



# Operation and Monitoring Report

June 2022 to May 2023

City of North Tonawanda

7 July 2023, Revised October 16, 2023

→ The Power of Commitment



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# 1. Introduction

This report is the 22<sup>nd</sup> annual Operation and Monitoring Report (O&M Report) for the remedial actions constructed at the Gratwick-Riverside Park Site (Site) located in North Tonawanda, New York. This report covers the period from June 2022 to May 2023 and was prepared pursuant to Section 7.0 of the report entitled "Operation and Maintenance Manual" (O&M Manual) dated November 9, 2022. All O&M activities have been performed in accordance with the methods and frequencies specified in the O&M Manual. Groundwater is monitored annually in six wells and an additional six wells are monitored once every 2 years. The surface water quality of the Niagara River adjacent to the Site is not impacted by the Site and is no longer monitored. The collected groundwater discharged from the Site during this reporting period was monitored semi-annually in accordance with the City of North Tonawanda Wastewater Discharge Permit (effective March 1, 2022). This permit was recently updated, and a copy of this version is included in Appendix A (effective September 19, 2023). The wells, manholes, wet wells, and storm sewer outfalls that comprise the monitoring network are shown on Figure 2.1. The permeable soil cap at the Site and its various cover systems (grass and natural regeneration area) are shown on Figures 2.2 and 2.3.

## 2. Groundwater Withdrawal System (GWS)

Full-time operation of the Groundwater Withdrawal System (GWS) at the Site started on May 4, 2001. The objectives of the GWS are to:

- i.) Achieve and maintain an inward gradient from the Niagara River toward the GWS.
- ii.) Achieve and maintain an upward gradient from the fill alluvium layer beneath the GWS.

In order to determine whether the objectives are being met, hydraulic and chemical monitoring programs have been developed. These programs include Site groundwater and GWS effluent monitoring. The wells, manholes, wet wells, and storm sewer outfalls that comprise the monitoring network are shown on Figure 2.1. The monitoring programs are described in the following subsections.

### 2.1 Hydraulic Monitoring

Hydraulic monitoring consists of the collection of water levels in monitoring wells and manholes and River water levels at the storm sewer outfalls. These data used to determine the vertical and horizontal gradients for the groundwater.

The water levels in four GWS manholes and in the River were monitored to confirm that an inward gradient exists. The water levels in five GWS manholes and in four monitoring wells installed near the GWS alignment in the materials directly overlying the confining unit were monitored to confirm that an upward gradient exists. The specific manholes and monitoring wells used to determine the horizontal and vertical gradients are listed in Table 2.1.

Groundwater elevations are measured on a monthly basis. The measured water levels for the time period June 2013 through May 2023 are provided in Table 2.2. Hydrographs for the locations monitored are presented in Appendix B. The horizontal and vertical gradients for this reporting period are provided in Tables 2.3 and 2.4, respectively. The water levels and horizontal and vertical gradients to May 2012 were previously provided and thus are not provided in this report.

The results for the horizontal gradient evaluation show that:

- i.) Inward horizontal gradients were achieved by May 11, 2001, within 1 week of the start of pumping the GWS.
- ii.) The inward gradients were maintained for the next 14 years (into 2015) except for a few locations in isolated areas of the GWS.

Since 2015, there have been three exceptions as follows:

- i.) the area of River North/MH-2 (November 2015 through June 2020)
- ii.) the area of River Middle/MH-8 (March 2016 through August 2020)
- iii.) the area of River South/MH-12 (December 2019 through March 2020)

As indicated in previous Operation & Maintenance Reports, short periods of outward gradient (even 365 days) do not adversely affect the effectiveness of the remedy because:

- i.) The outward gradients occurred over only a portion of the barrier wall.
- ii.) The 36-inch barrier wall is 6 inches thicker than the design thickness thereby providing extra protection.
- iii.) Any outward migration of Site groundwater into the barrier wall during the periods of outward gradient is more than offset by the inward migration of river water into the barrier wall during the long periods of inward gradient.
- iv.) Since 2015, the groundwater level on the upgradient side of the barrier wall was never higher than the elevation of the top of the barrier wall (i.e., 568.5 ft amsl) except in the immediate vicinity of MH-2 in April 2018, April through June 2019, and from December 2019 through May 2020; at MH-14 from July through August 2016, May 2019, and January through March 2020; and at MH-16 from January through May 2020 and July 2021, when water levels during these months ranged between 568.52 to 568.90 ft amsl. However, the water elevation decreased in MH-2 below the top elevation of the barrier wall to 566.9 ft amsl or lower following cleaning of this section of collection pipe on June 18, 2020. Thus, no significant overtopping occurred except for short sections of the barrier wall.

As outward gradients have in some places persisted for several years, investigations were conducted in 2020 into the causes and potential remedies of high water levels present in the inward wells. As a result, between June and December 2020, cleaning of the GWS collection pipe and forcemain was performed. Further details are provided in the 2021 O&M Report. These activities have restored inward gradients at all locations; River North/MH-2 as of July 2020, River Middle/MH-8 as of September 2020, and River South/MH 12 as of May 2020.

The results for the horizontal gradient evaluation showed that the horizontal gradients during the June 2022 through May 2023 reporting period were continually inward for all four monitoring locations, with the exception of the following:

- River North/MH2 in July 2022; however, this gradient was inward for the remainder of the reporting period
- River Middle/MH8 in March, April, and May 2023
- River South/MH12 in March 2023; however, this gradient was inward for the remainder of the reporting period.

The water levels in the above manholes during the above events were more than 2 feet below the top of the barrier wall.

The results for the vertical gradient evaluation showed that the vertical gradients during the June 2022 through May 2023 reporting period were continually upward for all four monitoring locations.

## 2.2 Groundwater Quality Monitoring

Groundwater quality monitoring consists of the collection of water samples from on-Site overburden monitoring wells (OGC-1 through OGC-8 and MW-6 through MW-9) and the analysis of these samples to determine the concentrations of chemicals in the groundwater. The purpose of the groundwater quality monitoring program is to monitor the anticipated improvement in the quality of the overburden groundwater:

- i.) Between the barrier wall and the River (OGC-1 through OGC-8)
- ii.) In the fill/alluvium beneath the GWS (MW-6 through MW-9)

The monitoring wells designated as MWs are located on the inside of the barrier wall and monitoring wells designated OGCS are located between the barrier wall and the river.

Groundwater quality monitoring locations are presented on Figure 2.1 and the analytical parameters and frequency are listed in Table 2.5.

As approved by the NYSDEC on October 9, 2018, the current sampling frequency from May 2019 to present was:

Annual	Once Every 2 Years (Even Years)
MW-6	MW-7
MW-8	OGC-1
MW-9	OGC-2
OGC-3	OGC-4
OGC-6	OGC-5
OGC-7	OGC-8

## 2.2.1 Sample Results

A summary of compounds detected in the groundwater samples for this reporting period is provided in Table 2.6 and pH levels are provided in Table 2.7. Purge logs for the sampling event are presented in Appendix C. Laboratory analytical reports are presented in Appendix D. The QA/QC Review/ Data Usability Summary of the April 2023 groundwater results are included in Appendix E. The electronic deliverables were provided to the NYSDEC by email on July 7, 2023. The samples were collected on April 28, 2023; however, due to a lab error, MW-6 was resampled on June 16, 2023 and analyzed for semi-volatile organic compounds (SVOCs) only.

Groundwater concentrations are compared to Class GA Groundwater Standards in Table 2.6. Some reporting limits were higher than the Class GA Groundwater Standards during this sampling event due to the following:

- Matrix interference (MW-9, MW-8, OGC-6, MW-6 volatile organic compounds [VOCs])
- Matrix interference (MW-9, OGC-7, and OGC-6 SVOCs)
- Dilution to bring concentration to within calibration range (MW-8 and OGC-6 SVOCs)
- Dilution due to abundance of analytes (OGC-6 SVOCs)

To evaluate the trends in the groundwater chemistry and evaluate the appropriate frequency of future sampling, the VOCs and SVOCs were summed and plotted on Figures 2.4 through 2.15 for each of the 12 monitoring wells included in the program. It is believed that the sum of the VOCs (i.e., TVOCs) and SVOCs (i.e., TSVOCS) best represent the trends in the groundwater chemistry.

Review of the TVOC and TSVOCS concentrations for the 6 wells sampled in 2023 show the following trends:

- i.) TVOCs:
  - Low level (i.e., no individual parameters with concentrations greater than Class GA standards) in one of the six wells.
  - Relative constant concentrations in all six wells sampled.
- ii.) TSVOCS:
  - Low level (i.e., no individual parameters with concentrations greater than Class GA standards) in one of the six wells sampled
  - Relatively constant concentrations with random fluctuations in the six wells sampled except for MW-9 and OGC-6 as discussed below

The TSVOCS concentrations in MW-9 continued to decreased (180.4 µg/L in April 2023, 259.6 µg/L in April 2022, compared to 425.7 µg/L in April 2021). The TSVOCS concentrations increased in OGC-6 from typically less than 10 µg/L to 1,679.3 µg/L, primarily due to phenol detected at 1,500 µg/L. The reason for this increase is unknown.

In general, the number of wells with no individual compound concentrations above Class GA standards and decreasing or constant but fluctuating low level concentrations, shows that the groundwater is being remediated.

Additional description of the TVOC and TSVOCS concentrations is provided in the following paragraphs.

### ***Monitoring Wells between Barrier Wall and River***

The TVOC concentrations for OGC-1 on Figure 2.8 show that the concentrations since November 2003 ranged between non-detect and 7.4 µg/L. The TSVOC concentrations since November 2003 have fluctuated between non-detect and 3 µg/L. No individual parameters were detected in the April 2022 sampling event.

The TVOC concentrations for OGC-2 on Figure 2.9 have been non-detect since May 2006. The TSVOC concentrations were all non-detect since monitoring of the remedy started except for the May 2014 sample which had a TSVOC concentration of 0.79 µg/L. No individual parameters with were detected in the April 2022 sampling event.

The TVOC concentrations for OGC-3 shown on Figure 2.10 were less than 11 µg/L between May 2009 and May 2017 except for May 2014, which had a concentration of 85.1 µg/L. The May 2018 sample result was 23.5 µg/L, and the concentration has since decreased to 1.4 µg/L in 2022. The TVOC concentration in 2023 was 5.67 µg/L. The TSVOC concentrations have decreased from 300 µg/L in November 2003 to 48.3 µg/L in April 2022 and 53.6 µg/L in April 2023. No parameters were detected above Class GA standards except for phenol but the concentration has been generally decreasing over time.

The TVOC concentrations for OGC-4 shown on Figure 2.11 fluctuated between non-detect and 6 µg/L for the time period from November 2002 to May 2010 and were non-detect since May 2010 until April 2022 with the exception of the May 2016 sample (3.6 µg/L). The TSVOC concentrations have fluctuated widely but have continually decreased since May 2004 with a non-detect concentrations since May 2018. The single compound responsible for the higher historic concentrations was phenol. No individual parameters with were detected in the April 2022 sampling event.

The TVOC concentrations for OGC-5 shown on Figure 2.12, ranged from non-detect to 5 µg/L since November 2003 (except for May 2008 at 5.6 µg/L and May 2018 at 9.1 µg/L). The TSVOC concentrations ranged from non-detect to 2.3 µg/L since February 2003. No individual parameters with concentrations greater than Class GA standards were detected in the April 2022 except for benzene (1.2 µg/L).

The TVOC concentrations for OGC-6 shown on Figure 2.13 have continually decreased from 1,655 µg/L in the May 2013 sample to 51.1g/L in the April 2023 sample. The TSVOC concentrations decreased from 157 µg/L in May 2008 to 3.3 µg/L in the April 2022 sample but increased to 1,679.3 µg/L in April 2023. As indicated above, the increase is primarily due to a phenol concentration on 1,500 µg/L. The reason for this increase is unknown. Data from 2024 sampling event will determine if this is an anomaly or an issue that requires additional monitoring.

The TVOC concentrations for OGC-7 shown on Figure 2.14 have decreased from 90 µg/L in May 2004 to 8.71 µg/L in the April 2022 and 9.76 µg/L in April 2023. The TSVOC concentrations have been less than 2 µg/L since May 2002 (April 2023 result was non-detect).

The TVOC concentrations for OGC-8 shown on Figure 2.15 decreased from 461 µg/L in May 2001 to 28.8 µg/L in May 2004 and have ranged from non-detect to less than 30 µg/L since that time (April 2022 was 11.4 µg/L). The TSVOC concentrations decreased from 139 µg/L in August 2001 to 25 µg/L in May 2003 and have remained below that concentration since that time with a slight increase in May 2020 to 36.3 µg/L. The TSVOC concentration decreased in May 2022 to 21.7µg/L.

### ***Monitoring Wells On-Site - Inside Barrier Wall***

The TVOC concentrations for MW-6 shown on Figure 2.4 had been less than 5 µg/L since May 2007, but had increased in recent years, rising to 93.3 µg/L in May 2019 and further to 104 µg/L in May 2020. TVOC concentrations were less than 5 µg/L since; however, increased in April 2023 to 60.8 µg/L. The TSVOC concentrations, previously low level, had increased to 2,488 µg/L in May 2018 and further to 5,206 µg/L in May 2020, but have since decreased. The TSVOC concentration in 2023 was 712.7 µg/L, an increase from 2021 and 2022 but still below the TSVOC concentrations in 2018 to 2020.

The TVOC and TSVOC concentrations for MW-7 on Figure 2.5 show that both TVOC and TSVOC have remained low level. TVOC concentrations ranged from non-detect to 4 µg/L since May 2006. TSVOC concentrations ranged from non-detect to 6 µg/L since May 2004. No parameters were detected in 2022.

The TVOC concentrations for MW-8 on Figure 2.6 show that the TVOC concentrations have decreased from 142.3 µg/L in May 2009 to 11.1 µg/L in April 2022. The TVOC concentration was 27.0 µg/L in April 2023, an increase from 2022 but consistent with the TVOC concentrations in 2021 of 21.5 µg/L. The TSVOC concentrations since May 2011 have generally been in the 70 to 100 µg/L range, except for May 2021 (121.4 µg/L). The TSVOC concentration was 97 µg/L in April 2022 and was 122.5 µg/L in 2023, consistent with the TSVOC concentration in 2021 of 121.4 µg/L. No parameters were detected above Class GA standards in OGC-3 outside the barrier wall directly downgradient from MW-8 except for phenol.

The TVOC concentrations for MW-9 on Figure 2.7 show that the TVOC concentrations have generally ranged between approximately 9 and 38 µg/L. The TSVOC concentrations have fluctuated between 120 to 520 µg/L between August 2002 and May 2016 and then increased to 925.9 µg/L in May 2018 and have since decreased to 180.4 µg/L in April 2023. No parameters were detected above Class GA standards in OGC-4 outside the barrier wall directly downgradient from MW-9.

All MWs are located on the inside of the barrier wall and a net inward gradient has been consistently maintained in the vicinity of these wells except for the 2015/2020 time period and more recently in March to May 2023 as previously described; however, the analytical data for the OGCs outside the barrier wall directly downgradient of the MWs in general do not indicate migration through the barrier wall. Thus, the TVOCs and TSVOCs are not migrating to the Niagara River. The anomalous phenol concentration in OGC-6 detected in 2023 will be further evaluated by the 2024 sampling event.

## 2.3 Effluent Monitoring Program

Groundwater from the GWS is discharged to the POTW without the need for pretreatment. The monitoring performed during the construction phase of the remedy clearly showed that the minimal chemical presence in the groundwater collected in the GWS is easily treated at the POTW and therefore no on-Site pretreatment is necessary. The effluent samples are collected at the monitoring station (meter building), which is located at the south end of the Site as shown on Figure 2.1. The analytical parameters monitored are listed in Table 2.8.

### 2.3.1 Sample Results

Effluent samples are collected semi-annually and consist of 24-hour composite and grab samples collected and analyzed for VOCs, SVOCs, metals, and wet chemistry parameters.

Laboratory analytical reports are presented in Appendix C. The QA/QC reviews of the discharge results from October 2022 and April 2023 are provided in Appendix D.

The effluent sample results for this reporting period are provided in Table 2.9. To assist in evaluating the chemical concentration trends in the effluent discharge from the GWS, the measured concentrations for the following parameters are plotted: TVOCs, TSVOCs, pH, total suspended solids (TSS), and biochemical oxygen demand (BOD) (see Figures 2.16 through 2.20). It is believed that these parameters are representative of the trends in the chemistry of the water discharged to the POTW and, as such, can also be used to determine an appropriate monitoring frequency for the effluent.

As shown on Figure 2.16, the TVOCs generally peak in the spring and then decline reaching a trough in the fall. This pattern may be attributable to additional flushing during the spring snow melt. The long-term trend of the TVOC concentrations shows an overall decrease with time from a peak concentration of 760 µg/L in April 2002 to 49 µg/L in November 2022 and not detected in April 2023. The effluent TSVOC results on Figure 2.16 show no apparent seasonal pattern. The TSVOC concentrations decreased with time until March 2011 (non-detect) and then showed increases in April 2015 (89 µg/L) and May 2017 (150 µg/L). The TSVOC concentrations in May 2021, May 2022, and

November 2022 were 21 µg/L, 22 µg/L, and 18.6 µg/L, respectively, but in October 2021 and April 2023 were non-detect.

The pH levels are presented on Figure 2.17. As shown on Figure 2.17, the pH levels range between 7.3 and 11.6. An apparent trend in the pH levels is higher pH levels in the winter/spring and lower pH levels in the summer/fall.

The TSS concentrations presented on Figure 2.18 are generally low level (i.e., <20 mg/L) and show higher concentrations occurring in the early spring and late summer/fall with elevated concentrations (maximum of 278 milligrams per liter [mg/L]) in the spring of 2005. Because TSS may be related to the discharge flow rate, the monthly discharge volume (see Table 2.10) is plotted on Figure 2.18. Comparison of the results presented on these two figures shows an apparent correlation between higher flows and greater TSS concentrations except for the 2005 spring results.

The BOD concentrations are presented on Figure 2.19. As shown on Figure 2.19, BOD concentrations have randomly ranged from not detected to 29 mg/L since May 2002 with a one-time peak of 45 µg/L in September 2012. The BOD concentrations were compared with the discharge volume but showed no apparent correlation.

In summary, the trends and low level TVOC and TSVOC concentrations described above support the semi-annual sampling frequency in the current City of North Tonawanda Industrial Wastewater Discharge Permit.

## 2.4 GWS Operations

The volume of water pumped on a monthly basis from the Site to the City POTW for treatment is presented in Table 2.10 and plotted on Figure 2.20. The monthly volumes show that during the period of initial dewatering of the Site (i.e., May and June 2001) the monthly volumes ranged from 2,300,000 to 2,900,000 gallons. For the period from June 2007 to May 2021, not including the months when the flow meter malfunctioned, the monthly volumes ranged from 23,800 to 2,661,000 gallons except for March 2009 which had a volume of 4,239,000 gallons. As indicated on Figure 2.20, the monthly volumes since June 2020 have increased when compared to the monthly volumes for previous years since 2018. This is likely the result of cleaning of the GWS collection pipe and forcemain completed between June 2020 and December 2020 as indicated in the 2021 Operation and Monitoring Report.

The total measured volume of water discharged from the Site for the period from May 2001 to May 2023 was 230,581,870 gallons with 18,576,183 gallons (35 gallons per minute [gpm] average) pumped during the 12 months from June 2022 through May 2023. This is generally consistent with the previous reporting period (June 2021 through May 2022) and is a significant increase from the June 2019 through May 2020 reporting period where 12,445,387 gallons (24 gallons per minute [gpm] average) were pumped.

Section 5.0 of the O&M Manual describes the procedures to be followed in case pumping of the GWS needs to be stopped to prevent the discharge of untreated water from the Site by the City POTW (i.e., wet weather shutdown). Wet weather shutdowns did not occur during this reporting period.

