.5 U	9.4 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	9.6 U	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chlorophenol	µg/L	9.6 U	1.1 J	9.5 U	9.4 U	9.4 U	9.4 U
Phenol	µg/L	9.6 U	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
Metals							
Arsenic	µg/L	5.0 J	10 U	10 U	4.6 J	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides							
alpha-BHC	µg/L	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
beta-BHC	µg/L	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
delta-BHC	µg/L	0.048 U	0.048 U	0.031 J	0.052 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.048 U	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-06	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06
Sample ID:		NA	NA	NA	NA	NA	NA	NA	NA
Sample Date:		06/03/2002	08/29/2002	12/13/2002	3/31/2003	6/24/2003	9/30/2003	12/29/2003	3/15/2004
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-
2-Chlorotoluene	µg/L	-	-	-	-	-	-	-	-
Benzene	µg/L	-	-	-	-	-	-	-	-
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	µg/L	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	µg/L	-	-	-	-	-	-	-	-
2,5-Dichlorophenol	µg/L	-	-	-	-	-	-	-	-
2-Chlorophenol	µg/L	-	-	-	-	-	-	-	-
4-Chlorophenol	µg/L	-	-	-	-	-	-	-	-
Phenol	µg/L	-	-	-	-	-	-	-	-
Metals									
Arsenic	µg/L	-	-	-	-	-	-	-	-
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	-	-	-	-	-	-	-	-
beta-BHC	µg/L	-	-	-	-	-	-	-	-
delta-BHC	µg/L	-	-	-	-	-	-	-	-
gamma-BHC (lindane)	µg/L	-	-	-	-	-	-	-	-

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-06	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06
Sample ID:		NA	NA	NA	NA	NA	NA	NA	NA
Sample Date:		12/16/2004	6/20/2005	10/20/2005	7/5/2006	12/13/2006	6/19/2007	11/12/2007	5/23/2008
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-
2-Chlorotoluene	µg/L	-	-	-	-	-	-	-	-
Benzene	µg/L	-	-	-	-	-	-	-	-
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	µg/L	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	µg/L	-	-	-	-	-	-	-	-
2,5-Dichlorophenol	µg/L	-	-	-	-	-	-	-	-
2-Chlorophenol	µg/L	-	-	-	-	-	-	-	-
4-Chlorophenol	µg/L	-	-	-	-	-	-	-	-
Phenol	µg/L	-	-	-	-	-	-	-	-
Metals									
Arsenic	µg/L	-	-	-	-	-	-	-	-
Mercury	µg/L	NR	NR	NR	NR	NR	-	-	-
Pesticides									
alpha-BHC	µg/L	-	-	-	-	-	-	-	-
beta-BHC	µg/L	-	-	-	-	-	-	-	-
delta-BHC	µg/L	-	-	-	-	-	-	-	-
gamma-BHC (lindane)	µg/L	-	-	-	-	-	-	-	-

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-06	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06
Sample ID:		NA	NA	NA	NA	PCM-06-1010	NA	NA	PCM-06-1012
Sample Date:		11/10/2008	3/19/2009	10/21/2009	4/12/2010	10/11/2010	4/14/2011	10/18/2011	10/1/2012
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	-	-	-	-	1.0 U	-	-	1.0 U
1,2,4-Trichlorobenzene	µg/L	-	-	-	-	1.0 U	-	-	1.0 U
1,2-Dichlorobenzene	µg/L	-	-	-	-	1.0 U	-	-	1.0 U
1,4-Dichlorobenzene	µg/L	-	-	-	-	1.0 U	-	-	1.0 U
2-Chlorotoluene	µg/L	-	-	-	-	1.0 U	-	-	1.0 U
Benzene	µg/L	-	-	-	-	1.0 U	-	-	1.0 U
Chlorobenzene	µg/L	-	-	-	-	1.0 U	-	-	1.0 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	-	-	-	-	IV-NS	-	-	11 U
2,4,5-Trichlorophenol	µg/L	-	-	-	-	IV-NS	-	-	11 U
2,4-Dichlorophenol	µg/L	-	-	-	-	IV-NS	-	-	11 U
2,5-Dichlorophenol	µg/L	-	-	-	-	IV-NS	-	-	11 U
2-Chlorophenol	µg/L	-	-	-	-	IV-NS	-	-	11 U
4-Chlorophenol	µg/L	-	-	-	-	IV-NS	-	-	11 U
Phenol	µg/L	-	-	-	-	IV-NS	-	-	11 U
Metals									
Arsenic	µg/L	-	-	-	-	IV-NS	-	-	10 U
Mercury	µg/L	-	-	-	-	IV-NS	-	-	0.20 U
Pesticides									
alpha-BHC	µg/L	-	-	-	-	IV-NS	-	-	0.048 U
beta-BHC	µg/L	-	-	-	-	IV-NS	-	-	0.048 U
delta-BHC	µg/L	-	-	-	-	IV-NS	-	-	0.048 U
gamma-BHC (lindane)	µg/L	-	-	-	-	IV-NS	-	-	0.048 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:	PCM-06	PCM-06	PCM-06	PCM-06	PCM-06
Sample ID:	PCM-06-1013	PCM-06-1114	PCM-06-1015	PCM-06-1016	PCM-06
Sample Date:	10/10/2013	10/22/2014	10/14/2015	10/29/2016	NA
					10/19/2017

Parameters	Units					
Volatile Organic Compounds						
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	-
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	-
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	-
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	-
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	-
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	-
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	-
Semi-volatile Organic Compounds						
1,2,4,5-Tetrachlorobenzene	µg/L	IV-NS	9.5 U	9.5 U	-	-
2,4,5-Trichlorophenol	µg/L	IV-NS	9.5 U	9.5 U	-	-
2,4-Dichlorophenol	µg/L	IV-NS	9.5 U	9.5 U	-	-
2,5-Dichlorophenol	µg/L	IV-NS	9.5 U	9.5 U	-	-
2-Chlorophenol	µg/L	IV-NS	9.5 U	9.5 U	-	-
4-Chlorophenol	µg/L	IV-NS	9.5 U	9.5 U	-	-
Phenol	µg/L	IV-NS	9.5 U	9.5 U	-	-
Metals						
Arsenic	µg/L	IV-NS	10 U	10 U	-	-
Mercury	µg/L	IV-NS	0.20 U	0.20 U	-	-
Pesticides						
alpha-BHC	µg/L	IV-NS	0.050 U	0.052 U	-	-
beta-BHC	µg/L	IV-NS	0.050 U	0.052 U	-	-
delta-BHC	µg/L	IV-NS	0.050 U	0.052 U	-	-
gamma-BHC (lindane)	µg/L	IV-NS	0.050 U	0.052 U	-	-

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-07	PCM-07	PCM-07	PCM-07	PCM-07	PCM-07	PCM-07	PCM-07
Sample ID:		PCM-07-502	PCM-07-802	PCM-07-1202	PCM-07-303	PCM-07-603	PCM-07-1003	PCM-07-1203	PCM-07-304
Sample Date:		6/3/2002	8/29/2002	12/18/2002	4/3/2003	6/27/2003	10/6/2003	12/31/2003	4/14/2004
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chlorotoluene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	2.32 U	0.490 J	1.00 U
Benzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	5.81 U	4.67 U	4.67 U	4.67 U	5.05 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	11.6 U	9.35 U	9.35 U	9.35 U	10.1 U
2,4-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	11.6 U	9.35 U	9.35 U	9.35 U	10.1 U
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	11.6 U	9.35 U	9.35 U	9.35 U	10.1 U
2-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	11.6 U	9.35 U	9.35 U	9.35 U	10.1 U
4-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	11.6 U	9.35 U	9.35 U	9.35 U	10.1 U
Phenol	µg/L	10.0 U	10.0 U	10.0 U	11.6 U	9.35 U	3.49 J	9.35 U	10.1 U
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	10.0 U	4.61 J	25.4	19.8	9.55 J
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	0.0500 U	0.0500 U	0.0510 U	0.0642	0.0467 U	0.0467 U	0.0374 U	0.0404 U
beta-BHC	µg/L	0.0500 U	0.0500 U	0.0510 U	0.0472 U	0.0467 U	0.0467 U	0.0467 U	0.0505 U
delta-BHC	µg/L	0.0500 U	0.0500 U	0.0510 U	0.0472 U	0.0467 U	0.0561 U	0.0664	0.0606 U
gamma-BHC (lindane)	µg/L	0.00810 J	0.0500 U	0.0510 U	0.0575	0.0467 U	0.0374 U	0.0374 U	0.0404 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-07	PCM-07	PCM-07	PCM-07	PCM-07	PCM-07	PCM-07R	PCM-07R
Sample ID:		PCM-07-1204	PCM-07-605	PCM-07-1005	PCM-07-706	PCM-07-1206	PCM-07-607	NA	NA
Sample Date:		12/21/2004	6/23/2005	10/31/2005	7/5/2006	12/13/2006	6/19/2007	11/12/2007	5/23/2008
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	-	-
1,2,4-Trichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	-	-
1,2-Dichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	-	-
1,4-Dichlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	-	-
2-Chlorotoluene	µg/L	1.00 U	0.32 J	0.50 U	0.5 U	0.5 U	0.5 U	-	-
Benzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	-	-
Chlorobenzene	µg/L	1.00 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	-	-
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	4.72 U	10 U	10.0 U	10 U	10 U	10 U	-	-
2,4,5-Trichlorophenol	µg/L	9.43 U	10 U	10.0 U	10 U	10 U	10 U	-	-
2,4-Dichlorophenol	µg/L	9.43 U	10 U	10.0 U	10 U	10 U	10 U	-	-
2,5-Dichlorophenol	µg/L	9.43 U	10 U	10 U	10 U	10 U	10 U	-	-
2-Chlorophenol	µg/L	9.43 U	10 U	10.0 U	10 U	10 U	10 U	-	-
4-Chlorophenol	µg/L	9.43 U	10 U	10 U	10 U	10 U	10 U	-	-
Phenol	µg/L	9.43 U	10 U	10.0 U	10 U	10 U	10 UJ	-	-
Metals									
Arsenic	µg/L	10.0 U	10.0 U	10.0 U	10 U	10 U	10 U	-	-
Mercury	µg/L	NR	NR	NR	NR	NR	0.2 U	-	-
Pesticides									
alpha-BHC	µg/L	0.0377 UJ	0.055	R	0.013 U	0.05 U	0.013 J	-	-
beta-BHC	µg/L	0.0472 UJ	0.025 U	R	0.025 U	0.05 U	0.05 U	-	-
delta-BHC	µg/L	0.0566 UJ	0.013 U	R	0.013 U	0.05 U	0.011 J	-	-
gamma-BHC (lindane)	µg/L	0.0377 UJ	0.024	R	0.013 U	0.05 U	0.05 U	-	-