Furthermore, the treatment of the Site groundwater by the City POTW did not require any modifications to the standard operations of the City POTW and did not cause any operational upsets of the City POTW from June 2022 to May 2023.

## 2.5 GWS Maintenance

This section describes the primary GWS maintenance activities performed during the June 2022 through May 2023 time period. Maintenance or cleaning of the GWS was not required during this reporting period. Given the outward gradient observed at the end of this reporting period at River Middle/MH8 in March, April, and May 2023, additional cleaning of the forcemain will be completed in July 2023 in accordance with the scope of work presented in O&M Manual. The last cleaning of the forcemain occurred in December 2020, approximately two years and three months

since outward gradients were again observed. Therefore, it is anticipated that cleaning will occur in the future every two years; however, this may be slightly adjusted based on gradient monitoring.

## 3. Site Inspections

Site inspections were performed on a monthly basis. The Monthly Inspection Logs for June 2022 through May 2023 are included in Appendix F. In summary, the June 2022 through May 2023 inspections identified:

- Soil erosion with wire mesh exposed along portions of the shoreline from June 2022 through May 2023. consistent with that observed from June 2021 to May 2022.

The City of North Tonawanda and NYSDEC completed a review of minor soil erosion identified above at the Site on January 28, 2022. Actions to address the minor erosion were not required at this time. The conditions observed during this reporting period are generally consistent with those observed during the above review. Therefore, actions to address the minor erosion are not required at this time.

The permeable soil cap remains in place and no maintenance activities are required.

No other maintenance was required associated with the remedial components.

No changes in Site use occurred during this reporting period.

No excavations occurred and no material was imported to the Site during this reporting period.

No groundwater usage occurred during this reporting period.

## 4. Conclusions/Recommendations

### 4.1 Operation and Maintenance

The constructed remedy is achieving the remedial action objectives.

### 4.2 Monitoring

Based on the most recent results for the twelve wells listed in Section 2.2, the groundwater TVOC concentrations are:

- i.) Less than Class GA levels in one of the six wells sampled.
- ii.) Relatively constant in the six wells sampled.

The groundwater TSVOC concentrations are:

- i.) Less than Class GA levels in one of the six wells sampled.
- ii.) Relatively constant with random fluctuations in the six wells sampled except for a decrease in MW-9 and an increase OGC-6, primarily due to phenol.

The groundwater sample collection frequency is:

Annual	Once Every 2 Years (Even Years)
MW-6	MW-7
MW-8	OGC-1
MW-9	OGC-2

<b>Annual</b>	<b>Once Every 2 Years (Even Years)</b>
OGC-3	OGC-4
OGC-6	OGC-5
OGC-7	OGC-8

The individual VOC and SVOC compound concentrations in the five of the wells scheduled to be sampled once every 2 years are all less than their respective Class GA levels. This supports the scheduled frequency for these wells.

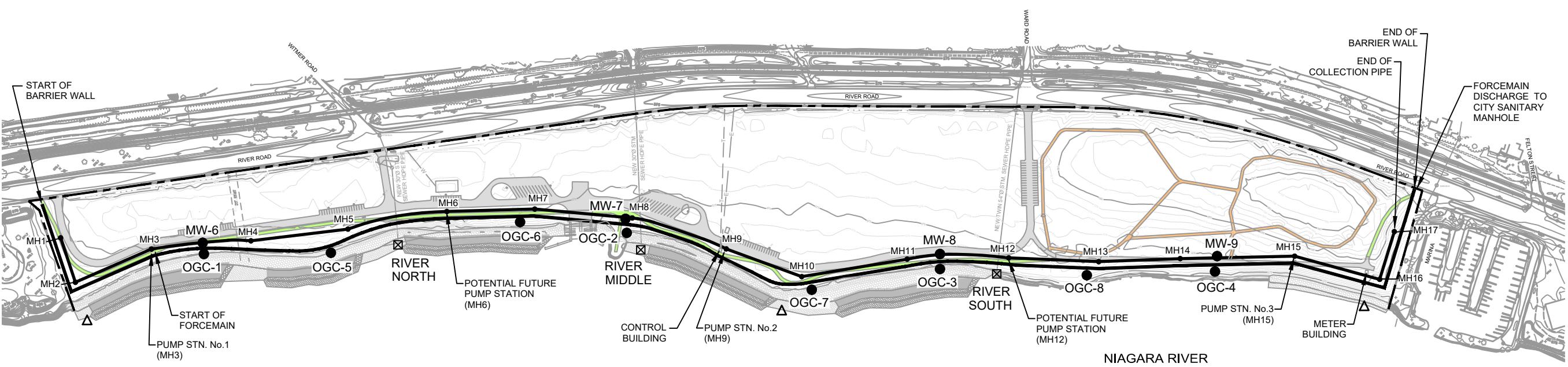
Thus, it is recommended that the sampling frequency remain unchanged.

Pursuant to the discharge permit effective March 1, 2022, semi-annual monitoring was performed during the time period June 2022 through May 2023. The trends in the effluent from the GWS to the POTW support the continuation of the sampling frequency at semi-annual. Flow monitoring will continue to be performed monthly as a check on the operation of the GWS.

Monthly monitoring of the sediment thickness in the GWS manholes will continue. If necessary to insure flow in the collection pipe, any sediment will be removed during low flow conditions, which typically occur in late summer. No sediment was removed during this reporting period.

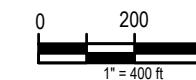
## **4.3 Notifications to City of North Tonawanda**

Notifications of anomalies in the visual inspections, discharge volumes and/or groundwater levels were and will continue to be provided to the City of North Tonawanda Public Works Engineering and Wastewater Treatment Department within a few days of measurement of the anomaly to allow for timely maintenance.



#### LEGEND

- - - PROPERTY BOUNDARY
- BARRIER WALL
- MH11 — GROUNDWATER COLLECTION SYSTEM
- OGC-1 MONITORING WELL LOCATION
- MW-1 MONITORING WELL LOCATION
- ☒ RIVER SOUTH SURFACE WATER LEVEL MONITORING LOCATION
- △ (NO SAMPLING AFTER APRIL 2008) SURFACE WATER CHEMICAL MONITORING LOCATION

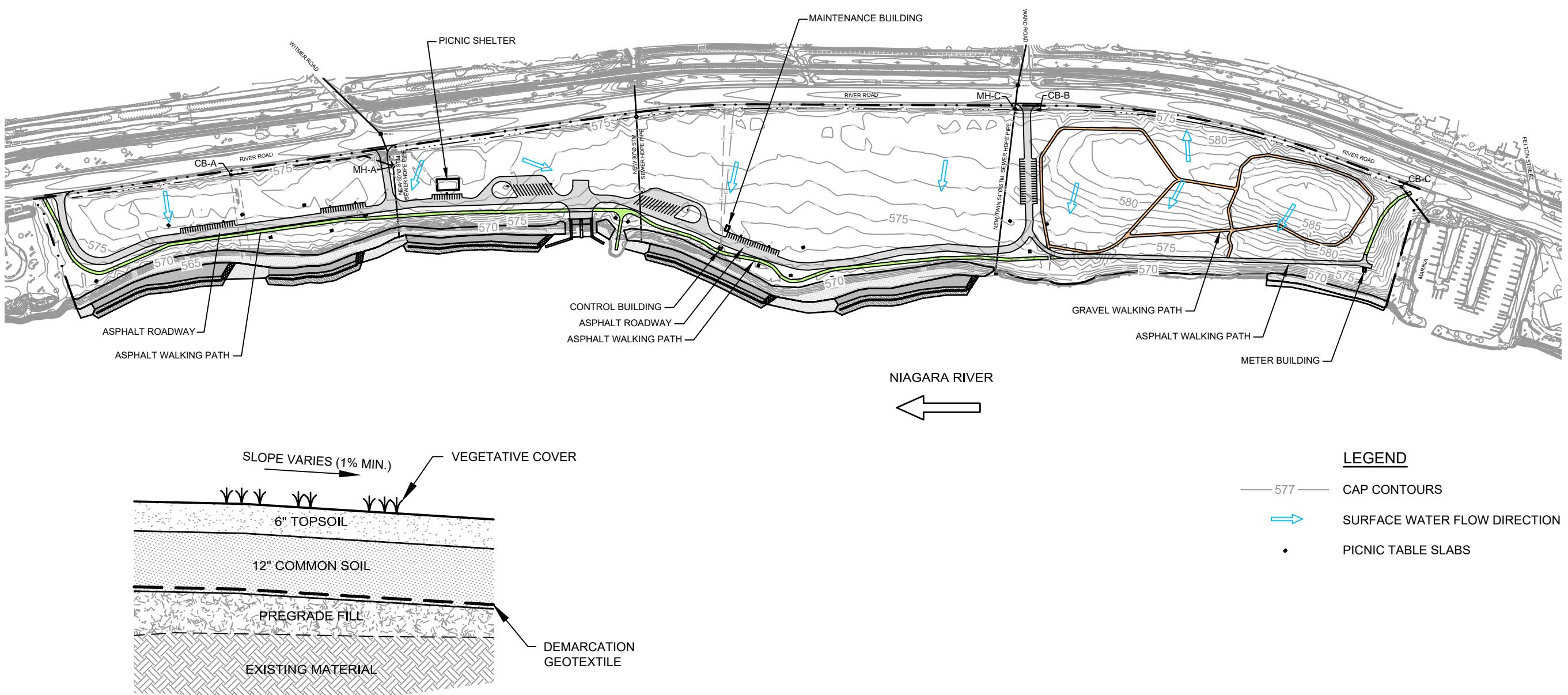


GRATWICK - RIVERSIDE PARK SITE  
NORTH TONAWANDA, NEW YORK  
OPERATION AND MONITORING REPORT  
- JUNE 2022 TO MAY 2023

Project No. 7987  
Date June 2023

MONITORING NETWORK

FIGURE 2.1



0  
200  
400 ft  
1" = 400 ft

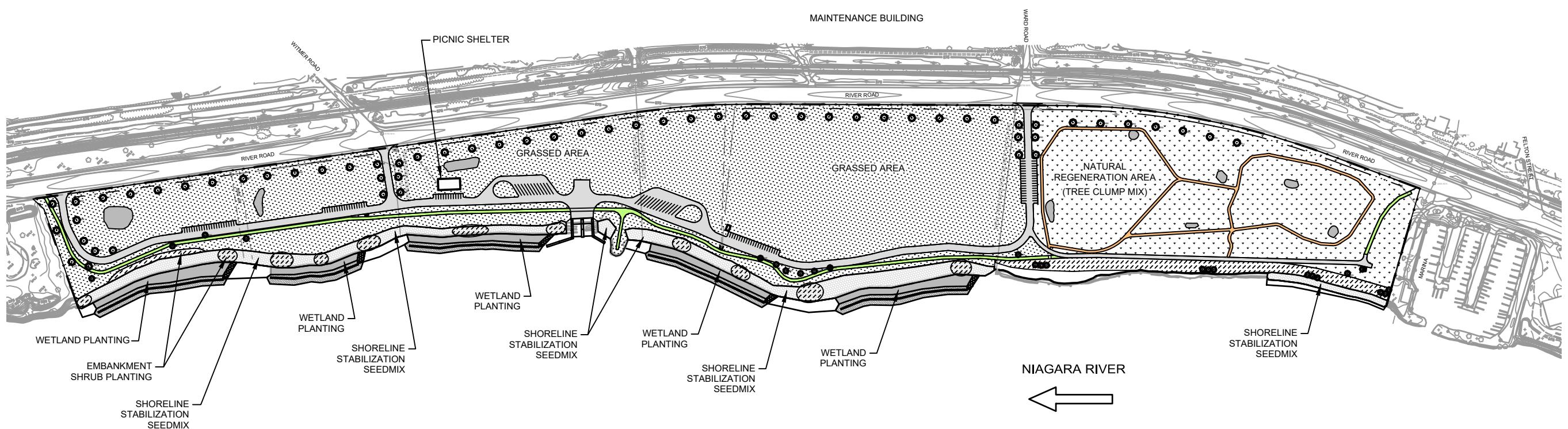


GRATWICK - RIVERSIDE PARK SITE  
NORTH TONAWANDA, NEW YORK  
CONSTRUCTED REMEDIAL ACTION - O&M MANUAL

PERMEABLE SITE CAP SYSTEM

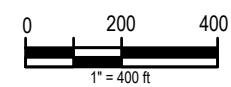
Project No. 7987  
Date September 2023

FIGURE 2.2



#### LEGEND

- TREE
- TREE CLUMP
- EMBANKMENT SHRUB PLANTING AREA



GRATWICK - RIVERSIDE PARK SITE  
NORTH TONAWANDA, NEW YORK  
OPERATION AND MONITORING REPORT  
- JUNE 2022 TO MAY 2023

Project No. 7987  
Date September 2023

PLANTING PLAN/SITE ACCESS ROADS

FIGURE 2.3

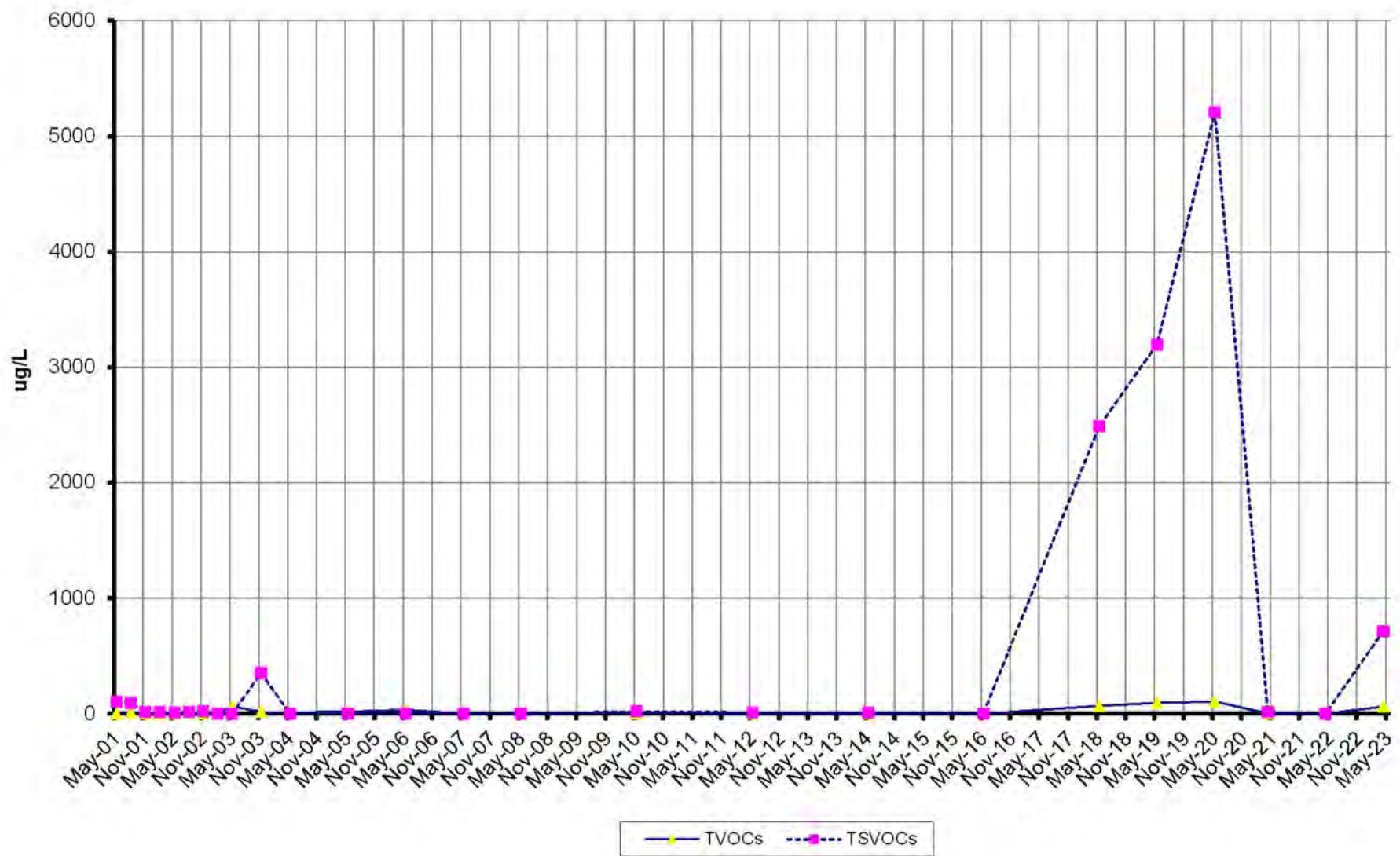


figure 2.4

MW-6 TVOC AND TSVOC CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



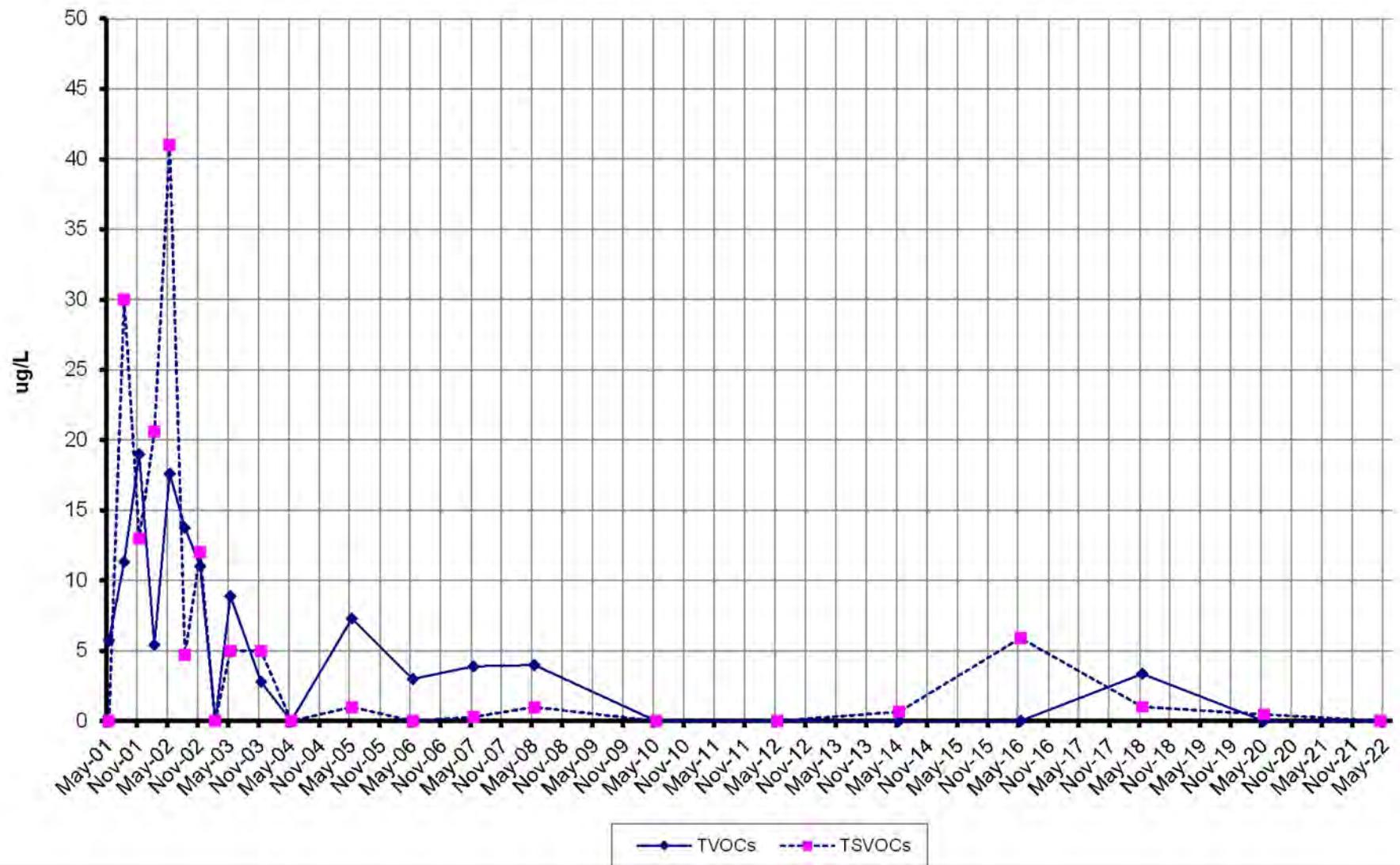


figure 2.5

MW-7 TVOC AND TSVOC CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



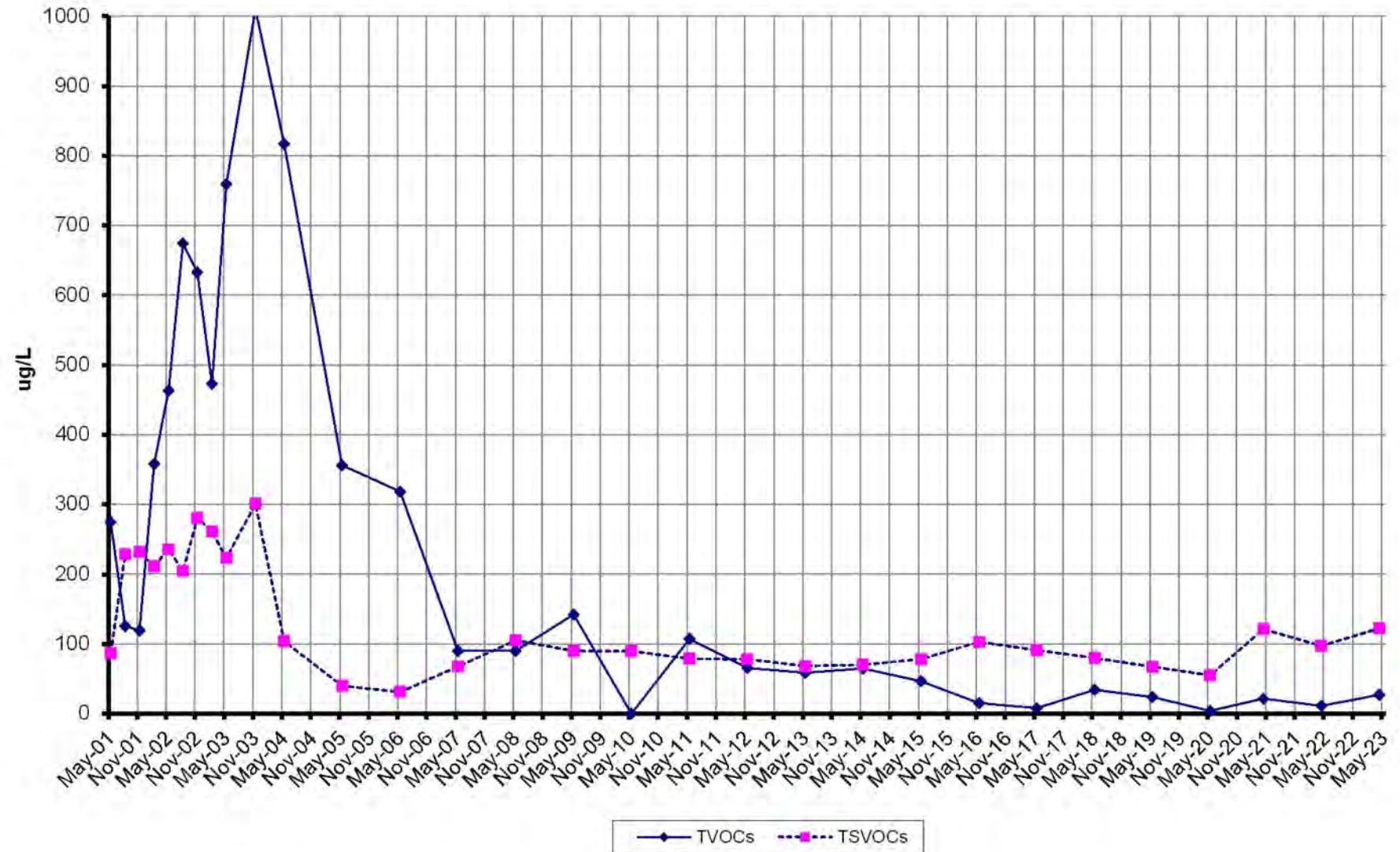


figure 2.6

MW-8 TVOC AND TSVOC CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