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-07R	PCM-07R	PCM-07R	PCM-07R	PCM-07R	PCM-07R	PCM-07R	PCM-07R
Sample ID:		PCM-7R-1108	PCM-7R-309	PCM-071009	PCM-07R-310	PCM-07R-1010	PCM-07R-0411	PCM-07R-1011	PCM-07R-1012
Sample Date:		11/12/2008	3/19/2009	10/23/2009	4/16/2010	10/11/2010	4/14/2011	10/18/2011	10/1/2012
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	0.21 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	0.79	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	0.18 J	1.0 U	1.0 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 U	10 U	10 U	9.6 U	9.6 U	9.6 U	9.7 U	9.8 U
2,4,5-Trichlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.6 U	9.6 U	9.7 U	9.8 U
2,4-Dichlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.6 U	9.6 U	9.7 U	9.8 U
2,5-Dichlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.6 U	9.6 U	9.7 U	9.8 U
2-Chlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.6 U	9.6 U	9.7 U	9.8 U
4-Chlorophenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.6 U	9.6 U	9.7 U	9.8 U
Phenol	µg/L	5.0 U	10 U	10 U	9.6 U	9.6 U	9.6 U	9.7 U	9.8 U
Metals									
Arsenic	µg/L	10.0 U	10 U	1.8 J	10.0 U	IV-NS	10.0 U	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	IV-NS	0.20 U	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.11	0.052	0.060	0.048 U	0.053 J	0.033 J	0.048 U	0.048 U
beta-BHC	µg/L	0.19	0.050 U	0.050 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
delta-BHC	µg/L	0.062	0.038 J	0.050 U	0.048 U	0.048 U	0.032 J	0.057 J	0.048 U
gamma-BHC (lindane)	µg/L	0.11	0.051	0.028 J	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:	PCM-07R	PCM-07R	PCM-07R	PCM-07R	PCM-07R
Sample ID:	PCM-07R-1013	PCM-07R-1114	PCM-07R-1015	PCM-07R-1016	PCM-07R-1017
Sample Date:	10/9/2013	10/22/2014	10/14/2015	10/29/2016	10/18/2017

Parameters	Units					
Volatile Organic Compounds						
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds						
1,2,4,5-Tetrachlorobenzene	µg/L	9.6 U	9.5 U	9.5 U	-	9.4 U
2,4,5-Trichlorophenol	µg/L	9.6 U	9.5 U	9.5 U	-	9.4 U
2,4-Dichlorophenol	µg/L	9.6 U	9.5 U	9.5 U	-	9.4 U
2,5-Dichlorophenol	µg/L	9.6 U	9.5 U	9.5 U	-	4.7 U
2-Chlorophenol	µg/L	9.6 U	9.5 U	9.5 U	-	9.4 U
4-Chlorophenol	µg/L	9.6 U	9.5 U	9.5 U	-	9.4 U
Phenol	µg/L	9.6 U	9.5 U	9.5 U	-	9.4 U
Metals						
Arsenic	µg/L	10 U	10 U	10 U	-	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	-	0.20 U
Pesticides						
alpha-BHC	µg/L	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
beta-BHC	µg/L	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
delta-BHC	µg/L	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.048 U	0.050 U	0.052 U	0.047 U	0.047 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-08	PCM-08	PCM-08	PCM-08	PCM-08	PCM-08	PCM-08	PCM-08
Sample ID:		PCM-08-602	NA	PCM-08-1202	NA	NA	NA	NA	NA
Sample Date:		6/4/2002	8/29/2002	12/13/2002	3/31/2003	6/24/2003	9/30/2003	12/29/2003	3/15/2004
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	5.00 U	-	1.00 U	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/L	5.00 U	-	1.00 U	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	5.00 U	-	1.00 U	-	-	-	-	-
1,4-Dichlorobenzene	µg/L	5.00 U	-	1.00 U	-	-	-	-	-
2-Chlorotoluene	µg/L	5.00 U	-	1.47 U	-	-	-	-	-
Benzene	µg/L	5.00 U	-	1.00 U	-	-	-	-	-
Chlorobenzene	µg/L	5.00 U	-	1.00 U	-	-	-	-	-
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	IV-NS	-	5.00 U	-	-	-	-	-
2,4,5-Trichlorophenol	µg/L	IV-NS	-	10.0 U	-	-	-	-	-
2,4-Dichlorophenol	µg/L	IV-NS	-	10.0 U	-	-	-	-	-
2,5-Dichlorophenol	µg/L	IV-NS	-	10.0 U	-	-	-	-	-
2-Chlorophenol	µg/L	IV-NS	-	10.0 U	-	-	-	-	-
4-Chlorophenol	µg/L	IV-NS	-	10.0 U	-	-	-	-	-
Phenol	µg/L	IV-NS	-	10.0 U	-	-	-	-	-
Metals									
Arsenic	µg/L	10.0 U	-	10.0 U	-	-	-	-	-
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	IV-NS	-	0.0500 U	-	-	-	-	-
beta-BHC	µg/L	IV-NS	-	0.0500 U	-	-	-	-	-
delta-BHC	µg/L	IV-NS	-	0.0500 U	-	-	-	-	-
gamma-BHC (lindane)	µg/L	IV-NS	-	0.0500 U	-	-	-	-	-

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-08	PCM-08	PCM-08	PCM-08	PCM-08	PCM-08	PCM-08	PCM-08
Sample ID:		NA	NA	NA	NA	NA	NA	PCM-08-1107	PCM-08-0508
Sample Date:		12/16/2004	6/20/2005	10/20/2005	7/5/2006	12/13/2006	6/19/2007	11/12/2007	5/23/2008
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	-	-	-	-	-	-	0.50 U	0.50 U
1,2,4-Trichlorobenzene	µg/L	-	-	-	-	-	-	0.50 U	0.50 U
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	0.50 U	0.50 U
1,4-Dichlorobenzene	µg/L	-	-	-	-	-	-	0.50 U	0.50 U
2-Chlorotoluene	µg/L	-	-	-	-	-	-	0.50 U	0.50 U
Benzene	µg/L	-	-	-	-	-	-	0.50 U	0.50 U
Chlorobenzene	µg/L	-	-	-	-	-	-	0.50 U	0.50 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	-	-	-	-	-	-	5.0 U	5.0 U
2,4,5-Trichlorophenol	µg/L	-	-	-	-	-	-	5.0 U	5.0 U
2,4-Dichlorophenol	µg/L	-	-	-	-	-	-	5.0 U	5.0 U
2,5-Dichlorophenol	µg/L	-	-	-	-	-	-	5.0 U	5.0 U
2-Chlorophenol	µg/L	-	-	-	-	-	-	5.0 U	5.0 U
4-Chlorophenol	µg/L	-	-	-	-	-	-	5.0 U	5.0 U
Phenol	µg/L	-	-	-	-	-	-	5.0 U	5.0 U
Metals									
Arsenic	µg/L	-	-	-	-	-	-	10.0 U	10.0 U
Mercury	µg/L	NR	NR	NR	NR	NR	-	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	-	-	-	-	-	-	0.050 U	0.050 U
beta-BHC	µg/L	-	-	-	-	-	-	0.050 U	0.050 U
delta-BHC	µg/L	-	-	-	-	-	-	0.0073 J	0.050 U
gamma-BHC (lindane)	µg/L	-	-	-	-	-	-	0.050 U	0.050 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-08	PCM-08	PCM-08	PCM-08	PCM-08	PCM-08	PCM-08	PCM-08
Sample ID:		PCM-08-1108	PCM-08-309	PCM-081009	PCM-08-310	PCM-08-1010	PCM-08-0411	PCM-08-1011	PCM-08-1012
Sample Date:		11/10/2008	3/19/2009	10/21/2009	4/6/2010	10/11/2010	4/14/2011	10/19/2011	10/1/2012
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	2.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.6 U	9.6 U	9.6 U
2,4,5-Trichlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.6 U	9.6 U	9.6 U
2,4-Dichlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.6 U	9.6 U	9.6 U
2,5-Dichlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.6 U	9.6 U	9.6 U
2-Chlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.6 U	9.6 U	9.6 U
4-Chlorophenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.6 U	9.6 U	9.6 U
Phenol	µg/L	5.0 U	10 U	10 U	10 U	9.4 U	9.6 U	9.6 U	9.6 U
Metals									
Arsenic	µg/L	10.0 U	10 U	10 U	10.0 U	10.0 U	10.0 U	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.014 J	0.050 U	0.050 U	0.047 U	0.048 U	0.048 U	0.048 U	0.047 U
beta-BHC	µg/L	0.072	0.050 U	0.050 U	1.0	0.048 U	0.048 U	0.048 U	0.047 U
delta-BHC	µg/L	0.050 U	0.050 U	0.050 U	0.047 U	0.048 U	0.048 U	0.048 U	0.047 U
gamma-BHC (lindane)	µg/L	0.050 U	0.050 U	0.050 U	0.047 U	0.048 U	0.048 U	0.048 U	0.047 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-08	PCM-08	PCM-08	PCM-08	PCM-08
Sample ID:		PCM-08-1013	PCM-08-1114	PCM-08-1015	PCM-08-1016	PCM-08-1017
Sample Date:		10/9/2013	10/22/2014	10/14/2015	10/18/2016	10/17/2017
Parameters	Units					
Volatile Organic Compounds						
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds						
1,2,4,5-Tetrachlorobenzene	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4-Dichlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,5-Dichlorophenol	µg/L	9.6 U	9.5 U	9.4 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
Phenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
Metals						
Arsenic	µg/L	10 U	10 U	10 U	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides						
alpha-BHC	µg/L	0.047 U	0.050 U	0.050 U	0.030 J	0.047 U
beta-BHC	µg/L	0.047 U	0.050 U	0.050 U	0.047 U	0.047 U
delta-BHC	µg/L	0.047 U	0.050 U	0.050 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.047 U	0.050 U	0.050 U	0.047 U	0.047 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-09	PCM-09	PCM-09	PCM-09	PCM-09	PCM-09	PCM-09	PCM-09
Sample ID:		NA	NA	NA	NA	NA	NA	NA	NA
Sample Date:		6/3/2002	8/29/2002	12/13/2002	3/31/2003	6/24/2003	9/30/2003	12/29/2003	3/15/2004
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-
2-Chlorotoluene	µg/L	-	-	-	-	-	-	-	-
Benzene	µg/L	-	-	-	-	-	-	-	-
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	µg/L	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	µg/L	-	-	-	-	-	-	-	-
2,5-Dichlorophenol	µg/L	-	-	-	-	-	-	-	-
2-Chlorophenol	µg/L	-	-	-	-	-	-	-	-
4-Chlorophenol	µg/L	-	-	-	-	-	-	-	-
Phenol	µg/L	-	-	-	-	-	-	-	-
Metals									
Arsenic	µg/L	-	-	-	-	-	-	-	-
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	-	-	-	-	-	-	-	-
beta-BHC	µg/L	-	-	-	-	-	-	-	-
delta-BHC	µg/L	-	-	-	-	-	-	-	-
gamma-BHC (lindane)	µg/L	-	-	-	-	-	-	-	-