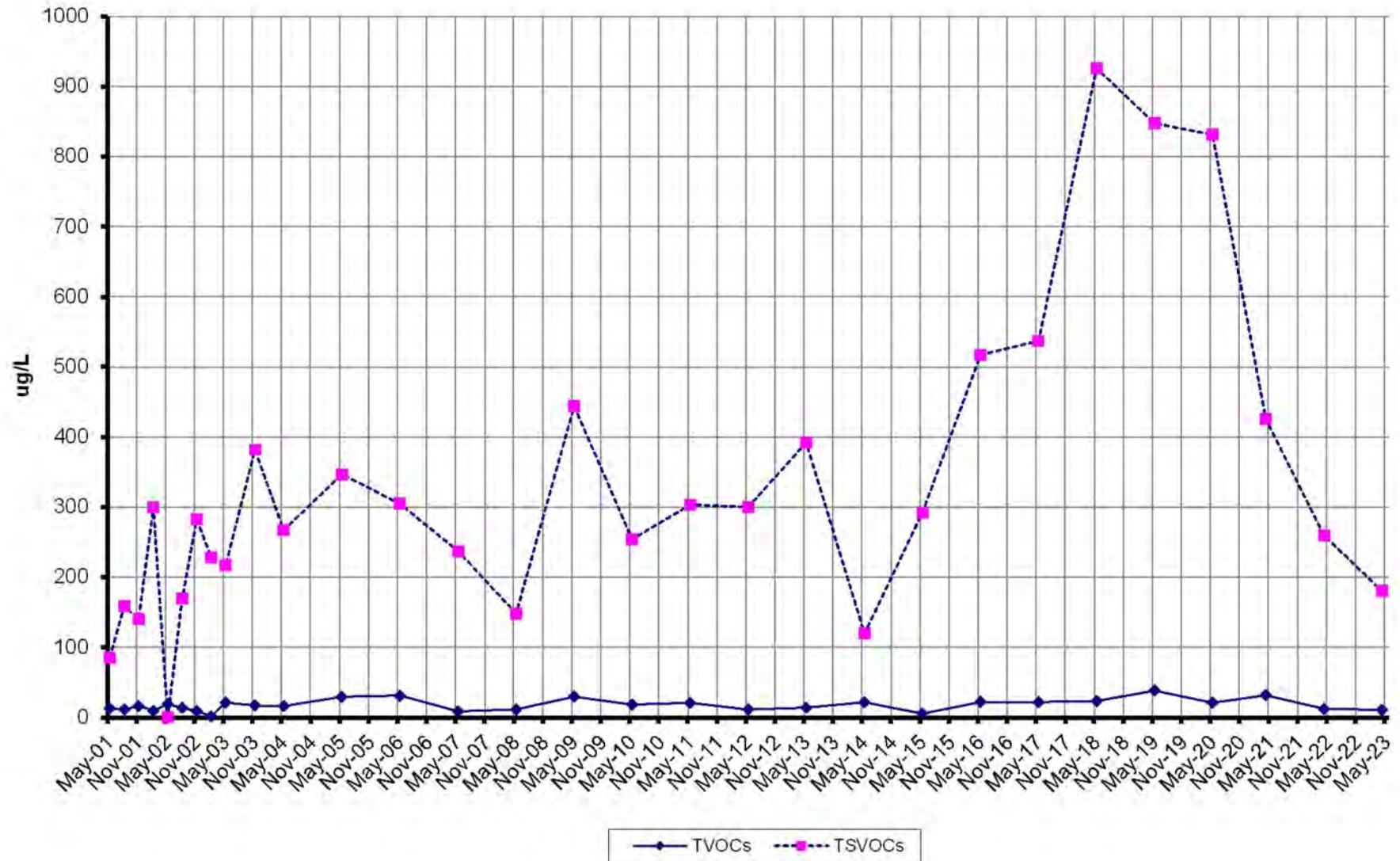


figure 2.7

MW-9 TVOC AND TSVOCS CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



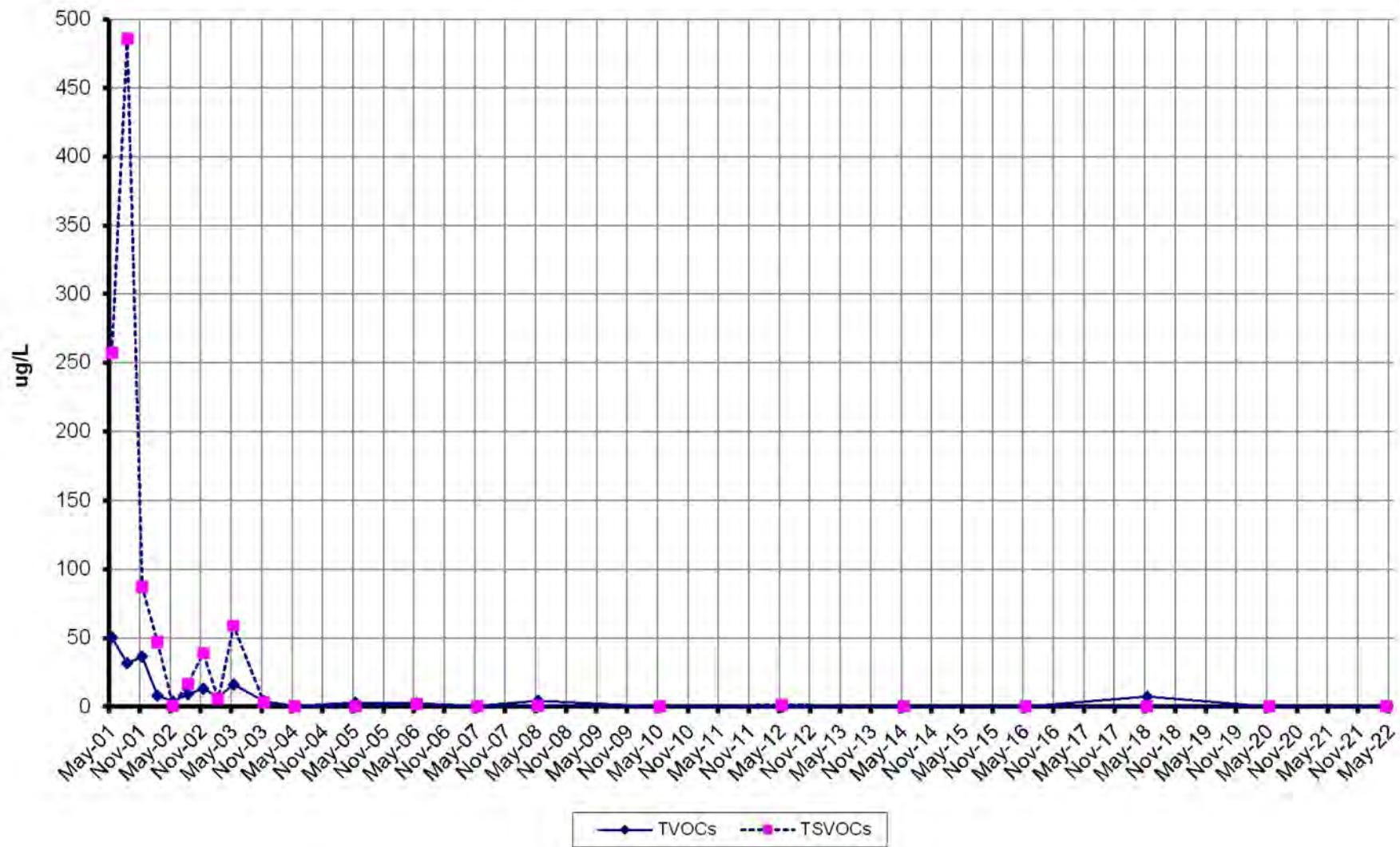


figure 2.8

OGC-1 TVOC AND TSVOC CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



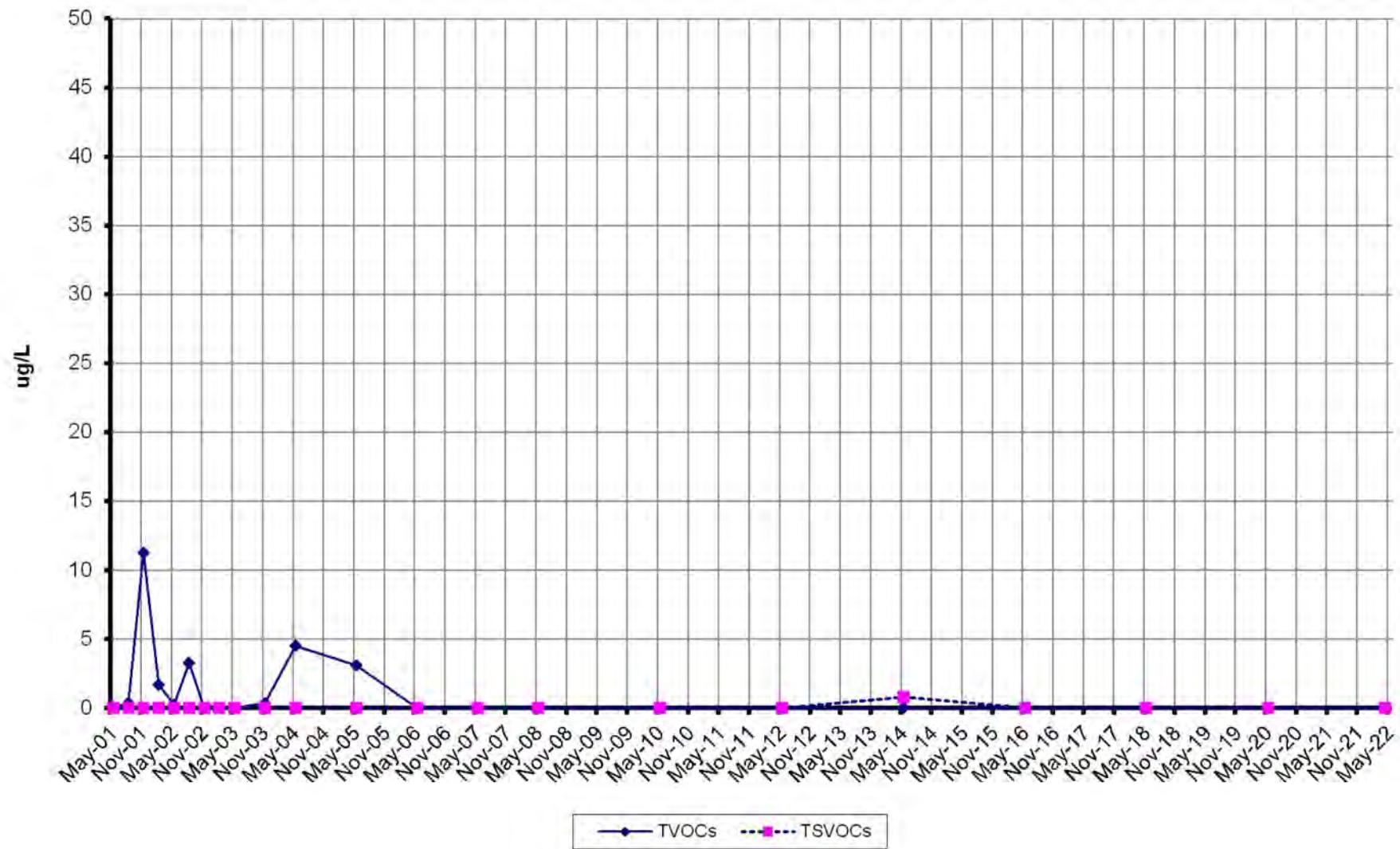


figure 2.9

OGC-2 TVOC AND TSVOCS CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



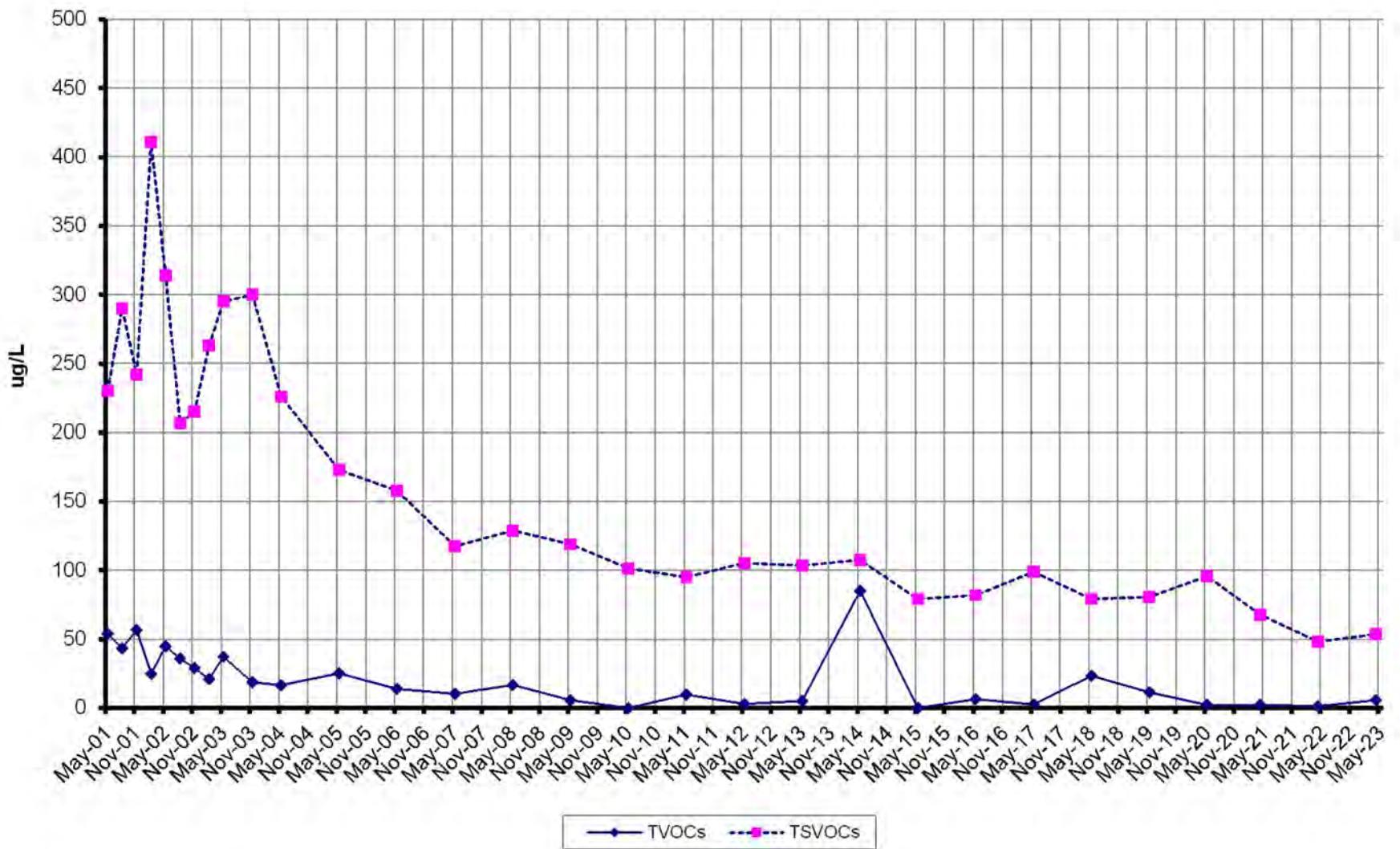


figure 2.10

OGC-3 TVOC AND TSVOC CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



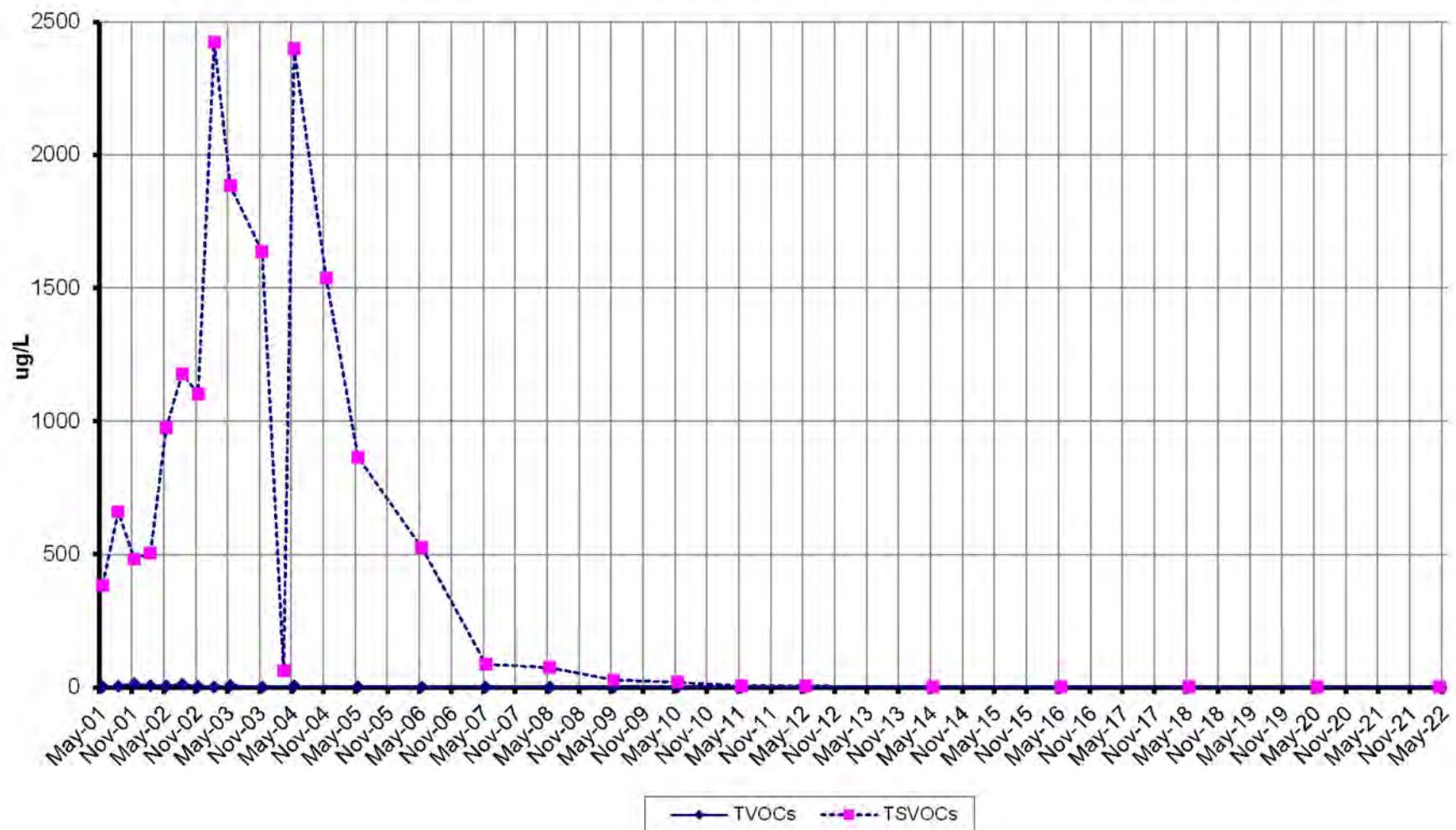


figure 2.11

OGC-4 TVOC AND TSVOC CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



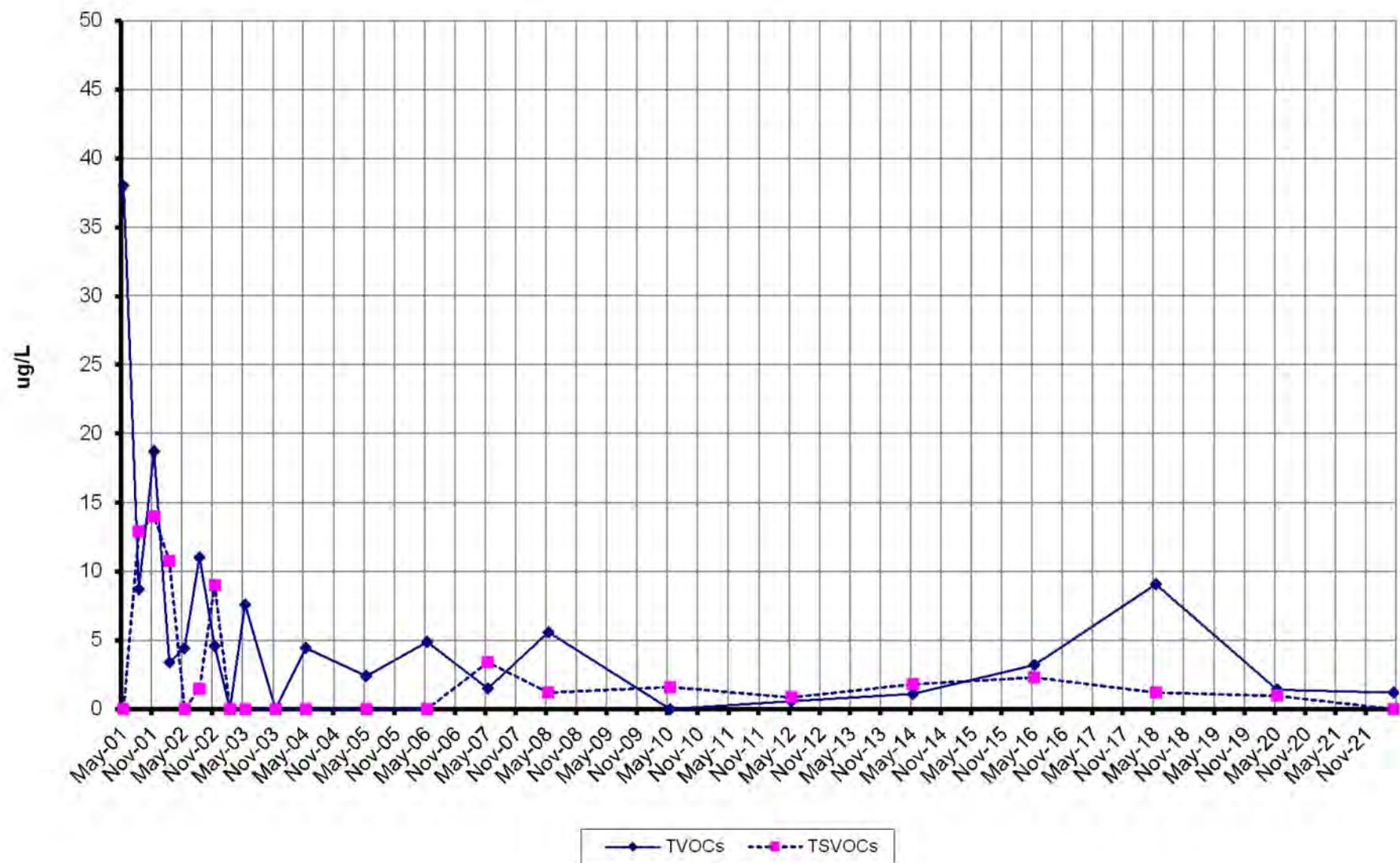


figure 2.12

OGC-5 TVOC AND TSVOCS CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



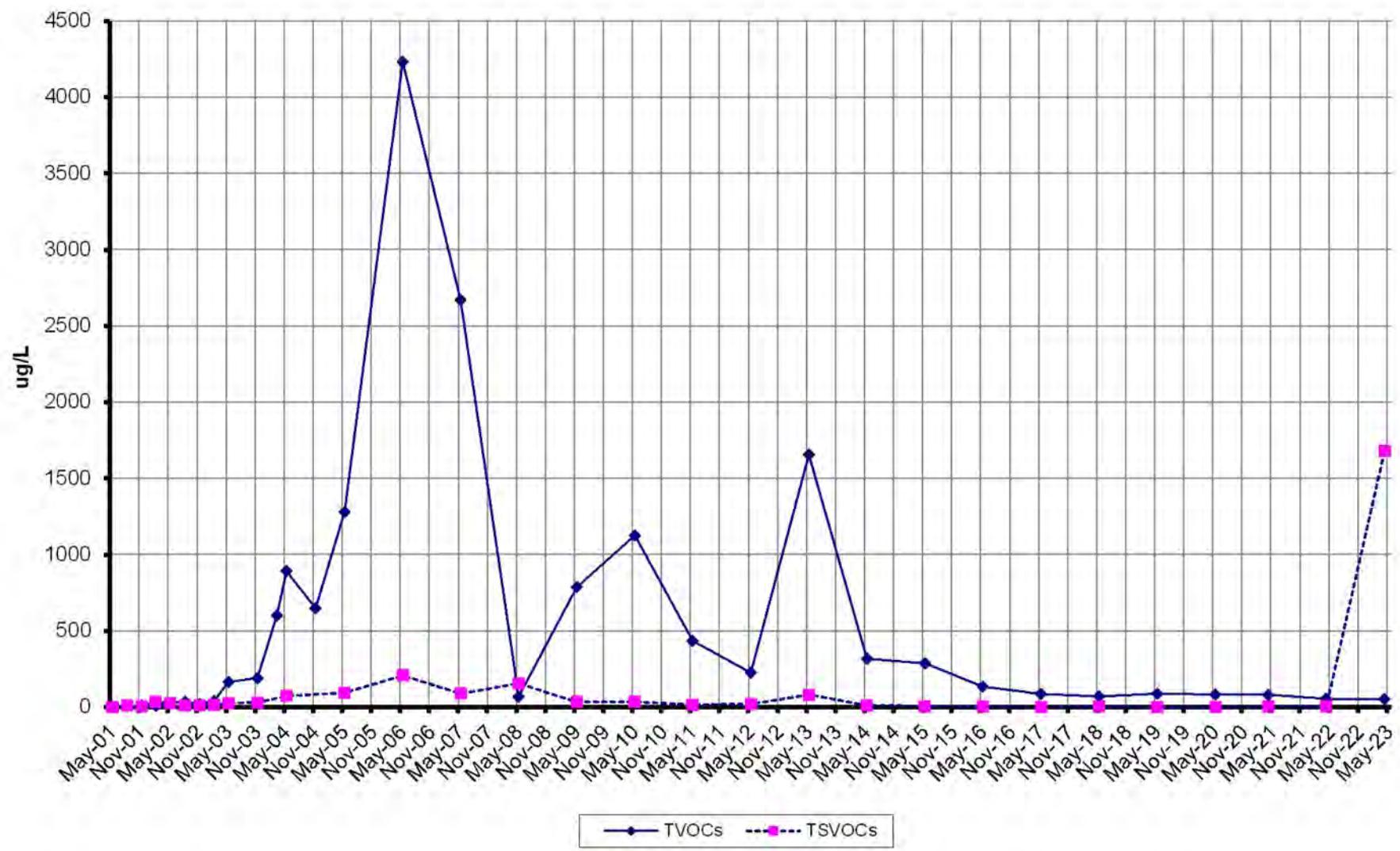


figure 2.13

OGC-6 TVOC AND TSVOC CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



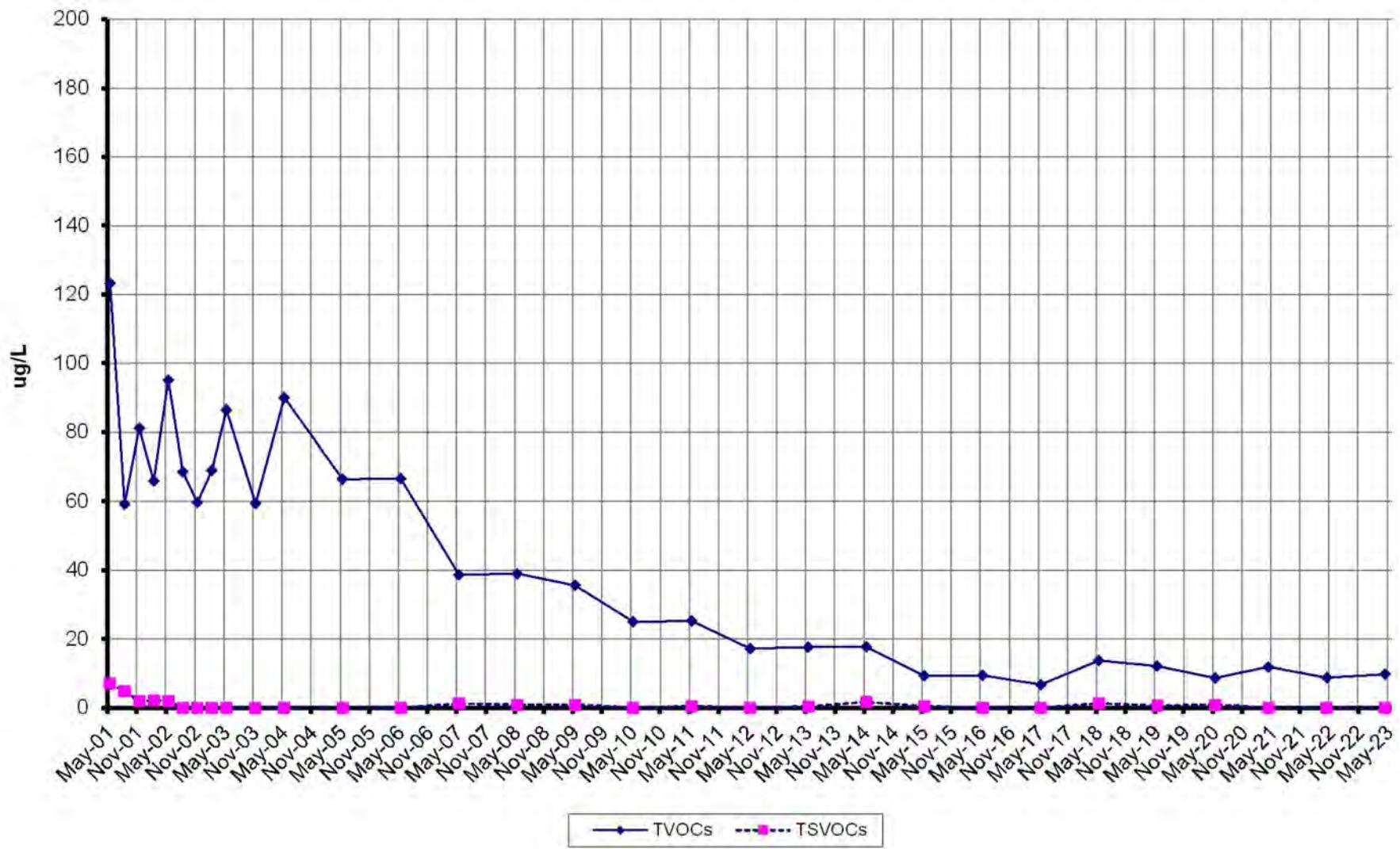


figure 2.14

OGC-7 TVOC AND TSVOC CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



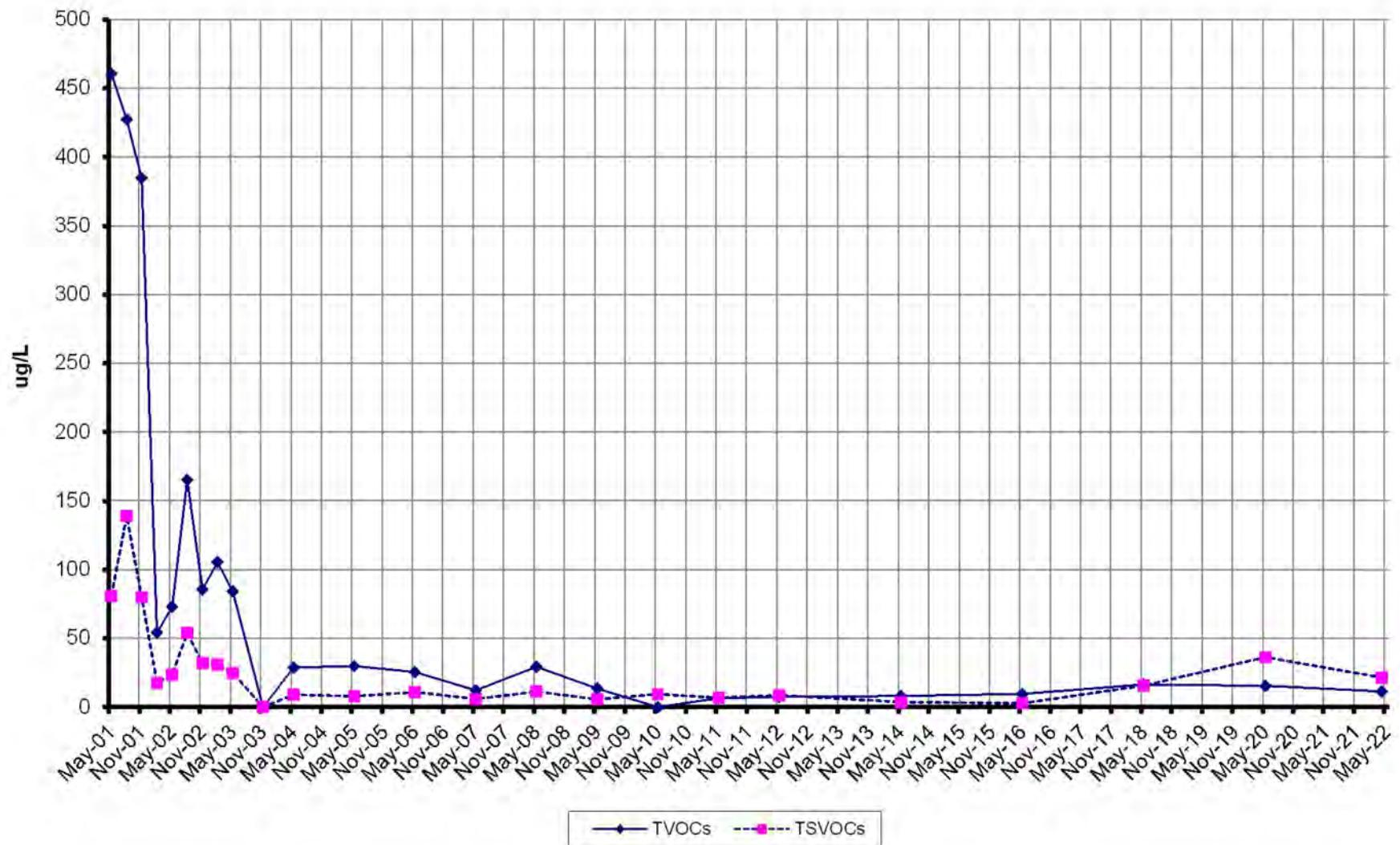


figure 2.15

OGC-8 TVOC AND TSVOC CONCENTRATIONS  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



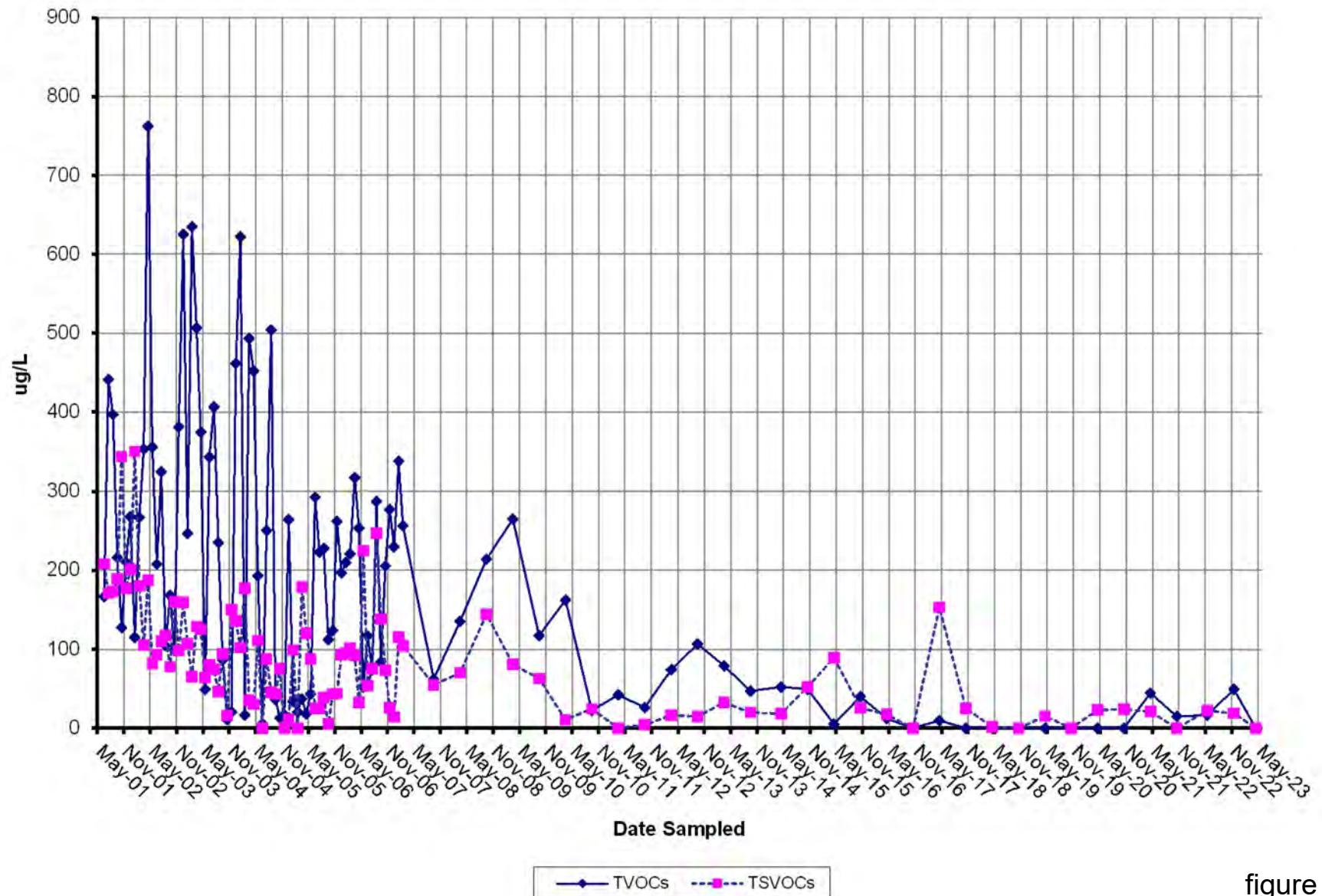


figure 2.16

EFFLUENT TVOCs AND TSVOCs vs. TIME  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



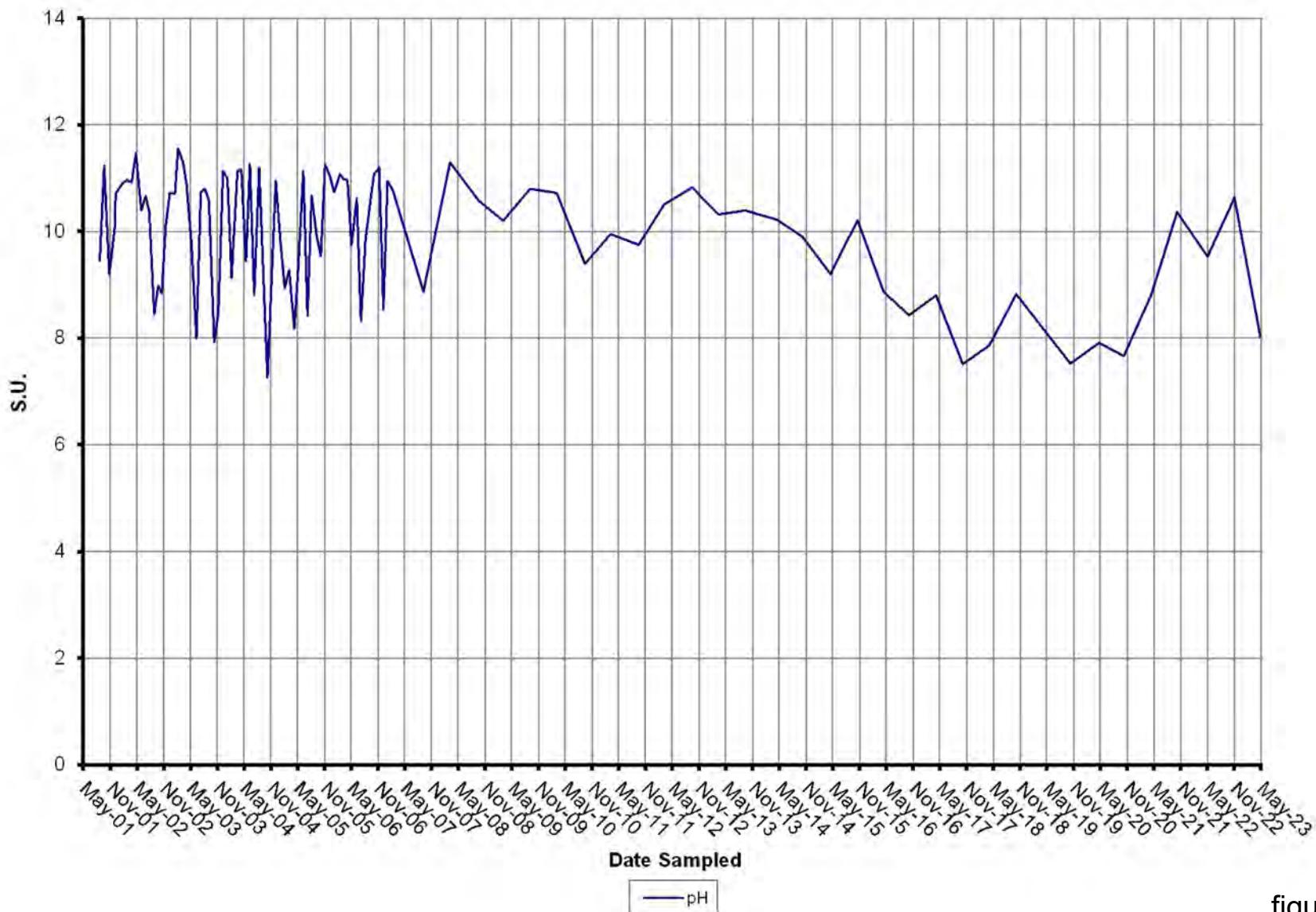


figure 2.17

EFFLUENT pH vs. TIME  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



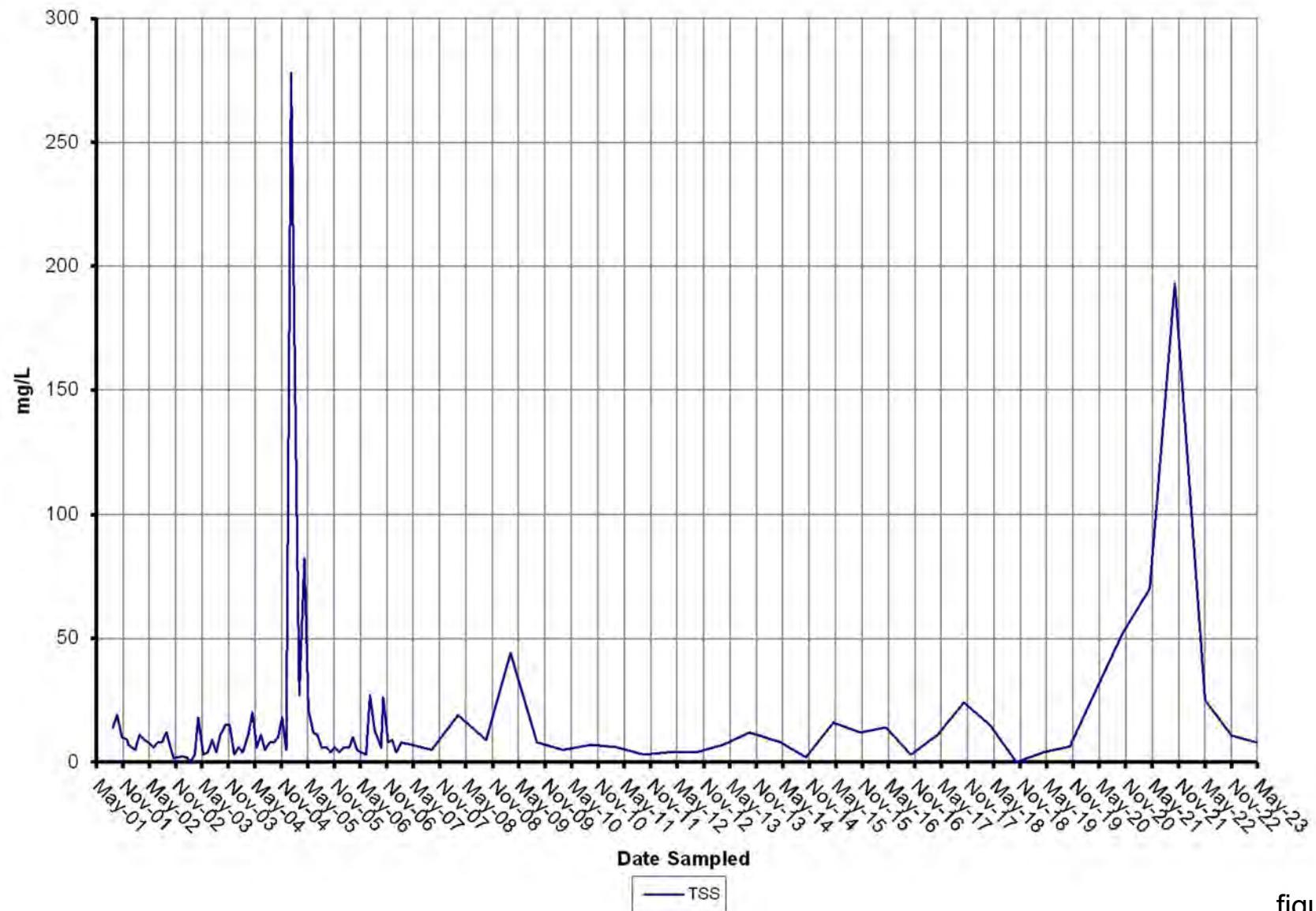


figure 2.18

EFFLUENT TOTAL SUSPENDED SOLIDS vs. TIME  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



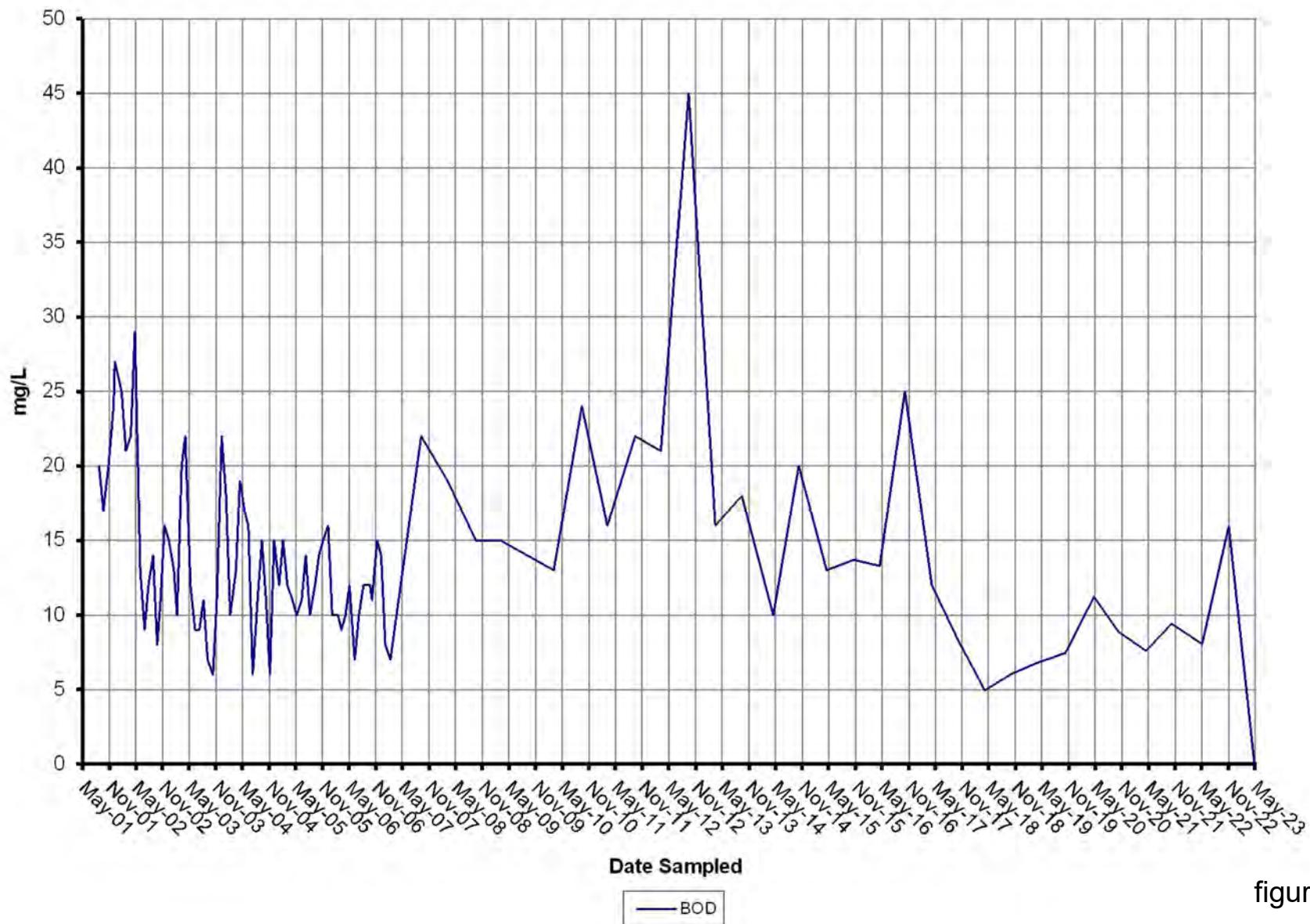


figure 2.19

EFFLUENT BOD vs. TIME  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



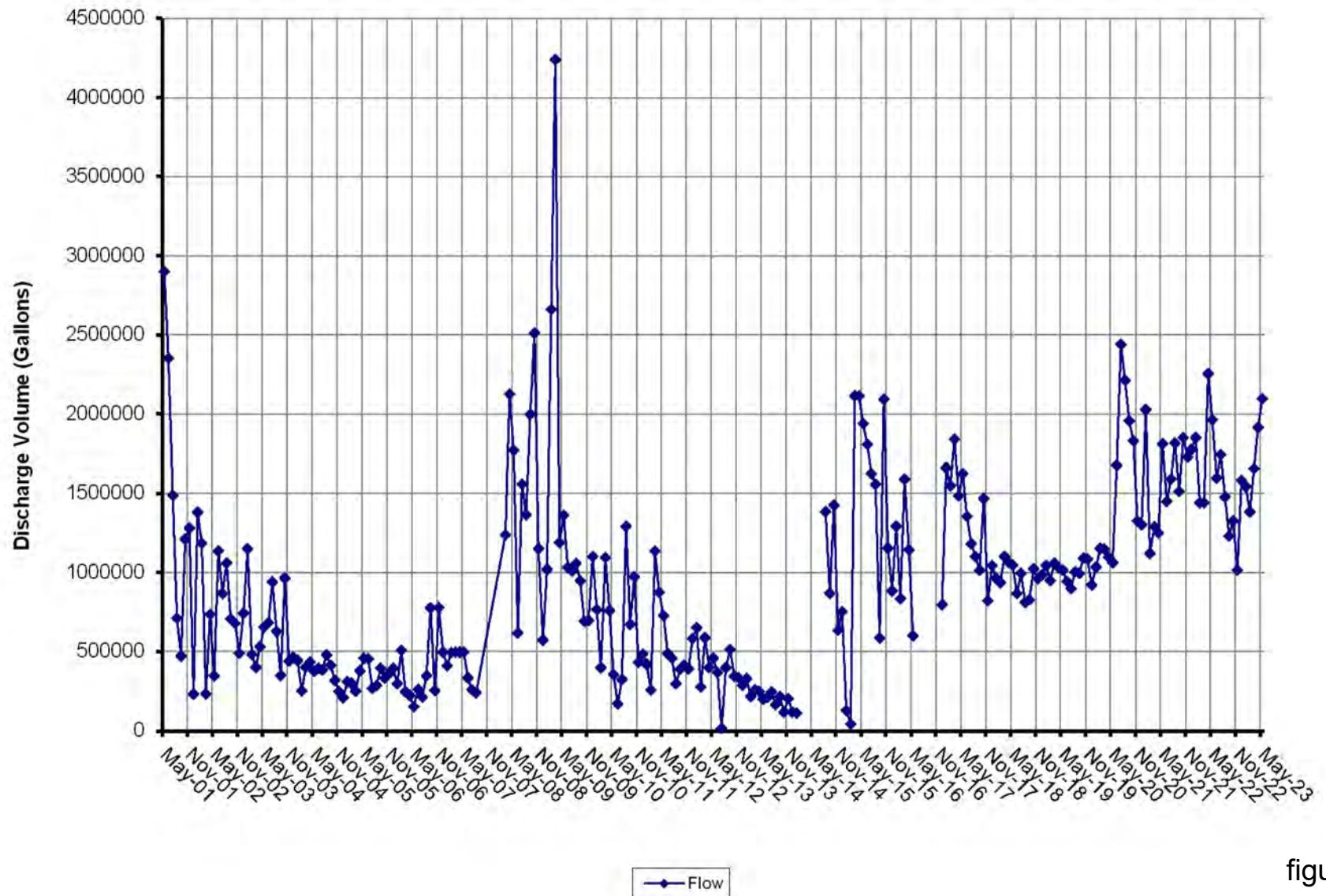


figure 2.20  
EFFLUENT VOLUME vs. TIME  
GRATWICK-RIVERSIDE PARK SITE  
*North Tonawanda, New York*



**Table 2.1**

Page 1 of 1

**Groundwater Hydraulic Monitoring Locations**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Inward Hydraulic Gradient Monitoring Locations</b>					
	<b>Inner<sup>(1)</sup></b>			<b>Outer</b>	
	MH2			Niagara River North (Downstream)	
	MH6			Niagara River North (Downstream)	
	MH8			Niagara River Middle	
	MH12			Niagara River South (Upstream)	
<b>Upward Hydraulic Gradient Monitoring Locations</b>					
	<b>Upper<sup>(1)</sup></b>			<b>Lower</b>	
	MH3			MW-6	
	MH8			MW-7	
	MH11			MW-8	
	MH14/MH15 <sup>(2)</sup>			MW-9	
<b>Additional Hydraulic Monitoring Locations</b>					
	MH9			MH16	
	OGC-1			OGC-5	
	OGC-2			OGC-6	
	OGC-3			OGC-7	
	OGC-4			OGC-8	
<b>Frequency</b>					
	Monthly				
<b>Notes:</b>					
(1)	These manholes will be monitored twice daily by POTW staff during a wetweather bypass event pursuant to Section 5.0 of the O&M Manual.				
(2)	Distance weighted averages of water levels used (MH14 - two thirds and MH15 - one third).				