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-09	PCM-09	PCM-09	PCM-09	PCM-09	PCM-09	PCM-09	PCM-09
Sample ID:		NA	NA	NA	NA	NA	NA	NA	NA
Sample Date:		12/16/2004	6/20/2005	10/20/2005	7/5/2006	12/13/2006	6/19/2007	11/12/2007	5/23/2008
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	µg/L	-	-	-	-	-	-	-	-
2-Chlorotoluene	µg/L	-	-	-	-	-	-	-	-
Benzene	µg/L	-	-	-	-	-	-	-	-
Chlorobenzene	µg/L	-	-	-	-	-	-	-	-
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	µg/L	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	µg/L	-	-	-	-	-	-	-	-
2,5-Dichlorophenol	µg/L	-	-	-	-	-	-	-	-
2-Chlorophenol	µg/L	-	-	-	-	-	-	-	-
4-Chlorophenol	µg/L	-	-	-	-	-	-	-	-
Phenol	µg/L	-	-	-	-	-	-	-	-
Metals									
Arsenic	µg/L	-	-	-	-	-	-	-	-
Mercury	µg/L	NR	NR	NR	NR	NR	-	-	-
Pesticides									
alpha-BHC	µg/L	-	-	-	-	-	-	-	-
beta-BHC	µg/L	-	-	-	-	-	-	-	-
delta-BHC	µg/L	-	-	-	-	-	-	-	-
gamma-BHC (lindane)	µg/L	-	-	-	-	-	-	-	-

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-09	PCM-09	PCM-09	PCM-09	PCM-09	PCM-09	PCM-09	PCM-09
Sample ID:		NA	PCM-09-309	NA	PCM-09-310	NA	PCM-09-0411	PCM-09-1011	NA
Sample Date:		11/10/2008	3/19/2009	10/21/2009	4/6/2010	10/11/2010	4/14/2011	10/18/2011	10/1/2012
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	-	1.0 U	-	1.0 U	-	1.0 U	1.0 U	-
1,2,4-Trichlorobenzene	µg/L	-	1.0 U	-	1.0 U	-	1.0 U	1.0 U	-
1,2-Dichlorobenzene	µg/L	-	1.0 U	-	1.0 U	-	1.0 U	1.0 U	-
1,4-Dichlorobenzene	µg/L	-	1.0 U	-	1.0 U	-	1.0 U	1.0 U	-
2-Chlorotoluene	µg/L	-	1.0 U	-	1.0 U	-	1.0 U	1.0 U	-
Benzene	µg/L	-	1.0 U	-	1.0 U	-	1.0 U	1.0 U	-
Chlorobenzene	µg/L	-	1.0 U	-	1.0 U	-	1.0 U	1.0 U	-
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	-	10 U	-	9.5 U	-	9.5 U	9.7 U	-
2,4,5-Trichlorophenol	µg/L	-	10 U	-	9.5 U	-	9.5 U	9.7 U	-
2,4-Dichlorophenol	µg/L	-	10 U	-	9.5 U	-	9.5 U	9.7 U	-
2,5-Dichlorophenol	µg/L	-	10 U	-	9.5 U	-	9.5 U	9.7 U	-
2-Chlorophenol	µg/L	-	10 U	-	9.5 U	-	9.5 U	9.7 U	-
4-Chlorophenol	µg/L	-	10 U	-	9.5 U	-	9.5 U	9.7 U	-
Phenol	µg/L	-	10 U	-	9.5 U	-	9.5 U	9.7 U	-
Metals									
Arsenic	µg/L	-	10 U	-	10.0 U	-	10.0 U	10 U	-
Mercury	µg/L	-	0.20 U	-	0.20 U	-	0.20 U	0.20 U	-
Pesticides									
alpha-BHC	µg/L	-	0.050 U	-	0.048 U	-	0.048 U	0.047 U	-
beta-BHC	µg/L	-	0.050 U	-	0.25	-	0.048 U	0.047 U	-
delta-BHC	µg/L	-	0.050 U	-	0.048 U	-	0.048 U	0.047 U	-
gamma-BHC (lindane)	µg/L	-	0.050 U	-	0.048 U	-	0.048 U	0.047 U	-

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-09	PCM-09	PCM-09	PCM-09	PCM-09
Sample ID:		PCM-09-1013	PCM-09-1114	PCM-10-1015	PCM-10-1016	PCM-09-1017
Sample Date:		10/9/2013	10/22/2014	10/14/2015	10/18/2016	10/17/2017
Parameters	Units					
Volatile Organic Compounds						
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	-	-	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	-	-	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	-	-	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	-	-	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	-	-	1.0 U
Benzene	µg/L	1.0 U	1.0 U	-	-	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	-	-	1.0 U
Semi-volatile Organic Compounds						
1,2,4,5-Tetrachlorobenzene	µg/L	9.7 U	9.5 U	-	-	9.4 U
2,4,5-Trichlorophenol	µg/L	9.7 U	9.5 U	-	-	9.4 U
2,4-Dichlorophenol	µg/L	9.7 U	9.5 U	-	-	9.4 U
2,5-Dichlorophenol	µg/L	9.7 U	9.5 U	-	-	4.7 U
2-Chlorophenol	µg/L	9.7 U	9.5 U	-	-	9.4 U
4-Chlorophenol	µg/L	9.7 U	9.5 U	-	-	9.4 U
Phenol	µg/L	9.7 U	9.5 U	-	-	9.4 U
Metals						
Arsenic	µg/L	10 U	52 J	-	-	10 U
Mercury	µg/L	0.20 U	0.41	-	-	0.20 U
Pesticides						
alpha-BHC	µg/L	0.048 U	0.050 U	-	-	0.047 U
beta-BHC	µg/L	0.048 U	0.050 U	-	-	0.047 U
delta-BHC	µg/L	0.048 U	0.050 U	-	-	0.047 U
gamma-BHC (lindane)	µg/L	0.048 U	0.050 U	-	-	0.047 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-10	PCM-10	PCM-10	PCM-10	PCM-10	PCM-10	PCM-10	PCM-10
Sample ID:		PCM-10-602	PCM-10-802	PCM-10-1202	PCM-10-303	PCM-10-603	PCM-10-1003	PCM-10-1203	PCM-10-304
Sample Date:		6/4/2002	8/29/2002	12/18/2002	4/2/2003	6/24/2003	10/2/2003	12/31/2003	4/13/2004
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chlorotoluene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.16 U	0.805 J	1.00 U
Benzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	5.00 U	5.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.00 U	5.00 U	5.00 U	4.95 U	4.67 U	4.67 U	4.67 U	4.67 U
2,4,5-Trichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.90 U	9.35 U	9.35 U	9.35 U	9.35 U
2,4-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.90 U	9.35 U	9.35 U	9.35 U	9.35 U
2,5-Dichlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.90 U	9.35 U	9.35 U	9.35 U	9.35 U
2-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.90 U	9.35 U	9.35 U	9.35 U	9.35 U
4-Chlorophenol	µg/L	10.0 U	10.0 U	10.0 U	9.90 U	9.35 U	9.35 U	9.35 U	9.35 U
Phenol	µg/L	10.0 U	10.0 U	10.0 U	9.90 U	9.35 U	9.35 U	9.35 U	9.35 U
Metals									
Arsenic	µg/L	10.0 U	10.0 U	20.0 U	8.98 J	5.48 J	10.0 U	23.5	16.1
Mercury	µg/L	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides									
alpha-BHC	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0791	0.0472 U	0.0837 U	0.0374 U	0.0662
beta-BHC	µg/L	0.0662	0.0500 U	0.0677	0.122	0.138	0.126	0.0467 U	0.0725
delta-BHC	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0640	0.0472 U	0.0467 U	0.0561 U	0.0676
gamma-BHC (lindane)	µg/L	0.0500 U	0.0500 U	0.0500 U	0.0594	0.0472 U	0.0467 U	0.0374 U	0.0404 U

Table D.2

**Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York**

Sample Location:		PCM-10	PCM-10	PCM-10	PCM-10	PCM-10	PCM-10	PCM-10	PCM-10
Sample ID:		NA	PCM-10-605	PCM-10-1005	PCM-10-706	PCM-10-1206	PCM-10-607	PCM-10-1107	PCM-10-0508
Sample Date:		12/16/2004	6/23/2005	10/31/2005	7/6/2006	12/12/2006	6/19/2007	11/12/2007	5/23/2008
Units									
	µg/L	Frozen - No sample	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
	µg/L	Frozen - No sample	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
	µg/L	Frozen - No sample	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
	µg/L	Frozen - No sample	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
	µg/L	Frozen - No sample	0.17 J	0.11 J	0.5 U	0.5 U	0.53 U	0.50 U	0.50 U
	µg/L	Frozen - No sample	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
	µg/L	Frozen - No sample	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
n	µg/L	Frozen - No sample	10 U	10.0 U	10 U	10 U	10 U	5.0 U	5.0 U
	µg/L	Frozen - No sample	10 U	10.0 U	10 U	10 U	10 U	5.0 U	5.0 U
	µg/L	Frozen - No sample	10 U	10.0 U	10 U	10 U	10 U	5.0 U	5.0 U
	µg/L	Frozen - No sample	10 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U
	µg/L	Frozen - No sample	10 U	10.0 U	10 U	10 U	10 U	5.0 U	5.0 U
	µg/L	Frozen - No sample	10 U	10 U	10 U	10 U	10 U	5.0 U	5.0 U
	µg/L	Frozen - No sample	10 U	10.0 U	10 U	10 U	10 UJ	5.0 U	5.0 U
µg/L	Frozen - No sample	10.0 U	10.0 U	10 U	10 U	10 U	10.0 U	10.0 U	
µg/L	NR	NR	NR	NR	NR	0.2 U	0.20 U	0.20 U	
µg/L	Frozen - No sample	0.038	R	0.026	0.03 J	0.014 J	0.0054 J	0.019 J	
µg/L	Frozen - No sample	0.078	0.062 J	0.06	0.06 U	0.022 J	0.02 J	0.058 U	
µg/L	Frozen - No sample	0.0062 J	R	0.0062 J	0.05 U	0.0089 J	0.050 UJ	0.050 U	
µg/L	Frozen - No sample	0.0092 J	R	0.013 U	0.05 U	0.05 U	0.050 U	0.050 U	

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-10	PCM-10	PCM-10	PCM-10	PCM-10	PCM-10	PCM-10	PCM-10
Sample ID:		PCM-101108	PCM-10-309	PCM-101009	PCM-10-310	PCM-10-1010	PCM-10-0411	PCM-10-1011	PCM-10-1012
Sample Date:		11/10/2008	3/19/2009	10/21/2009	4/13/2010	10/11/2010	4/15/2011	10/18/2011	10/1/2012
Parameters	Units								
Volatile Organic Compounds									
1,2,3-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	µg/L	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.6 U	9.6 U
2,4,5-Trichlorophenol	µg/L	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.6 U	9.6 U
2,4-Dichlorophenol	µg/L	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.6 U	9.6 U
2,5-Dichlorophenol	µg/L	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.6 U	9.6 U
2-Chlorophenol	µg/L	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.6 U	9.6 U
4-Chlorophenol	µg/L	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.6 U	9.6 U
Phenol	µg/L	5.0 U	10 U	10 U	9.7 U	9.5 U	9.5 U	9.6 U	9.6 U
Metals									
Arsenic	µg/L	10.0 U	10 U	2.9 J	10.0 U	10.0 U	10.0 U	10 U	2.7 J
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides									
alpha-BHC	µg/L	0.064 J	0.050 U	0.040 J	0.048 U	0.055 J	0.047 U	0.048 U	0.048 U
beta-BHC	µg/L	0.19 J	0.050 U	0.13	0.048 U	0.048 U	0.047 U	0.045 J	0.048 U
delta-BHC	µg/L	0.016 J	0.050 U	0.050 U	0.048 U	0.048 U	0.047 U	0.048 U	0.048 U
gamma-BHC (lindane)	µg/L	0.050 UJ	0.050 U	0.050 U	0.048 U	0.048 U	0.047 U	0.048 U	0.048 U