Table 2.2

**Water Levels (FT AMSL)**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Date	MH2	MH3	MH6	OGC-1	MW-6	OGC-5	River North	OGC-6	MH8	MW-7	OGC-2	River Middle	OGC-7
<b>RIM Elevation</b>	<b>573.28</b>	<b>573.81</b>	<b>572.03</b>						<b>572.37</b>				
<b>TOC Elevation (ft amsl)</b>				<b>575.01</b>	<b>575.40</b>	<b>573.82</b>	<b>566.80</b>	<b>576.65</b>		<b>575.57</b>	<b>574.08</b>	<b>566.48</b>	<b>572.49</b>
June 27, 2013	564.37	559.69	557.96	564.70	564.59	564.78	564.23	564.57	562.69	562.86	564.78	564.58	564.89
July 24, 2013	564.38	560.60	558.10	565.22	564.52	565.11	565.11	566.04	562.93	563.28	565.25	564.95	565.28
August 22, 2013	564.18	560.40	557.71	565.02	564.24	565.10	565.02	564.93	562.41	562.46	565.05	564.95	565.25
September 30, 2013	564.17	560.68	557.72	564.88	564.28	564.98	564.87	564.76	564.40	562.48	564.97	564.74	565.11
October 30, 2013	564.47	560.63	558.05	564.81	564.64	564.57	(1)	564.53	562.79	562.98	564.76	564.30	564.69
November 27, 2013	564.44	560.33	557.69	564.44	564.52	564.14	(1)	564.24	562.35	562.40	564.43	563.63	564.29
December 31, 2013	564.41	561.39	558.11	564.64	564.74	564.41	(1)	564.33	562.86	563.09	564.45	564.43	564.56
January 30, 2014	564.13	559.88	557.64	565.03	564.14	564.90	564.80	564.87	562.41	562.40	565.09	(2)	565.07
February 26, 2014	567.53	570.48	558.01	564.44	565.29	564.32	(1)	564.20	562.81	562.78	564.44	563.98	564.45
March 28, 2014	564.10	559.36	557.62	564.26	564.01	564.09	564.96	564.13	562.21	562.01	564.29	564.39	564.21
April 25, 2014	564.42	560.21	558.36	564.81	564.74	564.50	(1)	564.44	563.03	562.95	564.67	564.28	564.63
May 29, 2014	564.46	559.12	558.41	564.92	564.71	564.57	(1)	564.70	563.20	563.21	564.91	564.60	564.88
June 25, 2014	564.38	560.62	558.14	564.88	564.46	564.93	564.80	564.87	562.88	562.94	565.08	564.67	565.13
July 29, 2014	564.24	560.42	557.93	565.04	564.28	564.96	(1)	564.81	562.72	562.84	565.11	564.78	565.10
August 26, 2014	564.26	561.12	557.84	564.80	564.26	564.91	564.91	564.69	562.58	562.49	564.90	564.77	565.08
September 30, 2014	564.01	560.65	557.82	564.63	564.07	564.65	564.67	564.50	562.51	562.36	564.70	564.54	564.78
October 29, 2014	564.06	559.77	557.82	564.73	564.09	564.83	564.81	564.63	562.54	562.35	564.77	564.65	565.00
November 25, 2014	563.88	560.70	557.44	565.39	563.89	565.64	565.41	564.96	562.09	561.92	565.13	NM	565.71
December 30, 2014	567.26	571.05	557.71	564.58	564.53	564.29	(1)	564.33	562.31	562.20	564.40	563.90	564.45
January 28, 2015	565.60	565.06	559.07	564.59	564.82	564.91	564.85	564.46	563.96	564.72	564.55	564.78	564.98
February 24, 2015	565.75	565.39	559.45	564.37	565.18	564.55	(2)	564.21	(2)	565.17	564.62	(2)	564.66
March 25, 2015	564.69	560.93	558.97	564.50	565.07	564.04	(1)	564.16	563.76	564.14	564.36	563.63	564.21
April 23, 2015	565.70	560.48	559.94	565.13	565.89	565.03	564.82	564.93	564.85	565.34	565.03	564.60	565.17
May 29, 2015	564.77	561.40	558.47	564.74	564.58	564.70	564.78	564.70	563.26	563.59	564.93	564.65	564.95
June 24, 2015	564.80	560.99	558.20	565.15	564.62	565.20	565.15	565.07	562.96	563.10	565.23	565.07	565.28
July 28, 2015	564.79	559.51	557.84	565.31	564.53	565.40	565.27	565.25	562.60	562.76	565.41	565.16	565.53
August 27, 2015	564.62	559.38	557.71	565.23	564.29	565.30	565.13	565.14	562.46	562.41	565.36	565.06	565.45
September 25, 2015	564.70	559.57	557.81	564.99	564.47	565.06	565.01	564.92	562.53	562.55	565.07	564.91	565.23
October 30, 2015	564.69	560.63	557.51	565.76	564.31	565.06	564.71	566.07	562.24	562.34	565.42	564.49	565.41
November 30, 2015	564.59	560.10	557.23	564.35	564.23	564.12	(1)	564.16	561.85	561.80	564.42	563.83	564.23
December 30, 2015	564.50	560.89	557.26	565.32	564.18	564.57	(1)	564.33	561.94	562.35	564.75	564.18	564.88
January 28, 2016	564.77	560.05	557.42	564.79	564.48	564.60	(1)	564.56	562.05	561.98	564.68	564.15	564.76
February 23, 2016	564.86	560.75	558.15	564.81	564.69	564.19	(1)	564.29	562.94	563.51	564.46	563.48	564.38
March 31, 2016	565.66	560.53	559.61	565.28	565.97	564.83	(1)	564.84	564.43	564.91	565.01	564.20	565.03
April 28, 2016	566.56	561.19	560.20	565.22	566.08	564.91	564.76	564.89	565.05	565.69	565.20	564.55	565.05
May 26, 2016	566.95	559.81	560.61	565.10	566.38	564.96	564.82	564.97	565.45	566.20	565.38	564.64	565.10

Table 2.2

**Water Levels (FT AMSL)**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Date	MH2	MH3	MH6	OGC-1	MW-6	OGC-5	River North	OGC-6	MH8	MW-7	OGC-2	River Middle	OGC-7
<b>RIM Elevation</b>	<b>573.28</b>	<b>573.81</b>	<b>572.03</b>						<b>572.37</b>				
<b>TOC Elevation (ft amsl)</b>				<b>575.01</b>	<b>575.40</b>	<b>573.82</b>	<b>566.80</b>	<b>576.65</b>		<b>575.57</b>	<b>574.08</b>	<b>566.48</b>	<b>572.49</b>
June 30, 2016	567.09	561.03	560.81	565.18	566.51	565.21	565.21	565.13	565.65	566.94	565.49	565.09	565.30
July 28, 2016	567.28	559.17	561.01	565.29	566.67	565.24	565.18	565.17	565.79	566.61	565.59	565.05	565.45
August 24, 2016	567.40	559.53	561.12	565.32	566.81	565.23	565.22	565.26	565.96	566.77	565.68	565.12	565.47
September 27, 2016	567.56	561.19	561.30	565.33	566.98	565.58	565.48	565.33	566.15	566.94	565.56	565.38	565.77
October 25, 2016	567.57	565.12	561.25	565.19	566.97	565.02	564.76	564.94	566.08	566.84	565.32	564.60	565.26
November 30, 2016	567.37	561.33	561.11	564.39	566.79	564.22	(1)	564.29	565.95	566.75	564.76	563.86	564.36
December 28, 2016	567.41	561.39	560.85	565.09	566.82	564.51	(1)	564.58	565.60	566.37	564.98	563.88	564.69
January 31, 2017	567.41	560.44	560.72	564.73	566.67	564.41	(1)	564.53	565.46	566.18	564.86	563.66	564.49
February 28, 2017	567.06	560.62	560.36	564.98	566.44	564.56	(1)	564.67	565.23	565.88	564.89	564.08	564.69
March 31, 2017	567.37	559.48	561.11	565.45	566.78	564.53	(1)	564.52	565.58	566.36	564.90	564.23	564.83
April 27, 2017	568.05	560.59	561.53	565.32	567.45	565.15	564.91	565.14	566.36	567.14	565.41	564.76	565.25
May 31, 2017	568.17	559.79	561.73	565.54	567.57	565.55	565.56	565.54	566.53	567.34	565.75	565.29	565.66
June 27, 2017	567.87	559.53	561.47	565.73	567.28	565.70	565.62	565.65	566.29	567.03	565.91	565.50	565.80
July 26, 2017	567.85	561.04	561.34	565.58	567.25	565.54	565.42	565.54	566.19	566.96	565.91	565.23	565.67
August 29, 2017	567.98	559.69	561.52	565.30	567.37	565.34	565.19	565.26	566.44	567.21	565.67	565.04	565.50
September 25, 2017	567.81	560.63	561.50	565.21	567.24	565.34	565.22	565.16	566.37	567.21	565.54	565.06	565.50
October 24, 2017	567.89	560.12	561.49	565.15	567.32	565.53	563.37	565.13	566.35	567.12	565.44	565.25	565.51
November 27, 2017	567.95	560.69	561.59	565.09	567.37	564.88	564.55	564.87	566.45	567.17	565.30	564.40	565.05
December 21, 2017	567.87	560.98	561.45	564.98	567.27	564.60	(1)	564.67	566.32	567.08	565.15	564.09	564.73
January 31, 2018	568.03	559.93	561.64	564.83	567.48	564.97	565.09	564.75	566.48	567.36	565.00	564.59	565.18
February 26, 2018	568.36	560.72	561.98	565.58	567.73	565.09	564.86	565.00	566.85	567.65	565.32	564.69	565.27
March 23, 2018	568.25	561.20	561.85	565.12	567.61	565.04	564.86	564.96	566.70	567.48	565.21	564.62	565.17
April 27, 2018	568.56	559.09	562.20	565.64	567.92	565.46	565.30	565.52	567.09	567.86	565.68	565.09	565.58
May 23, 2018	568.28	560.61	561.92	565.69	567.68	565.59	565.41	565.52	566.76	567.57	565.87	565.19	565.76
June 11, 2018	568.21	555.80	561.91	565.48	567.61	565.43	565.29	565.43	566.69	567.18	565.79	565.13	565.60
July 25, 2018	568.14	558.78	561.85	565.73	567.57	565.59	565.51	565.44	566.55	567.09	565.95	565.40	565.85
August 27, 2018	568.16	560.13	561.78	565.40	567.55	565.37	565.25	565.36	566.63	567.10	565.68	565.08	565.60
September 21, 2018	568.06	559.41	561.71	565.22	565.08	565.37	565.30	565.24	566.54	566.97	565.56	565.13	565.53
October 31, 2018	567.93	559.80	561.45	565.24	567.30	565.14	565.20	565.13	566.26	566.75	565.46	564.99	565.40
November 21, 2018	568.10	559.70	561.72	565.37	567.48	565.80	565.52	565.27	566.55	567.06	565.43	(2)	565.80
December 20, 2018	568.35	559.91	561.99	564.93	567.71	564.80	(1)	564.82	566.86	567.38	565.19	564.29	564.93
January 28, 2019	568.38	560.20	562.06	565.87	567.80	565.80	565.30	565.73	566.89	567.44	565.90	(2)	565.91
February 28, 2019	568.33	559.05	561.94	565.27	567.68	565.06	(2)	565.06	566.76	567.40	565.52	(2)	565.26
March 26, 2019	568.15	560.19	561.77	565.10	567.53	565.04	564.95	564.94	566.58	567.22	565.18	564.72	565.18
April 26, 2019	568.56	558.73	562.30	565.72	567.96	565.56	565.71	565.54	566.96	567.80	565.64	565.48	565.67
May 29, 2019	568.71	559.20	562.49	565.74	568.13	565.72	565.42	565.70	567.30	568.02	566.05	565.20	565.86

Table 2.2

**Water Levels (FT AMSL)**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Date	MH2	MH3	MH6	OGC-1	MW-6	OGC-5	River North	OGC-6	MH8	MW-7	OGC-2	River Middle	OGC-7
<b>RIM Elevation</b>	<b>573.28</b>	<b>573.81</b>	<b>572.03</b>						<b>572.37</b>				
<b>TOC Elevation (ft amsl)</b>				<b>575.01</b>	<b>575.40</b>	<b>573.82</b>	<b>566.80</b>	<b>576.65</b>		<b>575.57</b>	<b>574.08</b>	<b>566.48</b>	<b>572.49</b>
June 26, 2019	568.68	558.83	562.39	566.33	568.04	566.24	566.11	566.22	567.16	567.93	566.47	565.89	566.40
July 24, 2019	568.45	560.45	562.12	565.70	567.82	565.70	565.58	565.69	566.89	567.69	566.15	565.38	565.83
August 28, 2019	568.32	558.55	561.99	565.66	567.73	565.60	565.44	565.56	566.76	567.55	565.98	565.28	565.77
September 25, 2019	568.31	558.86	561.93	565.61	567.69	565.49	565.47	565.48	566.68	567.48	565.87	565.27	565.72
October 30, 2019	568.37	559.29	561.96	565.48	567.74	565.26	565.04	565.33	566.74	567.52	565.71	564.79	565.45
November 26, 2019	568.32	558.13	562.00	565.19	567.71	565.13	564.82	565.11	566.81	567.64	565.41	564.58	565.27
December 23, 2019	568.54	559.53	562.27	565.18	567.94	565.12	564.94	565.06	567.10	567.92	565.36	564.59	565.23
January 29, 2020	568.86	558.60	562.54	565.60	568.23	565.24	565.04	565.45	567.38	568.20	565.69	564.72	565.47
February 26, 2020	568.75	560.28	562.42	565.27	568.13	565.05	564.65	565.19	567.26	568.06	565.57	(2)	565.20
March 26, 2020	568.84	559.19	562.51	565.24	568.22	565.32	565.27	565.39	567.37	568.20	565.67	564.85	565.46
May 11, 2020	568.70	558.53	562.44	565.78	567.97	565.73	565.60	565.73	566.97	568.08	566.06	565.29	565.95
May 26, 2020	568.73	560.23	562.41	565.92	568.08	565.89	565.82	565.77	567.19	567.66	566.06	565.60	566.00
June 29, 2020	566.65	565.40	561.64	565.79	566.97	565.78	565.60	565.70	567.17	567.73	566.12	565.37	565.92
July 28, 2020	560.96	560.07	560.30	565.88	564.84	565.90	565.61	565.77	566.76	567.28	566.21	565.37	565.97
August 26, 2020	559.81	558.13	559.61	565.61	564.12	565.58	565.62	565.43	565.98	566.68	565.93	565.39	565.81
September 29, 2020	561.02	560.12	558.84	565.53	563.42	565.59	565.51	565.40	564.51	565.46	565.70	565.25	565.77
October 28, 2020	560.82	559.89	557.44	565.43	563.16	565.29	565.31	565.25	562.54	563.49	565.49	564.99	565.55
November 30, 2020	561.12	560.29	556.31	565.04	562.94	564.83	564.60	564.90	559.28	561.28	565.08	564.24	564.97
December 22, 2020	560.67	559.88	556.45	565.10	562.91	565.00	564.79	564.89	558.79	561.40	564.96	564.37	565.22
January 28, 2021	561.30	560.37	557.71	565.01	562.88	564.83	564.71	564.73	560.33	561.27	564.82	564.28	565.00
February 24, 2021	561.39	560.52	556.37	564.99	562.68	564.80	DRY	564.78	559.05	561.14	564.99	564.00	564.86
March 31, 2021	560.70	559.82	556.77	565.19	562.76	565.00	564.79	564.96	559.45	561.65	564.97	564.42	564.73
April 28, 2021	561.00	560.02	557.14	565.22	562.81	565.18	565.04	565.06	559.19	561.28	565.09	564.71	564.66
May 25, 2021	561.41	560.48	557.34	565.29	562.77	565.48	565.22	565.17	559.75	561.29	565.20	564.86	565.44
June 30, 2021	560.10	558.04	557.25	565.33	565.59	565.29	565.31	565.21	559.28	560.85	565.26	565.00	565.50
July 28, 2021	561.36	560.32	557.54	565.63	562.69	565.54	565.44	565.47	561.37	562.42	565.60	565.13	565.74
August 30, 2021	561.36	560.46	557.37	565.45	562.59	565.54	565.17	565.39	560.38	560.95	565.51	564.97	565.67
September 30, 2021	559.82	557.91	557.51	565.30	562.72	565.16	565.12	565.17	560.13	561.50	565.33	564.77	565.37
October 25, 2021	561.37	560.41	557.20	565.38	562.76	565.01	NM	565.10	560.38	561.86	565.29	564.64	565.28
November 30, 2021	559.97	558.52	557.30	565.08	562.84	564.94	564.72	564.93	560.71	562.08	564.99	564.27	565.03
December 22, 2021	560.62	559.65	557.34	565.40	562.96	565.89	565.38	565.34	561.85	562.69	565.17	NM	565.80
January 28, 2022	559.92	558.80	557.02	564.91	562.82	565.30	NM	564.92	559.84	561.45	565.16	NM	565.08
February 28, 2022	560.15	558.56	558.16	565.19	563.36	565.04	564.68	565.04	563.86	564.68	565.01	564.35	565.18
March 30, 2022	559.99	558.43	558.37	565.02	563.44	564.82	564.54	564.88	564.14	565.05	565.00	564.30	564.89
April 29, 2022	561.34	560.41	558.01	565.24	563.22	564.94	564.70	565.07	563.09	563.78	564.38	564.38	565.12
May 23, 2022	561.30	560.32	558.23	565.28	563.10	565.13	564.79	565.07	563.25	563.99	565.34	564.38	565.29

**Table 2.2**

**Water Levels (FT AMSL)**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Date	MH2	MH3	MH6	OGC-1	MW-6	OGC-5	River North	OGC-6	MH8	MW-7	OGC-2	River Middle	OGC-7
<b>RIM Elevation</b>	<b>573.28</b>	<b>573.81</b>	<b>572.03</b>						<b>572.37</b>				
<b>TOC Elevation (ft amsl)</b>				<b>575.01</b>	<b>575.40</b>	<b>573.82</b>	<b>566.80</b>	<b>576.65</b>		<b>575.57</b>	<b>574.08</b>	<b>566.48</b>	<b>572.49</b>
July 5, 2022	566.18	565.21	559.87	565.11	565.57	565.14	565.09	565.11	561.25	562.42	565.25	564.77	565.29
July 28, 2022	560.19	559.80	558.32	565.31	563.76	565.17	565.28	565.12	560.30	562.71	565.28	565.01	565.48
August 31, 2022	561.45	560.45	557.83	564.86	564.95	565.31	565.24	565.14	558.95	560.85	565.24	564.96	565.54
September 28, 2022	560.20	558.93	557.92	565.53	562.98	565.01	564.80	565.05	560.34	561.26	565.17	564.55	565.31
November 1, 2022	561.31	560.68	557.60	564.61	563.02	564.52	565.34	564.51	559.71	561.42	564.67	564.30	564.63
November 28, 2022	560.18	558.59	558.14	564.61	563.47	564.42	564.63	564.44	559.97	561.37	564.48	563.73	564.55
December 30, 2022	560.80	559.40	559.63	564.87	565.39	564.13	564.93	564.46	561.34	562.74	564.32	564.64	564.47
January 27, 2023	560.89	559.90	561.67	564.83	567.54	564.80	564.68	564.67	564.09	565.50	564.74	564.37	564.92
February 24, 2023	562.11	561.17	561.83	564.54	567.64	564.64	(2)	564.45	563.86	565.16	563.64	(2)	564.71
March 31, 2023	561.06	559.45	561.68	564.97	567.34	564.68	564.69	564.91	566.39	566.89	564.66	564.30	564.73
April 28, 2023	560.61	559.48	561.49	565.16	567.07	565.06	564.99	564.99	566.12	566.91	565.31	564.70	564.98
May 30, 2023	560.69	558.66	561.13	565.04	566.77	565.09	565.04	564.98	565.48	566.45	565.35	564.76	565.21

Table 2.2

**Water Levels (FT AMSL)**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Date	MH9	OGC-3	MH11	MW-8	River South	MH12	OGC-8	OGC-4	MW-9	MH14	MH15	MH16	
<b>RIM Elevation</b>			<b>572.11</b>			<b>572.37</b>					<b>574.30</b>	<b>575.84</b>	<b>574.82</b>
<b>TOC Elevation (ft amsl)</b>	<b>572.55</b>	<b>573.35</b>		<b>574.37</b>	<b>568.46</b>		<b>574.01</b>	<b>574.66</b>	<b>576.23</b>				
June 27, 2013			562.02	563.08	563.61	565.00	561.50	565.08	564.99	565.66	565.68	564.63	565.69
July 24, 2013			565.36	563.04	563.56	565.37	561.40	565.42	565.30	565.47	565.40	564.27	565.44
August 22, 2013			565.37	562.87	563.37	565.37	561.17	565.38	565.29	565.19	565.16	564.08	565.18
September 30, 2013			565.17	563.73	563.25	565.15	561.03	565.24	565.15	565.05	565.06	564.01	565.03
October 30, 2013			564.73	562.96	563.53	564.74	561.35	564.83	564.73	565.50	565.48	564.45	565.54
November 27, 2013			564.33	563.08	563.58	564.30	561.39	564.39	564.38	565.47	565.53	564.52	565.35
December 31, 2013			564.72	563.53	564.06	564.87	561.78	564.89	564.63	565.76	565.78	564.71	565.86
January 30, 2014			565.14	563.40	563.95	565.63	561.65	565.20	565.17	565.52	565.51	564.51	565.61
February 26, 2014			564.55	563.28	563.83	564.55	561.48	564.65	564.59	565.46	565.57	564.51	565.55
March 28, 2014	560.87	564.24	563.58	564.10	564.38	561.78	564.40	564.26	565.93	565.98	564.88	565.97	
April 25, 2014	559.42	564.72	563.90	564.44	564.70	562.08	564.77	564.73	566.12	566.22	565.18	566.24	
May 29, 2014	561.05	564.99	564.01	564.37	564.92	562.06	564.98	564.88	565.77	566.07	565.00	566.07	
June 25, 2014	561.27	565.14	563.53	564.03	565.11	561.68	565.84	565.21	565.60	565.69	564.62	565.64	
July 29, 2014	560.93	565.18	563.41	563.75	565.15	561.37	565.25	565.14	565.21	565.30	564.23	565.14	
August 26, 2014	560.63	565.18	563.11	563.61	565.15	561.25	565.28	565.11	565.20	565.28	564.16	565.20	
September 30, 2014	559.52	564.92	562.89	563.31	564.96	560.97	565.01	564.89	564.89	565.04	563.92	564.96	
October 29, 2014	560.59	565.14	562.78	563.23	565.15	560.87	565.18	565.14	564.77	564.91	563.80	564.81	
November 25, 2014	561.55	565.76	562.71	563.18	565.56	560.85	565.80	565.89	564.76	564.92	563.85	564.79	
December 30, 2014	560.91	564.52	562.98	563.43	564.45	561.15	564.59	564.62	565.13	565.22	564.15	565.16	
January 28, 2015	564.64	565.19	564.19	564.70	565.24	562.14	565.28	565.18	564.26	565.39	564.31	565.33	
February 24, 2015	565.12	564.74	(2)	565.15	564.60	562.51	564.80	564.78	565.41	(2)	564.44	565.44	
March 25, 2015	559.25	564.22	563.88	564.44	563.86	561.78	564.22	563.24	566.11	(2)	565.10	566.13	
April 23, 2015	560.40	565.22	564.86	565.41	565.04	562.69	565.25	565.26	566.41	566.53	565.26	566.54	
May 29, 2015	561.88	565.01	563.36	563.93	565.05	561.28	565.13	564.99	565.56	565.67	564.57	565.61	
June 24, 2015	560.38	565.67	563.33	563.87	565.44	561.25	565.47	565.45	565.54	565.62	564.54	565.57	
July 28, 2015	560.55	565.59	563.27	563.84	565.50	561.16	565.63	565.64	565.38	565.49	564.43	565.43	
August 27, 2015	559.82	565.53	563.09	563.60	565.47	560.96	565.59	565.60	565.14	565.23	564.11	565.17	
September 25, 2015	559.75	565.35	563.20	563.58	565.31	560.91	565.39	565.30	565.16	565.30	564.14	565.21	
October 30, 2015	561.54	565.24	562.82	563.34	565.00	560.69	565.23	565.45	564.25	562.52	560.35	564.33	
November 30, 2015	559.78	564.52	562.52	563.03	564.19	560.35	564.40	564.39	563.61	562.72	561.17	563.69	
December 30, 2015	560.97	564.93	562.22	562.79	564.73	560.14	565.00	565.03	563.10	562.57	561.16	563.39	
January 28, 2016	561.19	564.77	562.68	563.18	564.64	560.48	564.83	564.84	563.44	562.49	561.02	563.60	
February 23, 2016	560.92	564.39	563.03	563.54	564.16	560.88	564.41	564.48	563.55	562.69	561.63	563.71	
March 31, 2016	560.12	564.96	564.19	564.76	564.60	562.06	565.01	565.05	564.54	562.28	559.76	564.54	
April 28, 2016	564.63	565.12	564.97	564.49	565.04	562.79	565.18	565.15	565.27	563.07	561.01	565.34	
May 26, 2016	565.53	565.22	565.42	565.93	565.14	563.25	565.25	565.27	565.61	562.95	559.66	565.63	

Table 2.2

**Water Levels (FT AMSL)**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Date	MH9	OGC-3	MH11	MW-8	River South	MH12	OGC-8	OGC-4	MW-9	MH14	MH15	MH16	
<b>RIM Elevation</b>			<b>572.11</b>			<b>572.37</b>					<b>574.30</b>	<b>575.84</b>	<b>574.82</b>
<b>TOC Elevation (ft amsl)</b>	<b>572.55</b>	<b>573.35</b>		<b>574.37</b>	<b>568.46</b>		<b>574.01</b>	<b>574.66</b>	<b>576.23</b>				
June 30, 2016	566.03	565.49	565.77	566.30	565.49	563.62	565.55	565.47	566.36	566.12	567.30	566.37	
July 28, 2016	565.62	565.53	565.99	566.55	565.48	563.83	565.58	565.54	566.62	568.64	567.51	566.60	
August 24, 2016	565.82	565.60	566.09	566.62	565.57	563.92	565.63	565.56	566.64	568.77	568.01	566.69	
September 27, 2016	566.36	565.92	566.33	566.84	565.84	564.14	565.95	565.88	566.87	568.70	567.96	566.89	
October 25, 2016	565.73	565.30	566.29	566.85	565.19	564.13	565.29	565.33	566.86	566.97	567.43	566.92	
November 30, 2016	566.27	564.42	566.23	566.74	564.34	564.07	564.44	564.48	566.88	568.17	567.36	566.93	
December 28, 2016	559.75	564.62	565.75	566.35	564.45	563.68	564.71	564.80	566.50	562.67	559.88	566.60	
January 31, 2017	559.53	564.46	565.58	566.09	564.24	563.44	564.58	564.58	566.22	562.34	560.72	566.31	
February 28, 2017	564.92	564.68	565.32	565.85	564.57	563.15	564.76	564.83	565.92	562.03	559.68	565.99	
March 31, 2017	559.97	565.07	565.82	566.35	564.96	563.68	565.28	565.16	566.47	562.88	560.73	566.53	
April 27, 2017	560.70	565.33	566.59	567.14	565.24	564.40	565.33	565.40	567.26	563.07	560.81	567.30	
May 31, 2017	559.08	565.73	566.88	567.27	565.66	564.57	565.79	565.78	567.40	564.63	560.33	567.42	
June 27, 2017	560.71	565.93	566.39	566.94	565.93	564.25	566.00	565.97	567.02	564.81	561.46	567.03	
July 26, 2017	560.08	565.79	566.38	566.90	565.69	564.24	565.79	565.77	567.05	564.68	560.20	567.04	
August 29, 2017	560.82	565.56	566.58	567.12	565.49	564.42	565.62	565.64	567.23	565.13	561.12	567.21	
September 25, 2017	567.06	565.56	566.53	567.06	565.50	564.37	565.59	564.64	567.05	565.26	561.12	567.02	
October 24, 2017	560.13	565.79	566.51	567.08	565.73	564.37	565.80	565.75	567.12	565.34	559.74	567.09	
November 27, 2017	561.26	565.22	566.77	567.34	564.91	564.62	565.03	565.17	567.41	565.82	560.74	567.43	
December 21, 2017	559.16	564.76	566.62	567.19	564.63	564.47	564.79	564.87	567.30	565.99	561.15	567.33	
January 31, 2018	559.55	565.33	566.82	567.46	565.27	564.66	565.34	565.27	567.60	566.31	560.74	567.57	
February 26, 2018	559.05	565.26	567.13	567.71	565.14	564.04	565.31	565.37	567.81	566.78	561.32	567.83	
March 23, 2018	560.88	565.28	567.11	567.63	565.12	563.95	565.30	565.35	567.79	566.88	561.55	567.85	
April 27, 2018	560.34	565.68	567.49	568.00	565.57	565.35	565.69	565.74	568.21	567.33	559.65	567.24	
May 23, 2018	559.05	565.83	567.09	567.66	565.61	564.98	565.89	565.75	567.95	567.12	559.65	567.89	
June 11, 2018	559.45	565.69	567.05	567.56	565.58	564.88	562.69	565.73	567.72	567.28	559.55	567.73	
July 25, 2018	559.46	565.93	566.87	567.39	565.85	564.70	562.97	565.89	567.46	567.32	560.76	567.16	
August 27, 2018	560.97	565.64	566.85	567.37	565.56	564.68	562.69	565.68	567.53	567.37	560.80	567.48	
September 21, 2018	559.62	566.23	566.80	567.34	565.65	564.63	562.73	565.67	567.41	567.41	560.06	567.43	
October 31, 2018	560.27	565.59	566.63	567.19	565.54	564.48	562.63	565.47	567.34	567.33	562.20	567.34	
November 21, 2018	560.59	566.02	566.98	567.55	565.98	564.83	563.10	566.05	567.69	567.69	563.46	567.70	
December 20, 2018	560.36	564.94	567.30	567.84	564.82	565.16	561.95	565.14	567.96	568.12	567.07	568.05	
January 28, 2019	559.32	565.93	567.32	567.95	565.31 (3)	565.17	562.90	566.05	568.07	568.16	567.15	568.11	
February 28, 2019	561.46	565.25	567.29	567.85	(2)	565.15	562.33	565.38	568.05	568.19	567.22	568.18	
March 26, 2019	559.16	565.33	567.08	567.63	565.08	564.95	562.40	565.40	567.81	567.97	566.94	567.94	
April 26, 2019	560.44	565.97	567.62	568.15	566.06	565.48	563.05	565.75	568.31	568.43	567.39	568.37	
May 29, 2019	560.75	565.88	567.78	568.30	565.73	565.58	562.91	565.95	568.48	568.51	567.48	568.47	

Table 2.2

**Water Levels (FT AMSL)**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Date	MH9	OGC-3	MH11	MW-8	River South	MH12	OGC-8	OGC-4	MW-9	MH14	MH15	MH16	
<b>RIM Elevation</b>			<b>572.11</b>			<b>572.37</b>				<b>574.30</b>	<b>575.84</b>	<b>574.82</b>	
<b>TOC Elevation (ft amsl)</b>	<b>572.55</b>	<b>573.35</b>		<b>574.37</b>	<b>568.46</b>		<b>574.01</b>	<b>574.66</b>	<b>576.23</b>				
June 26, 2019	560.32	566.52	567.58	568.09	566.44	565.41	563.53	566.56	568.28	568.37	567.32	568.31	
July 24, 2019	560.50	565.95	567.30	567.82	565.82	565.16	563.00	566.03	567.95	568.08	567.06	568.01	
August 28, 2019	559.82	565.87	567.13	567.66	565.78	564.98	562.88	565.93	567.73	567.87	566.22	567.81	
September 25, 2019	559.65	565.86	567.05	567.56	565.78	564.91	562.89	565.80	567.63	567.64	560.23	567.74	
October 30, 2019	559.31	565.49	567.09	567.61	565.37	564.94	562.50	565.53	567.71	567.63	559.85	567.74	
November 26, 2019	559.24	565.36	567.28	567.80	565.25	565.15	562.39	565.45	567.93	567.97	559.82	568.00	
December 23, 2019	560.27	565.30	567.60	568.09	565.23	565.46	562.37	565.37	568.25	568.31	560.45	568.31	
January 29, 2020	560.56	565.49	567.92	568.43	565.35	565.80	565.49	565.60	568.58	568.63	559.35	568.65	
February 26, 2020	559.09	565.24	567.83	568.36	565.10	565.68	562.29	565.33	568.50	568.61	561.07	568.59	
March 26, 2020	558.86	565.56	567.97	568.45	565.43	565.79	562.59	565.62	568.65	568.71	559.03	568.70	
May 11, 2020	558.90	566.12	567.82	568.32	566.01	565.69	563.19	566.18	568.52	568.26	560.72	568.56	
May 26, 2020	558.87	566.18	567.84	568.16	566.10	565.56	563.23	566.18	568.37	568.46	559.46	568.43	
June 29, 2020	567.96	565.96	567.60	568.13	565.88	565.44	563.03	566.05	568.21	568.32	560.22	568.25	
July 28, 2020	567.49	566.01	567.30	567.80	565.87	565.15	563.01	566.09	567.99	568.03	561.31	568.03	
August 26, 2020	566.73	565.96	566.68	567.19	565.94	564.48	563.02	565.90	567.40	567.49	560.51	567.49	
September 29, 2020	565.23	565.87	565.90	566.33	565.87	563.77	562.95	565.93	566.66	566.72	560.19	566.83	
October 28, 2020	563.23	565.69	565.34	565.88	565.57	563.19	562.62	565.66	566.12	566.26	561.35	566.31	
November 30, 2020	559.92	565.02	564.79	565.30	564.90	562.68	562.09	565.13	565.74	565.72	559.75	565.84	
December 22, 2020	559.47	565.24	564.95	565.45	565.08	562.79	562.31	565.40	565.84	565.88	559.25	565.99	
January 28, 2021	561.04	565.03	565.25	565.78	NM	563.14	562.10	565.18	566.19	566.24	559.28	566.40	
February 24, 2021	559.75	564.79	564.82	565.33	NM	562.68	561.83	565.00	565.74	565.74	559.55	565.92	
March 31, 2021	560.13	565.19	564.97	565.54	565.01	562.88	562.23	565.30	565.92	565.98	560.15	566.06	
April 28, 2021	559.92	565.36	564.90	565.48	564.94	562.80	562.40	565.43	565.86	565.91	561.23	566.00	
May 25, 2021	560.49	565.62	564.77	565.71	565.51	562.68	562.63	565.63	565.75	565.81	559.73	565.98	
June 30, 2021	559.99	565.67	564.35	564.89	565.62	562.26	562.72	565.63	565.40	565.40	559.16	565.50	
July 28, 2021	562.06	565.83	565.02	565.46	565.72	562.75	562.89	565.82	565.88	565.89	559.34	568.90	
August 30, 2021	561.13	565.72	564.56	565.08	565.59	562.44	562.77	565.87	565.54	565.59	560.49	565.69	
September 30, 2021	560.87	565.46	564.72	565.28	565.36	562.55	562.48	565.47	565.71	565.74	559.43	565.81	
October 25, 2021	561.06	565.36	564.98	565.59	565.27	562.96	562.38	565.26	566.02	566.06	561.02	566.10	
November 30, 2021	561.16	565.10	565.53	566.15	564.86	563.42	562.12	565.19	566.55	566.58	560.58	566.63	
December 22, 2021	562.56	566.11	565.63	566.15	NM	563.49	563.15	566.14	566.57	566.62	560.08	566.70	
January 28, 2022	560.66	564.99	565.32	565.83	NM	563.19	562.04	565.18	566.24	566.29	561.75	566.40	
February 28, 2022	564.66	565.13	565.93	566.51	565.00	563.79	562.24	565.32	566.93	567.02	561.56	567.07	
March 30, 2022	564.83	564.99	566.02	566.52	564.86	564.88	562.03	565.17	567.00	567.08	560.13	567.10	
April 29, 2022	563.86	565.12	565.86	566.38	564.92	563.70	562.18	565.22	566.84	566.84	560.56	566.91	
May 23, 2022	563.95	565.18	565.65	566.37	565.44	563.49	562.35	565.65	566.60	566.64	560.54	566.78	

**Table 2.2**

**Water Levels (FT AMSL)**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Date	MH9	OGC-3	MH11	MW-8	River South	MH12	OGC-8	OGC-4	MW-9	MH14	MH15	MH16	
<b>RIM Elevation</b>			<b>572.11</b>			<b>572.37</b>					<b>574.30</b>	<b>575.84</b>	<b>574.82</b>
<b>TOC Elevation (ft amsl)</b>	<b>572.55</b>	<b>573.35</b>		<b>574.37</b>	<b>568.46</b>		<b>574.01</b>	<b>574.66</b>	<b>576.23</b>				
July 5, 2022	561.87	565.47	565.29	565.80	565.38	563.11	562.49	565.46	566.13	566.12	559.54	566.30	
July 28, 2022	562.26	565.65	565.22	565.44	565.58	562.95	562.61	565.57	566.58	565.81	560.87	565.99	
August 31, 2022	561.76	565.63	564.65	565.21	565.48	562.56	562.60	565.55	565.92	565.48	561.53	565.63	
September 28, 2022	560.95	565.42	564.53	565.00	565.15	562.38	562.30	565.35	565.52	565.42	560.43	565.44	
November 1, 2022	560.67	564.72	564.98	565.80	564.63	562.88	561.44	564.92	565.82	565.86	560.44	565.94	
November 28, 2022	560.70	564.60	565.61	565.93	564.47	563.32	561.61	564.69	566.28	566.32	560.93	566.36	
December 30, 2022	561.77	564.64	565.80	566.32	564.84	563.68	561.63	564.81	566.70	(2)	559.64	566.89	
January 27, 2023	564.88	564.91	566.30	566.74	564.74	564.17	561.93	565.10	567.32	567.49	560.94	567.48	
February 24, 2023	564.40	564.81	566.17	566.54	(2)	563.87	561.90	564.97	566.77	567.09	560.81	567.20	
March 31, 2023	567.10	564.75	566.88	567.43	564.63	564.84	561.98	564.90	567.62	567.77	561.33	567.78	
April 28, 2023	566.87	565.39	567.08	567.35	565.29	564.73	562.38	565.26	567.69	567.79	561.60	567.90	
May 30, 2023	563.44	565.37	566.57	566.94	565.30	565.26	562.39	565.41	567.26	567.31	561.30	567.38	
Notes:													
(1) River level too low to obtain a measurement at the measuring location.													
(2) Unable to access.													
(3) Top of ice													
NM Not measured													