Table D.2

Historical Overburden Groundwater Monitoring Results
Glenn Springs Holdings, Inc.
102nd Street Landfill Site
Niagara Falls, New York

Sample Location:		PCM-10	PCM-10	PCM-10	PCM-10	PCM-10
Sample ID:		PCM-10-1013	PCM-10-1114	PCM-10-1114	PCM-10-1016	PCM-10-1017
Sample Date:		10/9/2013	10/22/2014	10/14/2015	10/18/2016	10/18/2017
Parameters	Units					
Volatile Organic Compounds						
1,2,3-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semi-volatile Organic Compounds						
1,2,4,5-Tetrachlorobenzene	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4,5-Trichlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4-Dichlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
2,5-Dichlorophenol	µg/L	9.6 U	9.5 U	9.4 U	4.7 U	4.7 U
2-Chlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chlorophenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
Phenol	µg/L	9.6 U	9.5 U	9.4 U	9.4 U	9.4 U
Metals						
Arsenic	µg/L	10 U	3.1 J	6.4 J	10 U	10 U
Mercury	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Pesticides						
alpha-BHC	µg/L	0.048 U	0.050 U	0.050 U	0.047 U	0.047 U
beta-BHC	µg/L	0.048 U	0.050 U	0.050 U	0.022 J	0.026 J
delta-BHC	µg/L	0.048 U	0.050 U	0.050 U	0.047 U	0.047 U
gamma-BHC (lindane)	µg/L	0.048 U	0.050 U	0.050 U	0.047 U	0.047 U

Notes:

NA - Not Applicable

NR - Not Required

µg/L - Micrograms per liter

U - Not detected at the associated reporting limit

"- " - Well Dry, No Sample Collected

OW-NS - Obstructed Well, No Sample

IV-NS - Insufficient Volume, No Sample

J - Estimated concentration

R - Data rejected

Appendix E

Concentration Trend Graphs

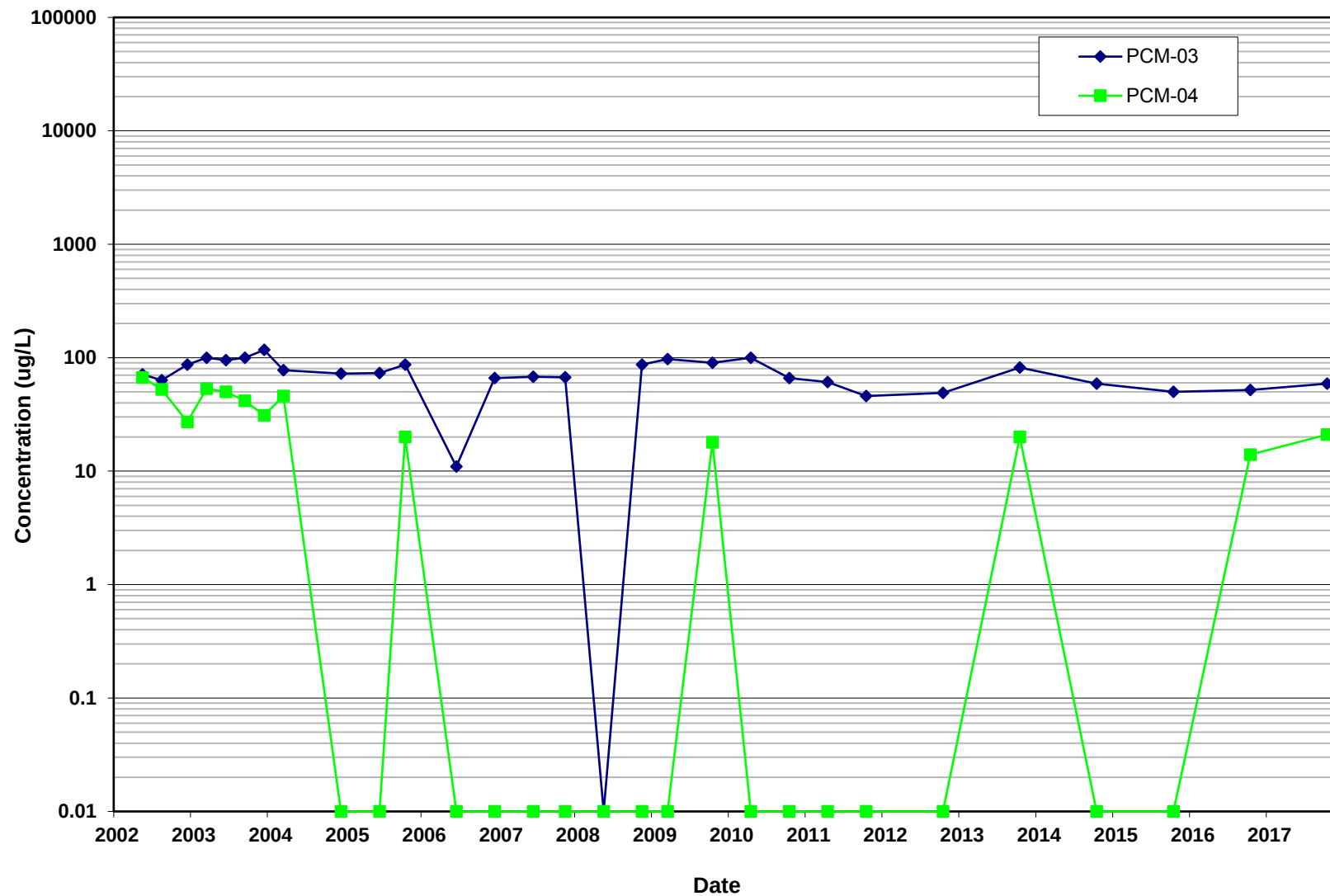


figure E.1
CONCENTRATION OF 1,2-DICHLOROBENZENE vs. TIME
102ND STREET LANDFILL

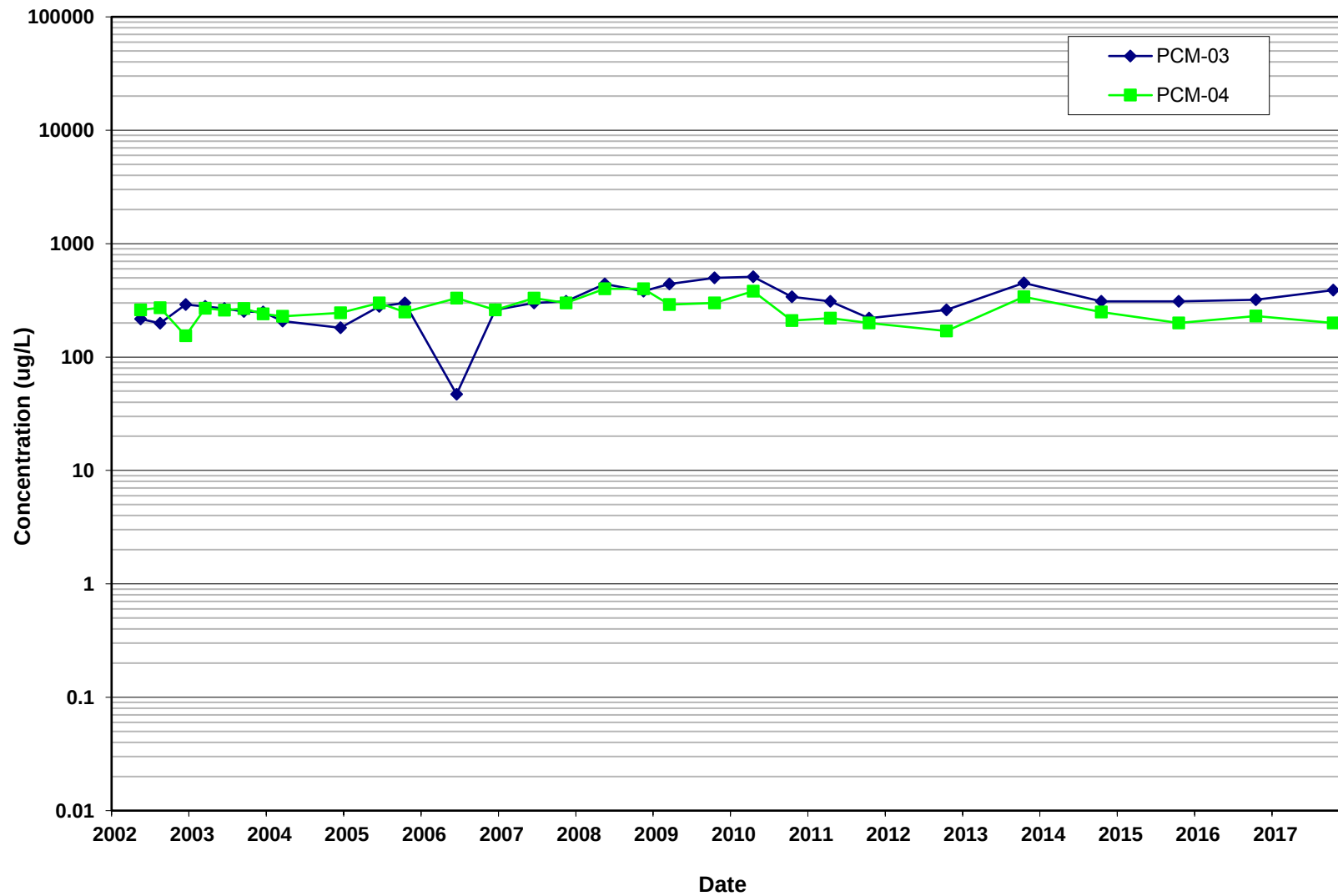


figure E.2
CONCENTRATION OF 1,4-DICHLOROBENZENE vs. TIME
102ND STREET LANDFILL

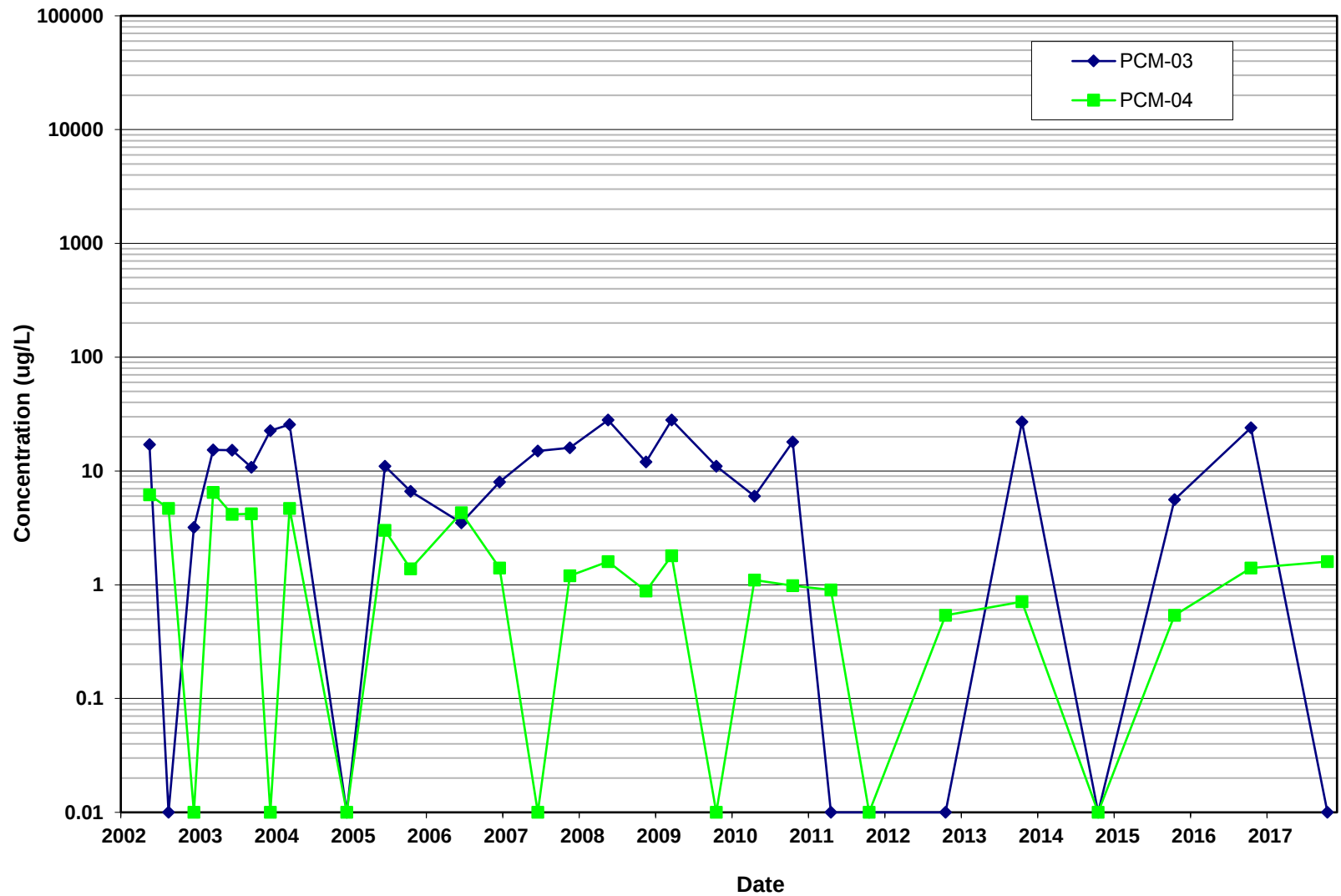


figure E.3

CONCENTRATION OF 2,4-DICHLOROPHENOL vs. TIME
102ND STREET LANDFILL



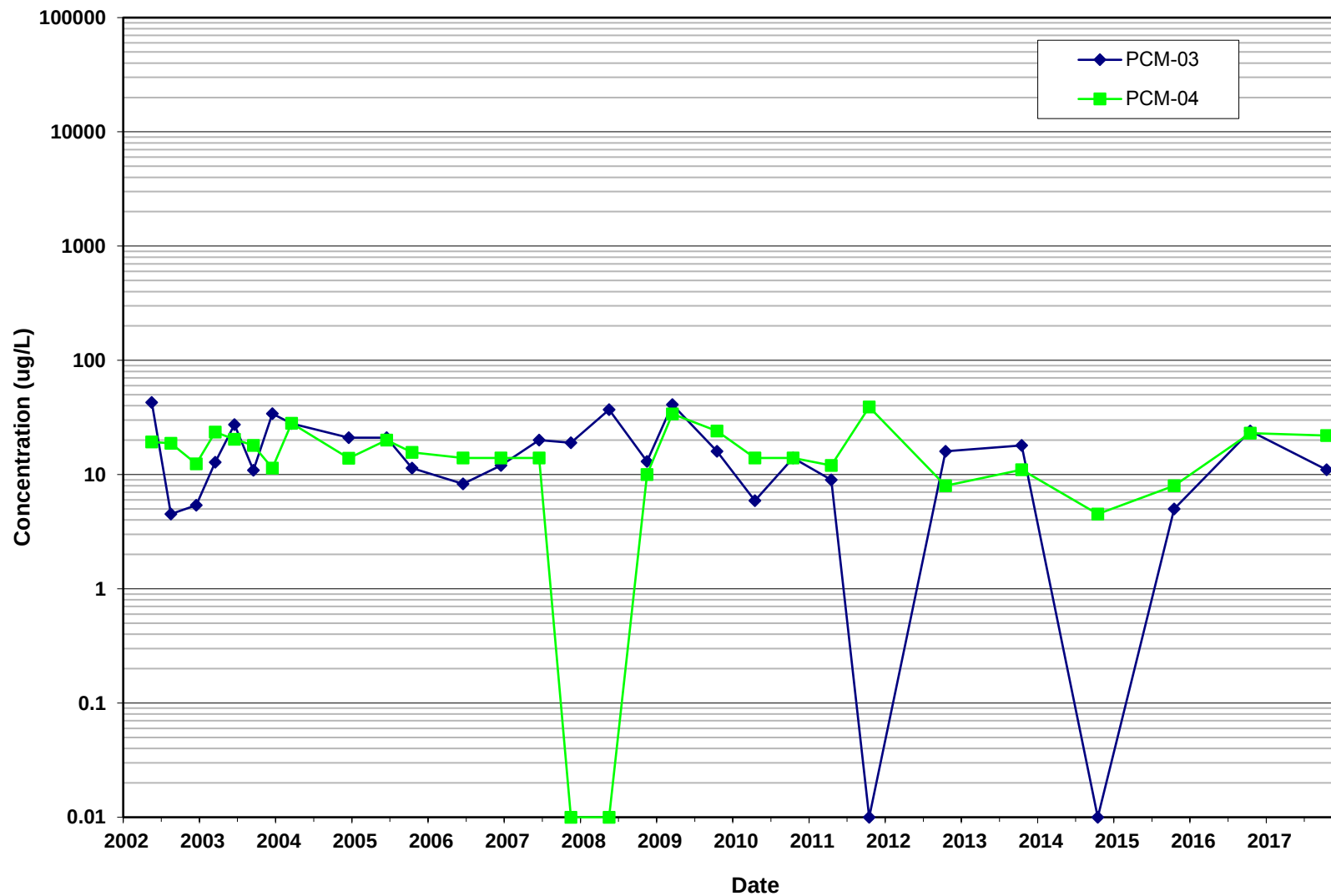


figure E.4
CONCENTRATION OF 2-CHLOROPHENOL vs. TIME
102ND STREET LANDFILL

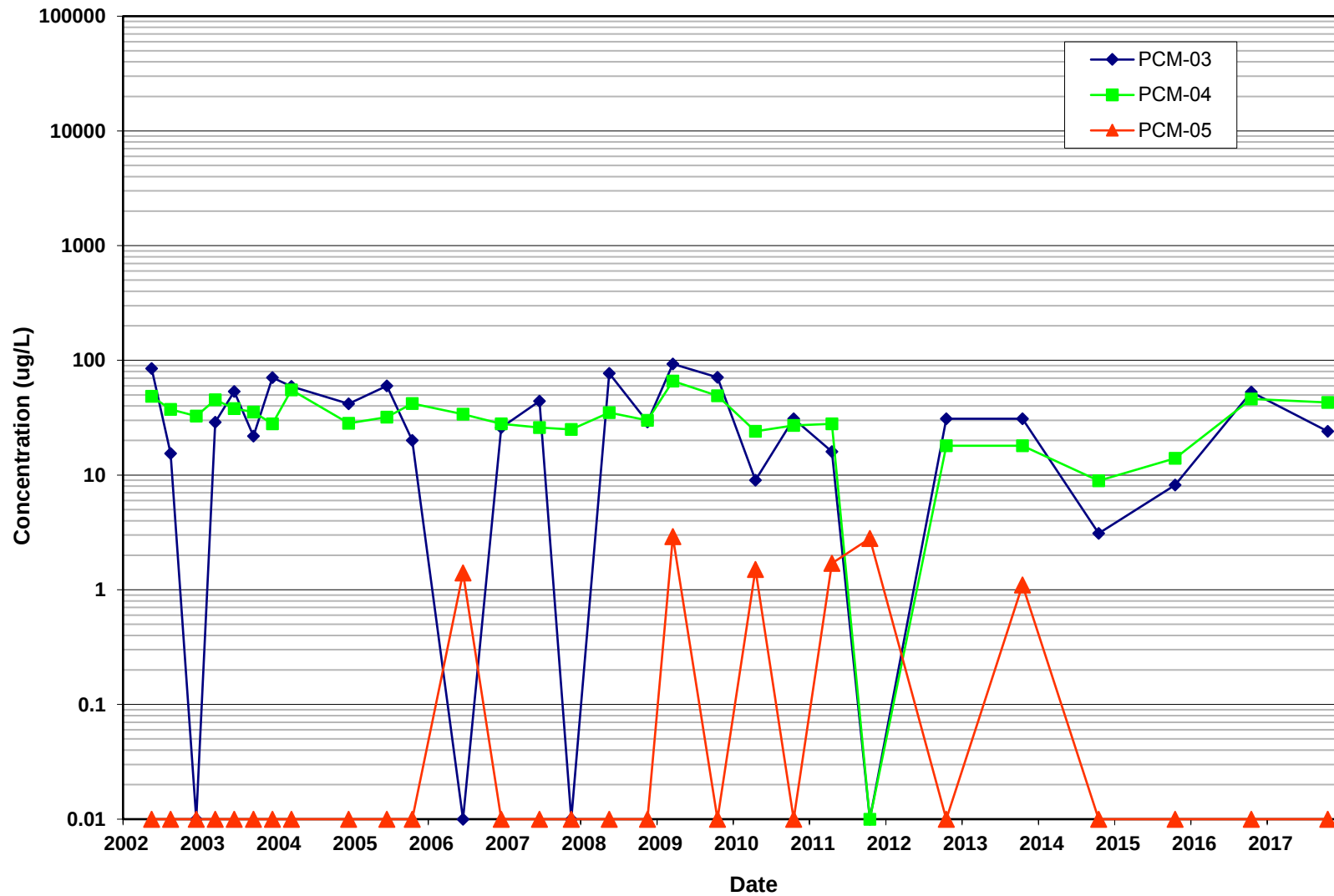


figure E.5
CONCENTRATION OF 4-CHLOROPHENOL vs. TIME
102ND STREET LANDFILL



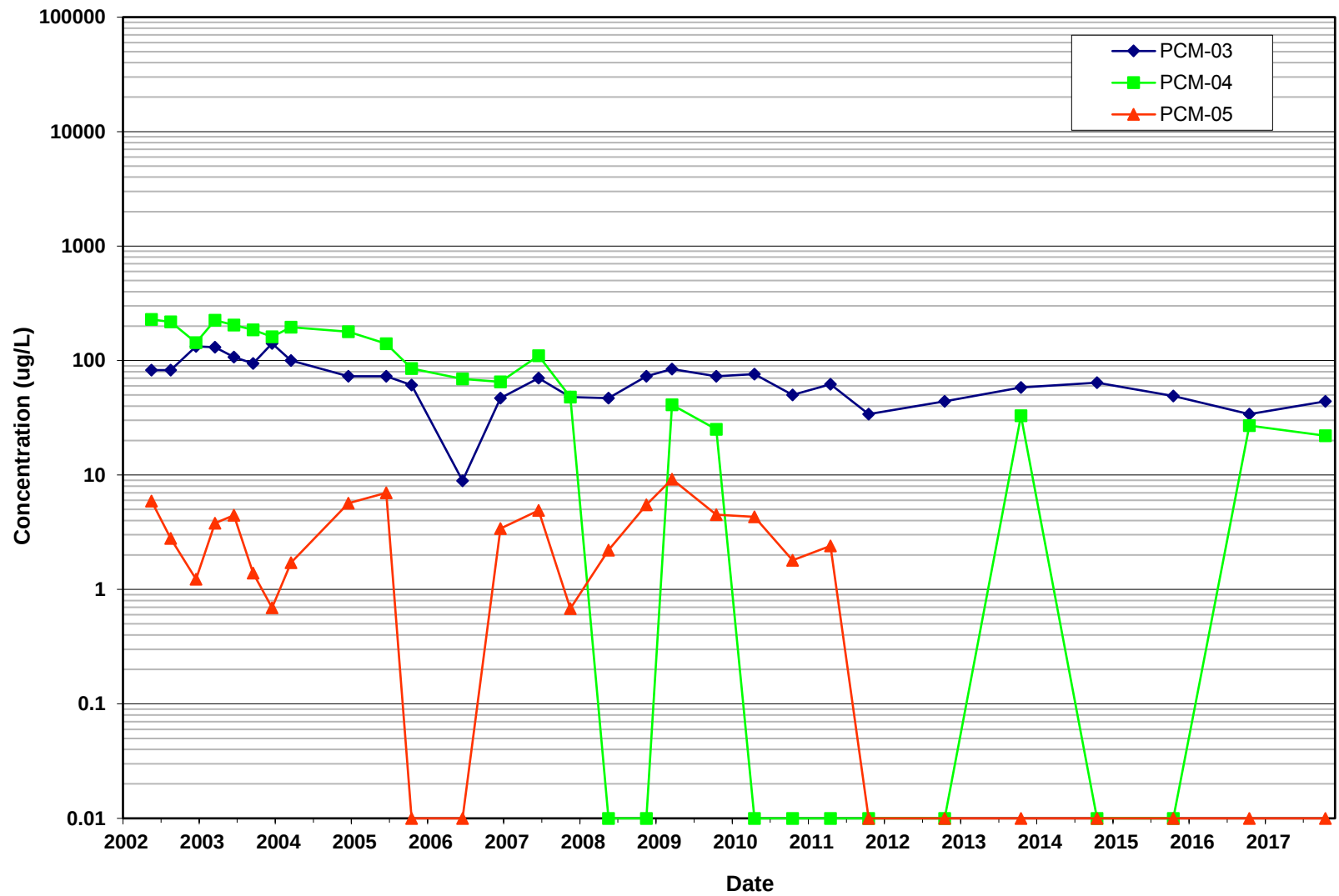


figure E.6
CONCENTRATION OF BENZENE vs. TIME
102ND STREET LANDFILL

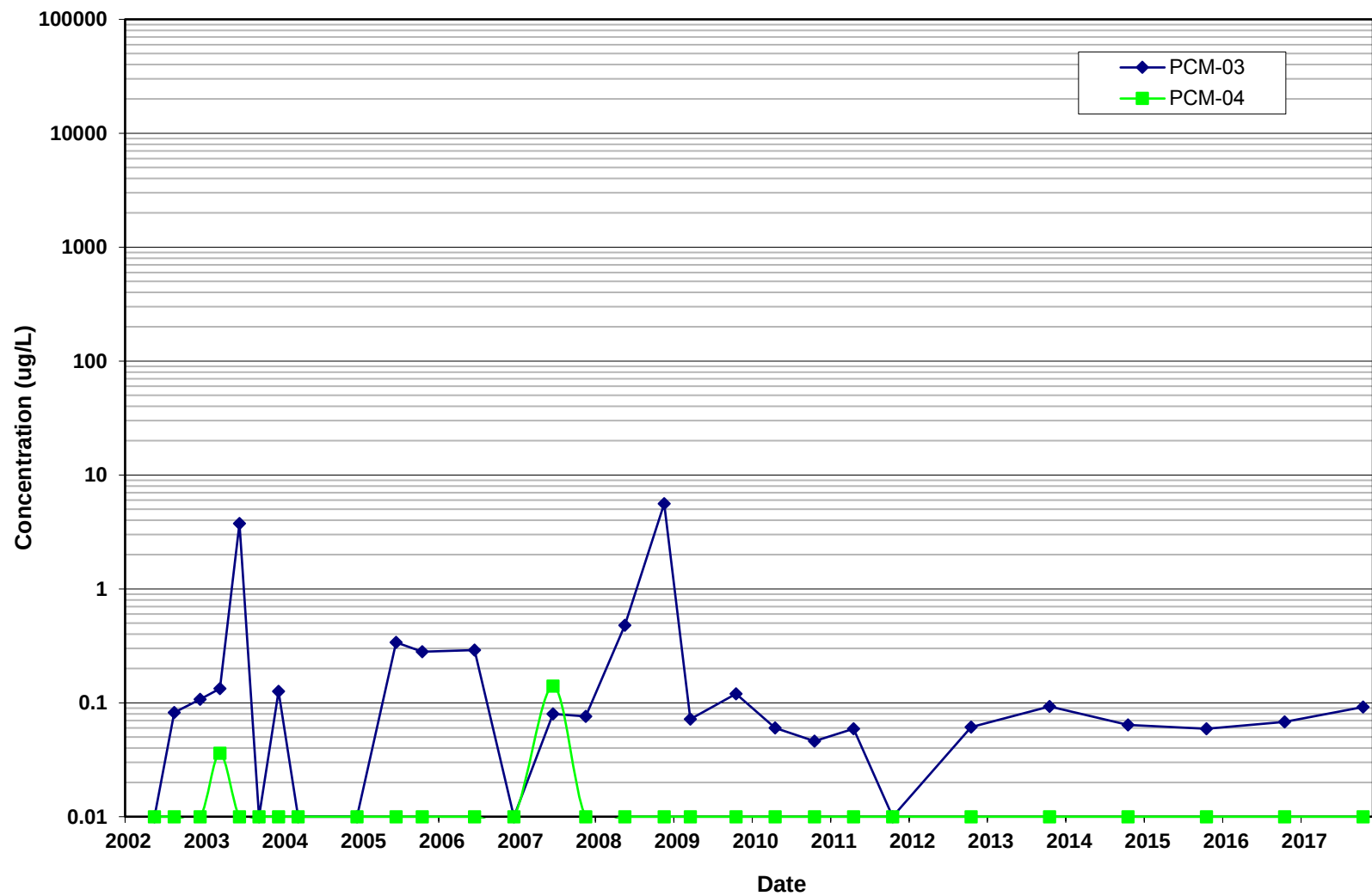


figure E.7
CONCENTRATION OF BETA-BHC vs. TIME
102ND STREET LANDFILL



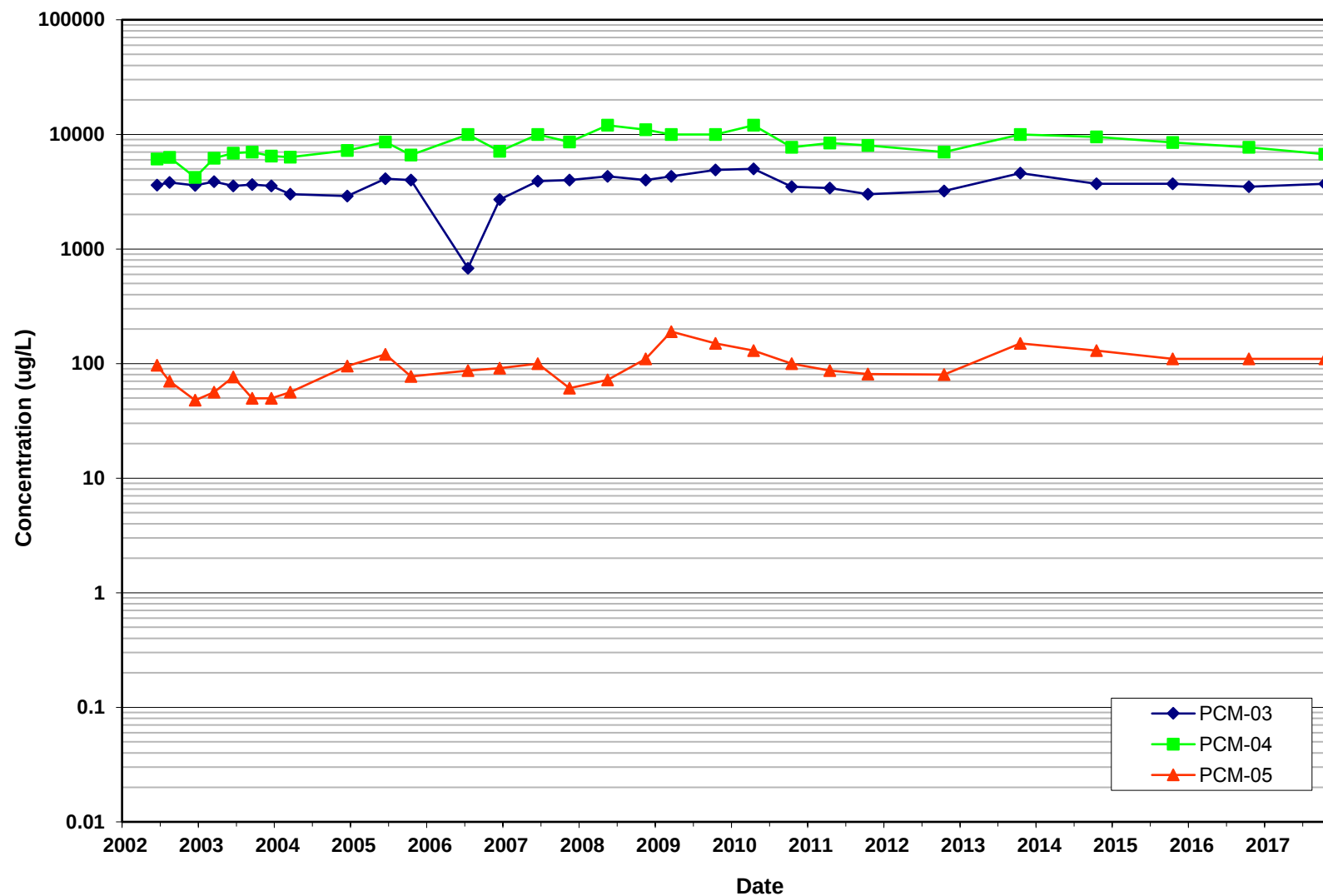


figure E.8
CONCENTRATION OF CHLOROBENZENE vs. TIME
102ND STREET LANDFILL

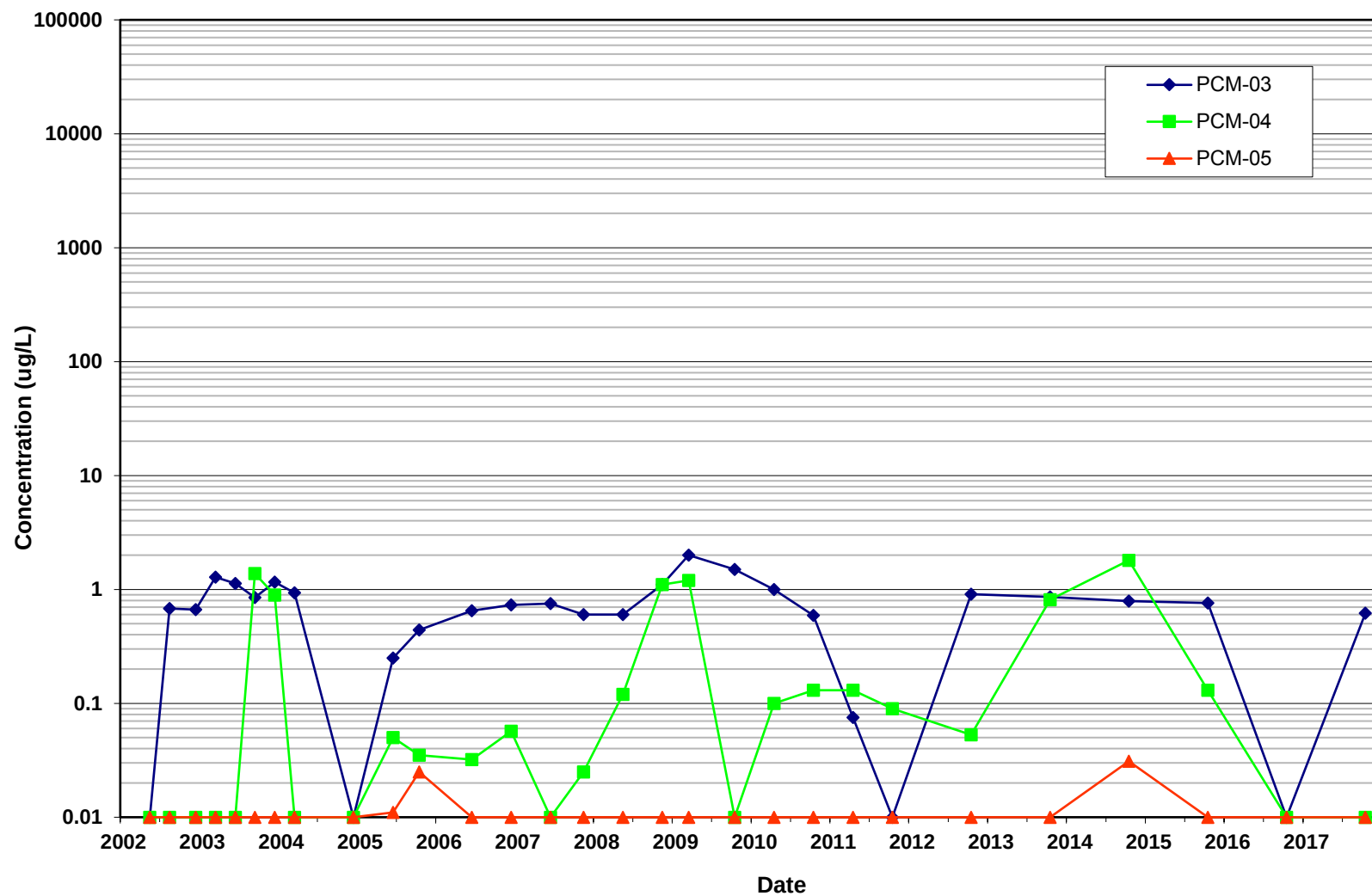


figure E.9
CONCENTRATION OF DELTA-BHC vs. TIME
102ND STREET LANDFILL



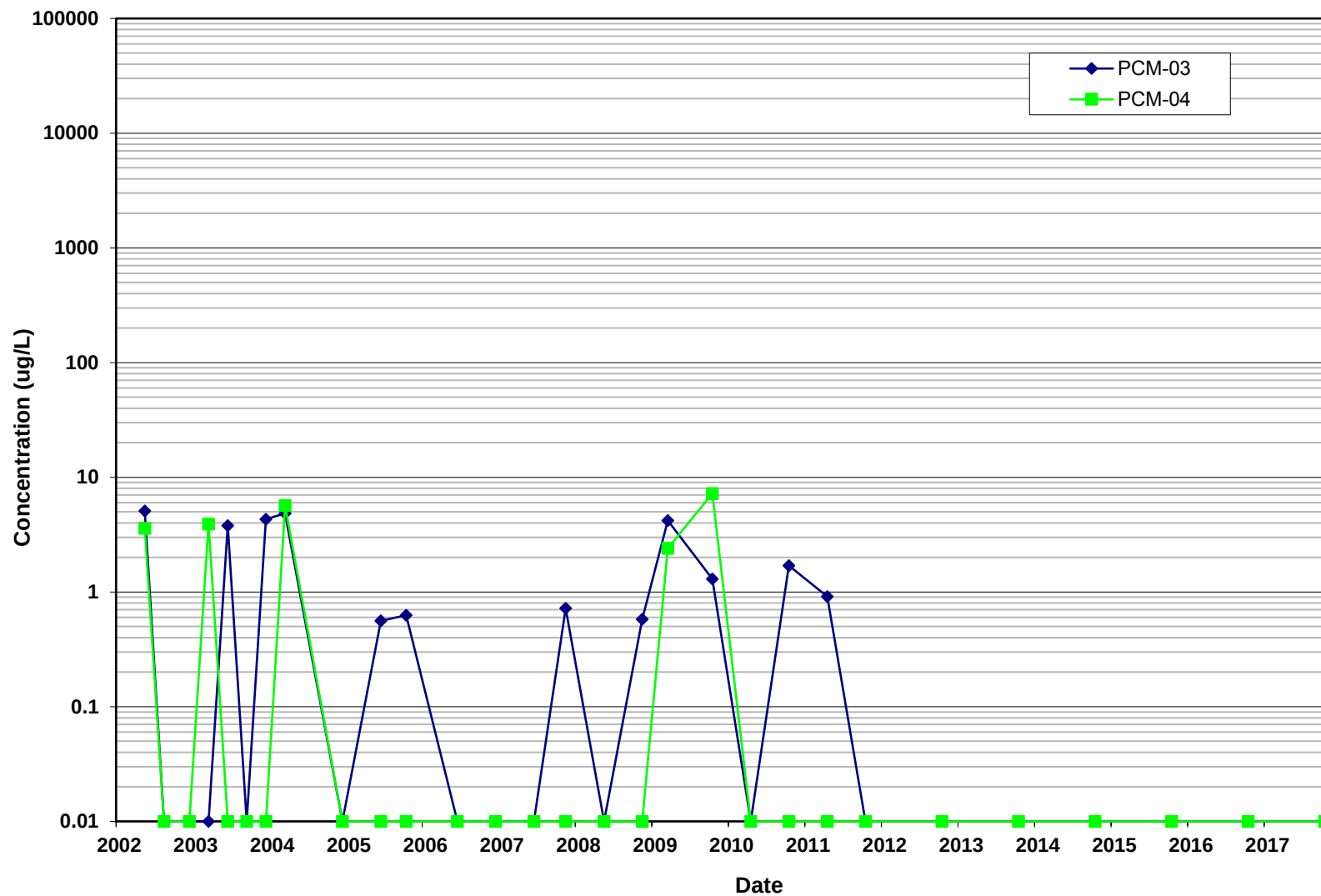


figure E.10
CONCENTRATION OF PHENOL vs. TIME
102ND STREET LANDFILL

Appendix F

Monitoring Well Purge Records

SAMPLE ID# PCM-08-1017

TIME 1005

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53716-50-410Date: 10/17/17
Personnel: SG

Monitoring Well Data:

Well No.: PCM-08
Vapour PID (ppm):
Measurement Point:
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)⁽¹⁾:
Well Diameter, D (cm/in):
Well Screen Volume, V_s (L)⁽²⁾:
Initial Depth to Water (m/ft): 8.85

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
0928	100	9.28	0.45	14.6	1.47	49.5	0.86	6.90	-20.8		
0933	98	9.64	0.81	14.5	1.45	58.5	0.54	7.05	-5.6		
0938		9.99	1.16	14.7	1.34	14.4	0.52	7.07	27.9		
0943		10.32	1.49	14.8	1.27	4.83	1.04	7.00	65.8		
0948	100	10.53	1.70	14.9	1.21	3.61	1.84	6.98	89.4		
0953		10.72	1.89	15.0	1.21	3.36	2.18	6.97	97.6		
0958		10.75	1.92	15.1	1.20	3.41	2.21	6.97	101.7		
1003	100	10.90		15.0	1.20	3.11	2.31	6.97	107.3		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

INST CONTROL #5

YSI - GSH06214

W/L METER - GSH06216

TURBIDIMETER - GSH06215

START PURGE @ 0925

Shawn Gardner

SAMPLE ID# PCM-09-1017

TIME 1325

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

* PARTIAL

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53710-50-410Date: 10/17/17
Personnel: SG

Monitoring Well Data:

Well No.: PCM-09
Vapour PID (ppm):
Measurement Point:
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)⁽¹⁾:
Well Diameter, D (cm/in):
Well Screen Volume, V_s (L)⁽²⁾:
Initial Depth to Water (m/ft): 8.70

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1258	SL	8.85	0.15	18.1	0.98	35.7	3.23	7.64	-122.5		
1303	SL	8.85	0.15	17.9	0.83	25.1	4.56	7.45	-102.2		
1308		9.02	0.32	17.6	0.77	19.4	4.89	7.40	-96.0		
1313		9.12	0.42	17.7	0.73	16.6	5.11	7.38	-92.1		
1318	SL	9.26	0.56	17.8	0.71	13.4	5.12	7.42	-88.6		
1323		9.34	0.64	17.8	0.70	8.6	5.09	7.37	-86.2		
* WELL WENT DRY WHILE SAMPLING SHIPPING A PARTIAL SET											
3x 40ML VOC											
1x 500ML AS/MEC											
1x 1L SVOC											
1x 1L BHC											

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where r ($r=D/2$) and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ± 0.005 mS/cm or where conductivity >1 mS/cm ± 0.01 mS/cm.

INST CONTROL #5

YSI - 6SH06214

W/L METER - 6SH06216

TURBIDIMETER - 6SH06215

START PURGE @ 1254

Shawn Waldner

SAMPLE ID# PCBM-03-1017
BLIND DUPLICATE - PCM-12-1017

TIME 1110
TIME 1110

Monitoring Well Record for Low-Flow Purging (Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53716-50-410

Date: 10/17/17
Personnel: _____

Monitoring Well Data:

Well No.: PCBM-03

Vapour PID (ppm): _____

Measurement Point: _____

Constructed Well Depth (m/ft): _____

Measured Well Depth (m/ft): _____

Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): _____ 14.56

[illegible]

Notes:

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
 - (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r ($r = D/2$) and L are in cm.
For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
 - (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
 - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
 - (5) For conductivity, the average value of three readings $< 1 \text{ mS/cm} \pm 0.005 \text{ mS/cm}$ or where conductivity $> 1 \text{ mS/cm} \pm 0.01 \text{ mS/cm}$.

INST CONTROL #5

YSI - GSHOL214

bid
W/L METER - GSHOLZLO

TURBIDIMETER - GSHO 6215.

GHD Form SP-01 – Revision 0 – July 1, 2015

START PURGE @ 1028

Stam Hardner

SAMPLE ID# PCM-02-1017

TIME 1350

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53716-50-410Date: 10/18/17
Personnel: SG

Monitoring Well Data:

Well No.: PCM-02
Vapour PID (ppm): _____
Measurement Point: _____
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____Saturated Screen Length (m/ft): _____
Depth to Pump Intake (m/ft)⁽¹⁾: _____
Well Diameter, D (cm/in): _____
Well Screen Volume, V_s (L)⁽²⁾: _____
Initial Depth to Water (m/ft): 10.89

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1304	100	11.36	0.47	14.9	1.32	18.9	3.54	7.88	-48.9		
1309	100	11.44	0.55	14.9	1.18	11.7	0.83	7.58	-54.1		
1314		11.49	0.60	15.0	1.13	7.61	0.50	7.59	-58.6		
1319		11.52	0.63	15.0	1.11	7.29	0.36	7.60	-62.6		
1324	100	11.54	0.65	14.9	1.10	8.02	0.32	7.68	-65.9		
1329		11.55	0.66	14.9	1.10	7.87	0.27	7.64	-67.5		
1334		11.56	0.67	14.9	1.09	6.49	0.21	7.67	-69.4		
1339		11.56	0.67	14.9	1.09	7.27	0.20	7.69	-71.0		
1344	100	11.57	0.68	14.9	1.08	5.50	0.21	7.67	-71.7		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

INST CONTROL #8

YSI-6SH06214

W/L METER-6SH06216

TURBIDIMETER-6SH06215

START PURGE @ 1258

Shawn Haidun

GHD Form SP-01 – Revision 0 – July 1, 2015

SAMPLE ID# PCM-10-1017

TIME 0925

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53710-50-410Date: 10/18/17
Personnel: SG

Monitoring Well Data:

Well No.: PCM-10
Vapour PID (ppm):
Measurement Point:
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)⁽¹⁾:
Well Diameter, D (cm/in):
Well Screen Volume, V_s (L)⁽²⁾:
Initial Depth to Water (m/ft): 12.75

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
0834	100	13.11	0.36	12.6	2.90	5.41	0.99	6.14	166.3		
0839		13.30	0.55	12.7	2.87	2.29	0.69	6.18	160.6		
0844	100	13.42	0.67	12.8	2.69	1.68	0.64	6.14	59.8		
0849		13.54	0.79	12.9	2.46	2.72	0.54	6.17	55.3		
0854		13.68	0.93	13.0	2.31	3.08	0.48	6.20	51.3		
0859	100	13.79	1.04	13.0	2.21	3.05	0.43	6.28	45.6		
0904		13.85	1.10	13.0	2.14	3.11	0.44	6.28	42.4		
0909		13.95	1.20	12.9	2.08	3.49	0.33	6.33	31.2		
0914		14.04	1.29	13.0	2.00	3.23	0.33	6.36	24.0		
0919	100	14.11	1.36	13.0	1.99	3.33	0.34	6.39	21.6		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r ($r = D/2$) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

INST CONTROL #5

YSI-GSH06214

W/L METER-GSH06216

TURBIDIMETER-GSH06215

START PURGE @ 0825

Sham Harsaur

TIME

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53716-50-410

Date: 10/19/17
Personnel: SG

Monitoring Well Data:

Well No.: PCM-06
Vapour PID (ppm): _____
Measurement Point: _____
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽⁴⁾: _____
 Initial Depth to Water (m/ft): _____ 12.93

[illegible]

Notes:

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
 - (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r ($r = D/2$) and L are in cm.
For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
 - (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
 - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
 - (5) For conductivity, the average value of three readings < 1 mS/cm ± 0.005 mS/cm or where conductivity > 1 mS/cm ± 0.01 mS/cm.

INST CONTROL HS

YSI - NFO 6156

W/L METER - 65H06216

TURBIDIMETER - GSHO6Z15

START PURGE @ 1237

Sham Vaidya

TIME 1100

Sham Warner

SAMPLE ID # PCM-05-1017

TIME 1500

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53716-50-410Date: 10/19/17
Personnel: SG

Monitoring Well Data:

Well No.: PCM-05
Vapour PID (ppm): _____
Measurement Point: _____
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____Saturated Screen Length (m/ft): _____
Depth to Pump Intake (m/ft)⁽¹⁾: _____
Well Diameter, D (cm/in): _____
Well Screen Volume, V_s (L)⁽⁴⁾: _____
Initial Depth to Water (m/ft): 11.79

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required:				±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1359	60	12.35	0.36	16.40	3.66	17.5	0.73	6.76	-211		
1404		12.42	0.63	16.46	3.64	10.6	0.45	6.73	-209		
1409	100	12.47	0.68	16.40	3.64	9.1	0.40	6.75	-205		
1414		12.49	0.70	16.49	3.63	59.3	0.43	6.76	-201		
1419		12.53	0.74	16.38	3.62	42.9	0.40	6.77	-199		
1424	68	12.58	0.79	16.31	3.64	58.0	0.39	6.77	-200		
1429		12.63	0.84	16.28	3.63	45.6	0.37	6.78	-199		
1434		12.66	0.87	16.20	3.61	20.8	0.36	6.77	-198		
1439	70	12.71	0.92	16.15	3.60	17.3	0.34	6.78	-198		
1444		12.80	1.01	16.10	3.59	11.6	0.33	6.78	-197		
1449		12.84	1.05	16.07	3.59	13.3	0.32	6.78	-198		
1454		12.89	1.10	16.05	3.59	11.5	0.32	6.78	-198		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where $r = (D/2)$ and L are in cm.
- For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min. Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

INST CONTROL #5

YSI NF0156

W/L METER - GSH06216

TURBIDIMETER - GSH06215

START PURGE @ 1345

Shawn Gardner

SAMPLE ID# PCM-04-1017

TIME 1235

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53716-SD-410Date: 10/23/17
Personnel: SG

Monitoring Well Data:

Well No.: PCM-04
Vapour PID (ppm):
Measurement Point:
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)⁽¹⁾:
Well Diameter, D (cm/in):
Well Screen Volume, V_s (L)⁽²⁾:
Initial Depth to Water (m/ft): 11.45

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
			Precision Required:	±3 %	±0.005 or 0.01 ⁽⁵⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1141	100	11.80	0.35	16.19	5.31	536	1.34	6.24	-142		
1146		11.83	0.38	16.29	5.28	513	0.69	6.22	-145		
1151	100	11.89	0.44	16.46	5.25	460	0.61	6.22	-146		
1156		11.90	0.45	16.56	5.13	334	0.52	6.24	-146		
1201		11.92	0.47	16.45	5.09	284	0.46	6.25	-147		
1206	100	11.95	0.50	16.74	5.01	226	0.44	6.25	-148		
1211		11.96	0.51	16.80	4.98	191	0.44	6.25	-147		
1216		11.97	0.52	16.75	4.96	142	0.42	6.25	-146		
1221	100	11.98	0.53	16.71	4.94	122	0.41	6.25	-146		
1226		11.98	0.53	16.69	4.91	117	0.40	6.25	-147		
1231		11.99	0.54	16.64	4.90	112	0.40	6.25	-147		

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches.
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings < 1 mS/cm ± 0.005 mS/cm or where conductivity > 1 mS/cm ± 0.01 mS/cm.

INST CONTROL HS

HORIBA-NFOLISU

W/L METER-GSHOL216

TURBIDIMETER-GSHOL215

START PURGE @ 1130

Sharon Waldner

TIME 1420

Monitoring Well Record for Low-Flow Purging (Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53746-50-410

Date: 10/23/17
Personnel: 56

Monitoring Well Data:

Well No.: PCM-03

Vapour PID (ppm): _____

Measurement Point: _____

Constructed Well Depth (m/ft): _____

Measured Well Depth (m/ft): _____

Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____

Depth to Pump Intake (m/ft)⁽¹⁾: _____

Well Diameter, D (cm/in): _____

Well Screen Volume, V_s (L)⁽⁴⁾: _____

Initial Depth to Water (m/ft): 12.87

[illegible]

Notes:

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
 - (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r (=D/2)$ and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
 - (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
 - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s .
 - (5) For conductivity, the average value of three readings $<1 \text{ mS/cm} \pm 0.005 \text{ mS/cm}$ or where conductivity $>1 \text{ mS/cm} \pm 0.01 \text{ mS/cm}$.

INST CONTROL HS

HORIBA - NFOU156

W/L METER - GS406216

TURBIDIMETER - GSHOLZIS

START PURGE @ 1343

Shaima Naider

TIME 0915

Monitoring Well Record for Low-Flow Purging (Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53716-SD-410

Date: 10/23/17
Personnel: SE

Monitoring Well Data:

Well No.: PCBM-02
Vapour PID (ppm): _____
Measurement Point: _____
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft):
 Depth to Pump Intake (m/ft)⁽¹⁾:
 Well Diameter, D (cm/in):
 Well Screen Volume, V_s (L)⁽²⁾:
 Initial Depth to Water (m/ft):

[illegible]

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s .
- (5) For conductivity, the average value of three readings $<1 \text{ mS/cm} \pm 0.005 \text{ mS/cm}$ or where conductivity $>1 \text{ mS/cm} \pm 0.01 \text{ mS/cm}$.

INST CONTROL H.S.

HORIBA-NFOU21L
W/L METER, GSHOU21L

TURBIDIMETER - GSHD6215

START PURGE @ 0836

Shawn Warner

TIME 1445

Monitoring Well Record for Low-Flow Purging (Form SP-09)

Project Data:

Project Name: 102ND ST ANNUAL
Ref. No.: 53716-50-410

Date: 10/23/17
Personnel: SS

Monitoring Well Data:

Well No.: PCBM-01
Vapour PID (ppm): _____
Measurement Point: _____
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 12.50

[illegible]

Notes:

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
 - (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2) \cdot L$ in mL, where r ($r=D/2$) and L are in cm.
For Imperial units, $V_s = \pi(r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
 - (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
 - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
 - (5) For conductivity, the average value of three readings $<1 \text{ mS/cm} \pm 0.005 \text{ mS/cm}$ or where conductivity $>1 \text{ mS/cm} \pm 0.01 \text{ mS/cm}$.

INST CONTROL #8

HORIBA-NFOL15L

id W/L METER-GSHOL21L

TURBIDIMETER - 6SH66215

START PURGE @ 1400

Shawn Walden

www.ghd.com