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		06/27/2013		07/24/2013		08/22/2013		09/30/2013		10/30/2013		11/27/2013	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	564.75	Inward	565.11 <sup>(2)</sup>	Inward	565.10	Inward	564.87	Inward	564.49 <sup>(2)</sup>	Inward	564.05 <sup>(2)</sup>	Inward
Inner	MH2	564.37		564.38		564.18		564.17		564.47		564.94	
Outer	River North	564.75	Inward	565.11 <sup>(2)</sup>	Inward	565.10 <sup>(1)</sup>	Inward	564.87	Inward	564.49 <sup>(2)</sup>	Inward	564.05 <sup>(2)</sup>	Inward
Inner	MH6	557.96		558.10		557.71		557.72		558.05		557.69	
Outer	River Middle	564.58	Inward	564.95	Inward	564.95	Inward	564.74	Inward	564.30	Inward	563.63	Inward
Inner	MH8	562.69		562.93		562.41		562.48		562.79		562.35	
Outer	River South	565.00	Inward	565.37	Inward	565.37	Inward	565.15	Inward	564.74	Inward	564.30	Inward
Inner	MH12	561.50		561.40		561.17		561.03		561.35		561.39	
		12/31/2013		01/30/2014		2/26/2014		3/28/2014		4/25/2014		5/29/2014	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	564.62 <sup>(2)</sup>	Inward	564.80	Inward	564.30 <sup>(2)</sup>	Outward	564.96	Inward	564.45 <sup>(2)</sup>	Inward	564.67 <sup>(2)</sup>	Inward
Inner	MH2	564.41		564.13		567.53		564.10		564.42		564.46	
Outer	River North	564.62 <sup>(2)</sup>	Inward	564.80	Inward	564.30 <sup>(2)</sup>	Inward	564.96	Inward	564.45 <sup>(2)</sup>	Inward	564.67 <sup>(2)</sup>	Inward
Inner	MH6	558.11		557.64		558.01		557.62		558.36		558.41	
Outer	River Middle	564.93 <sup>(1)</sup>	Inward	565.50 <sup>(1)</sup>	Inward	563.98	Inward	564.39	Inward	564.28	Inward	564.60	Inward
Inner	MH8	562.86		562.41		562.81		562.21		563.03		563.20	
Outer	River South	564.87 <sup>(3)</sup>	Inward	565.63	Inward	564.55	Inward	564.38	Inward	564.70	Inward	564.92	Inward
Inner	MH12	561.78		561.65		561.48		561.78		562.08		562.06	

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		06/25/2014		07/29/2014		08/26/2014		09/30/2014		10/29/2014		11/25/2014	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	564.80	Inward	564.90 <sup>(2)</sup>	Inward	564.91	Inward	564.67	Inward	564.81	Inward	565.41	Inward
Inner	MH2	564.38		564.24		564.26		564.01		564.06		563.88	
Outer	River North	564.80	Inward	564.90 <sup>(2)</sup>	Inward	564.91 <sup>(1)</sup>	Inward	564.67	Inward	564.81	Inward	565.41	Inward
Inner	MH6	558.14		557.93		557.84		557.82		557.82		557.44	
Outer	River Middle	564.67	Inward	564.78	Inward	564.77	Inward	564.54	Inward	564.65	Inward	565.43 <sup>(1)</sup>	Inward
Inner	MH8	562.94		562.84		562.58		562.51		562.54		562.09	
Outer	River South	565.11	Inward	565.15	Inward	565.15	Inward	564.96	Inward	565.15	Inward	565.56	Inward
Inner	MH12	561.68		561.37		561.25		560.97		560.87		560.85	
		12/30/2014		01/28/2015		02/24/2015		03/25/2015		04/23/2015		05/29/2015	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	564.20 <sup>(2)</sup>	Outward	564.85	Outward	564.35 <sup>(2)</sup>	Outward	563.61 <sup>(2)</sup>	Outward	564.82	Outward	564.78	Inward
Inner	MH2	567.26		565.50		565.75		564.69		565.70		564.77	
Outer	River North	564.20 <sup>(2)</sup>	Inward	564.85	Inward	564.35 <sup>(2)</sup>	Inward	563.61 <sup>(2)</sup>	Inward	564.82	Inward	564.78	Inward
Inner	MH6	557.71		559.07		559.45		558.97		559.94		558.47	
Outer	River Middle	563.90	Inward	564.78	Inward	564.47 <sup>(1)</sup> NC		563.63	Outward	564.60	Outward	564.65	Inward
Inner	MH8	562.20		563.96		NM		563.76		564.85		563.26	
Outer	River South	564.45	Inward	565.24	Inward	564.80	Inward	563.86	Inward	565.04	Inward	565.05	Inward
Inner	MH12	561.15		562.14		562.51		561.78		562.69		561.28	

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		06/24/2015		07/28/2015		08/27/2015		09/25/2015		10/30/2015		11/25/2015	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	565.15	Inward	565.27	Inward	565.13	Inward	565.01	Inward	564.71	Inward	563.94 <sup>(2)</sup>	Outward
Inner	MH2	564.80		564.79		564.62		564.70		564.69		564.59	
Outer	River North	565.15	Inward	565.27	Inward	565.13	Inward	565.01	Inward	564.71	Inward	563.94 <sup>(2)</sup>	Inward
Inner	MH6	558.20		557.84		557.71		557.81		557.51		557.23	
Outer	River Middle	565.07	Inward	565.16	Inward	565.06	Inward	564.91	Inward	564.49	Inward	563.83	Inward
Inner	MH8	562.96		562.60		562.46		562.53		562.24		561.85	
Outer	River South	565.44	Inward	565.50	Inward	565.47	Inward	565.31	Inward	565.00	Inward	564.19	Inward
Inner	MH12	561.25		561.16		560.96		560.91		560.69		560.35	
		12/30/2015		01/28/2016		02/23/2016		03/31/2016		04/28/2016		05/26/2016	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	564.48 <sup>(2)</sup>	Outward	564.39 <sup>(2)</sup>	Outward	563.91 <sup>(2)</sup>	Outward	564.35 <sup>(2)</sup>	Outward	564.76	Outward	564.82	Outward
Inner	MH2	564.50		564.77		564.86		565.66		566.56		566.95	
Outer	River North	564.48 <sup>(2)</sup>	Inward	564.39 <sup>(2)</sup>	Inward	563.91 <sup>(2)</sup>	Inward	564.35 <sup>(2)</sup>	Inward	564.76	Inward	564.82	Inward
Inner	MH6	557.26		557.42		558.15		559.61		560.20		560.61	
Outer	River Middle	564.18	Inward	564.15	Inward	563.48	Inward	564.20	Outward	564.55	Outward	564.64	Outward
Inner	MH8	561.94		562.05		562.94		564.43		565.05		565.45	
Outer	River South	564.73	Inward	564.64	Inward	564.16	Inward	564.60	Inward	565.04	Inward	565.14	Inward
Inner	MH12	560.14		560.48		560.88		562.06		562.79		563.25	

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		6/30/2016		07/28/2016		08/24/2016		09/27/2016		10/25/2016		11/30/2016	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	565.21	Outward	565.24	Outward	565.22	Outward	565.48	Outward	564.76	Outward	563.73 <sup>(1)</sup>	Outward
Inner	MH2	567.09		567.28		567.40		567.56		567.57		567.37	
Outer	River North	565.21	Inward	565.24	Inward	565.22	Inward	565.48	Inward	564.76	Inward	563.73 <sup>(1)</sup>	Inward
Inner	MH6	561.03		561.01		561.12		561.30		561.25		561.11	
Outer	River Middle	565.09	Outward	565.05	Outward	565.12	Outward	565.38	Outward	564.60	Outward	563.86	Outward
Inner	MH8	565.65		565.79		566.77		566.15		566.08		565.95	
Outer	River South	565.49	Inward	565.48	Inward	565.57	Inward	565.84	Inward	565.19	Inward	564.34	Inward
Inner	MH12	563.62		563.83		563.95		564.14		564.13		564.07	
		12/28/2016		01/31/2017		02/28/2017		03/31/2017		04/27/2017		05/31/2017	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	563.75 <sup>(1)</sup>	Outward	563.53 <sup>(1)</sup>	Outward	563.95 <sup>(1)</sup>	Outward	564.10 <sup>(1)</sup>	Outward	564.91	Outward	565.56	Outward
Inner	MH2	567.41		567.41		567.06		567.37		568.05		568.17	
Outer	River North	563.75 <sup>(1)</sup>	Inward	563.53 <sup>(1)</sup>	Inward	563.95 <sup>(1)</sup>	Inward	564.10 <sup>(1)</sup>	Inward	564.91	Inward	565.56	Inward
Inner	MH6	560.85		560.72		560.36		561.11		561.53		561.73	
Outer	River Middle	563.88	Outward	563.66	Outward	564.08	Outward	564.23	Outward	564.76	Outward	565.29	Outward
Inner	MH8	565.60		565.46		565.23		565.58		566.36		566.53	
Outer	River South	564.45	Inward	564.24	Inward	564.57	Inward	564.96	Inward	565.24	Inward	565.66	Inward
Inner	MH12	563.68		563.44		563.15		563.68		564.40		564.57	

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		06/27/2017		07/26/2017		08/29/2017		09/25/2017		10/24/2017		11/27/2017	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	565.62	Outward	565.42	Outward	565.19	Outward	565.22	Outward	565.37	Outward	564.55	Outward
Inner	MH2	567.87		567.85		567.98		567.81		567.89		567.95	
Outer	River North	565.62	Inward	565.42	Inward	565.19	Inward	565.22	Inward	565.37	Inward	564.55	Inward
Inner	MH6	561.47		561.34		561.52		561.50		561.49		561.59	
Outer	River Middle	565.50	Outward	565.23	Outward	565.04	Outward	565.06	Outward	565.25	Outward	564.40	Outward
Inner	MH8	566.29		566.19		566.44		566.37		566.35		566.45	
Outer	River South	565.93	Inward	565.69	Inward	565.49	Inward	565.50	Inward	565.73	Inward	564.91	Inward
Inner	MH12	564.25		564.24		564.42		564.37		564.37		564.62	
		12/21/2017		01/31/2018		02/26/2018		03/23/2018		04/27/2018		05/23/2018	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	563.96 <sup>(1)</sup>	Outward	565.09	Outward	564.86	Outward	564.86	Outward	565.30	Outward	565.41	Outward
Inner	MH2	567.87		568.03		568.36		568.25		568.56		568.28	
Outer	River North	563.96 <sup>(1)</sup>	Inward	565.09	Inward	564.86	Inward	564.86	Inward	565.30	Inward	565.41	Inward
Inner	MH6	561.45		561.64		561.98		561.11		562.20		561.92	
Outer	River Middle	564.09	Outward	564.59	Outward	564.69	Outward	564.62	Outward	565.09	Outward	565.19	Outward
Inner	MH8	566.32		566.48		566.85		566.70		567.09		566.76	
Outer	River South	564.63	Inward	565.27	Inward	565.14	Inward	565.12	Inward	565.57	Inward	565.61	Inward
Inner	MH12	564.47		564.61		564.04		563.95		565.35		564.98	

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		06/21/2018		07/25/2018		08/27/2018		09/21/2018		10/31/2018		11/21/2018	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	565.29	Outward	565.51	Outward	565.25	Outward	565.30	Outward	565.20	Outward	565.52	Outward
Inner	MH2	568.21		568.14		568.16		568.06		567.93		568.10	
Outer	River North	565.29	Inward	565.51	Inward	565.25	Inward	565.30	Inward	565.20	Inward	565.52	Inward
Inner	MH6	561.91		561.85		561.78		561.71		561.45		561.72	
Outer	River Middle	565.13	Outward	565.40	Outward	565.08	Outward	565.13	Outward	564.99	Outward	565.73 <sup>(2)</sup>	Outward
Inner	MH8	566.69		566.55		566.63		566.54		566.26		566.55	
Outer	River South	565.58	Inward	565.85	Inward	565.56	Inward	565.65	Inward	565.54	Inward	565.98	Inward
Inner	MH12	564.88		564.70		564.68		564.63		564.48		564.83	
		12/20/2018		01/28/2019		02/28/2019		03/26/2019		04/26/2019		05/29/2019	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	564.16 <sup>(1)</sup>	Outward	565.30	Outward	NM	NC	564.95	Outward	565.71	Outward	565.42	Outward
Inner	MH2	568.35		568.38		568.33		568.15		568.56		568.71	
Outer	River North	564.03 <sup>(1)</sup>	Inward	565.30	Inward	NM	NC	564.95	Inward	565.71	Inward	565.42	Inward
Inner	MH6	561.99		562.06		561.94		561.77		562.30		562.49	
Outer	River Middle	564.29	Outward	565.06 <sup>(2)</sup>	Outward	NM	NC	564.72	Outward	565.48	Outward	565.20	Outward
Inner	MH8	566.86		566.89		566.76		566.58		566.96		567.30	
Outer	River South	564.82	Outward	565.31	Inward	NM	NC	565.08	Inward	566.06	Inward	565.73	Inward
Inner	MH12	565.16		565.17		565.15		564.95		565.48		565.58	

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		6/26/2019		7/24/2019		8/28/2019		9/25/2019		10/30/2019		11/26/2019	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	566.11	Outward	565.58	Outward	565.44	Outward	565.47	Outward	565.04	Outward	564.82	Outward
Inner	MH2	568.68		568.45		568.32		568.31		568.37		568.32	
Outer	River North	566.11	Inward	565.58	Inward	565.44	Inward	565.47	Inward	565.04	Inward	564.82	Inward
Inner	MH6	562.39		562.12		561.99		561.93		561.96		562.00	
Outer	River Middle	565.89	Outward	565.38	Outward	565.28	Outward	565.27	Outward	564.79	Outward	564.58	Outward
Inner	MH8	567.16		566.89		566.76		566.68		566.74		566.81	
Outer	River South	566.44	Inward	565.82	Inward	565.78	Inward	565.78	Inward	565.37	Inward	565.25	Inward
Inner	MH12	565.41		565.16		564.98		564.91		564.94		565.15	
		12/23/2019		1/29/2020		2/26/2020		3/25/2020		5/11/2020		5/26/2020	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	564.94	Outward	565.04	Outward	564.65	Outward	565.27	Outward	565.60	Outward	565.82	Outward
Inner	MH2	568.54		568.86		568.75		568.84		568.70		568.73	
Outer	River North	564.94	Inward	565.04	Inward	564.65	Inward	565.27	Inward	565.60	Inward	565.82	Inward
Inner	MH6	562.27		562.54		562.42		562.51		562.44		562.41	
Outer	River Middle	564.59	Outward	564.72	Outward	564.85 <sup>(2)</sup>	Outward	564.85	Outward	565.29	Outward	565.60	Outward
Inner	MH8	567.10		567.38		567.26		567.37		566.97		567.19	
Outer	River South	565.23	Outward	565.35	Outward	565.10	Outward	565.43	Outward	566.01	Inward	566.10	Inward
Inner	MH12	565.46		565.80		565.68		565.79		565.69		565.56	

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		6/29/2020		7/28/2020		8/26/2020		9/29/2020		10/28/20		11/26/2020	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	565.60	Outward	565.61	Inward	565.62	Inward	565.51	Inward	565.31	Inward	564.60	Inward
Inner	MH2	566.65		560.96		559.81		561.02		560.82		561.12	
Outer	River North	565.60	Inward	565.61	Inward	565.62	Inward	565.51	Inward	565.31	Inward	564.60	Inward
Inner	MH6	561.64		560.30		559.61		558.84		557.44		556.31	
Outer	River Middle	565.37	Outward	565.37	Outward	565.39	Outward	565.25	Inward	564.99	Inward	564.24	Inward
Inner	MH8	567.17		566.76		565.98		564.51		562.54		559.28	
Outer	River South	565.88	Inward	565.87	Inward	565.94	Inward	565.87	Inward	565.57	Inward	564.90	Inward
Inner	MH12	565.44		565.15		564.48		563.77		563.19		562.68	
		12/22/20		1/28/2021		2/24/2021		3/31/2021		4/28/2021		5/25/2021	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	564.79	Inward	564.71	Inward	563.87 <sup>(1)</sup>	Inward	564.79	Inward	565.04	Inward	565.22	Inward
Inner	MH2	560.67		561.30		561.39		560.70		561.00		561.41	
Outer	River North	564.79	Inward	564.71	Inward	563.87 <sup>(1)</sup>	Inward	564.79	Inward	565.04	Inward	565.22	Inward
Inner	MH6	556.45		557.71		556.37		556.77		557.14		557.34	
Outer	River Middle	564.37	Inward	564.28	Inward	564.00	Inward	564.42	Inward	564.71	Inward	564.86	Inward
Inner	MH8	558.79		560.33		559.05		559.45		559.19		559.75	
Outer	River South	565.08	Inward	564.53 <sup>(4)</sup>	Inward	564.25 <sup>(4)</sup>	Inward	565.01	Inward	564.94	Inward	565.51	Inward
Inner	MH12	562.79		563.14		562.68		562.88		562.80		562.68	

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		6/30/2021		7/28/2021		8/30/2021		9/30/2021		10/25/21		11/30/21	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	565.31	Inward	565.44	Inward	565.17	Inward	565.12	Inward	564.51 <sup>(1)</sup>	Inward	564.72	Inward
Inner	MH2	560.10		561.36		561.36		559.82		561.37		559.97	
Outer	River North	565.31	Inward	565.44	Inward	565.17	Inward	565.12	Inward	564.51 <sup>(1)</sup>	Inward	564.72	Inward
Inner	MH6	557.25		557.54		557.37		557.51		557.20		557.30	
Outer	River Middle	565.00	Inward	565.13	Inward	564.97	Inward	564.77	Inward	564.64	Inward	564.27	Inward
Inner	MH8	559.28		561.37		560.38		560.13		560.38		560.71	
Outer	River South	565.62	Inward	565.72	Inward	565.59	Inward	565.36	Inward	565.27	Inward	564.86	Inward
Inner	MH12	562.26		562.75		562.44		562.55		562.96		563.42	
		12/22/21		1/28/2022		2/28/2022		3/30/2022		4/29/2022		5/23/2022	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	565.38	Inward	(5)	(5)	564.68	Inward	564.54	Inward	564.70	Inward	564.79	Inward
Inner	MH2	560.62		559.92		560.15		559.99		561.34		561.30	
Outer	River North	565.38	Inward	(5)	(5)	564.68	Inward	564.54	Inward	564.70	Inward	564.79	Inward
Inner	MH6	557.34		557.02		558.16		558.37		558.01		558.23	
Outer	River Middle	(5)	(5)	(5)	(5)	564.35	Inward	564.30	Inward	564.38	Inward	564.38	Inward
Inner	MH8	561.85		559.84		563.86		564.14		563.09		563.25	
Outer	River South	(5)	(5)	(5) <sup>(3)</sup>	(5)	565.00	Inward	564.86	Outward	564.92	Inward	565.44	Inward
Inner	MH12	563.49		563.19		563.79		564.88		563.70		563.49	

Table 2.3

**Summary of Horizontal Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

		7/5/2022		7/28/2022		8/31/2022		9/28/2022		11/01/22		11/28/22	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	565.09	Outward	565.28	Inward	565.24	Inward	564.80	Inward	565.34	Inward	564.63	Inward
Inner	MH2	566.18		560.19		561.45		560.20		561.31		560.18	
Outer	River North	565.09	Inward	565.28	Inward	565.24	Inward	564.80	Inward	565.34	Inward	564.63	Inward
Inner	MH6	559.87		558.32		557.83		557.92		557.60		558.14	
Outer	River Middle	564.77	Inward	565.01	Inward	564.96	Inward	564.55	Inward	564.30	Inward	563.73	Inward
Inner	MH8	561.25		560.30		558.95		560.34		559.71		559.97	
Outer	River South	565.38	Inward	565.58	Inward	565.48	Inward	565.15	Inward	564.63	Inward	564.47	Inward
Inner	MH12	563.11		562.95		562.56		562.38		562.88		563.32	
		12/30/22		1/27/2023		2/24/2023		3/31/2023		4/28/2023		5/30/2023	
		Water Level (ft amsl)	Gradient Direction										
<b>Monitoring Location</b>													
Outer	River North	564.93	Inward	564.68	Inward	(5)	(5)	564.69	Inward	564.99	Inward	565.04	Inward
Inner	MH2	560.80		560.89		562.11		561.06		560.61		560.69	
Outer	River North	564.93	Inward	564.68	Inward	(5)	(5)	564.69	Inward	564.99	Inward	565.04	Inward
Inner	MH6	559.63		561.67		561.83		561.68		561.49		561.13	
Outer	River Middle	564.64	Inward	564.37	Inward	(5)	(5)	564.30	Outward	564.70	Outward	564.76	Outward
Inner	MH8	561.34		564.09		563.86		566.39		566.12		565.48	
Outer	River South	564.84	Inward	564.74	Inward	(5)	(5)	564.63	Outward	565.29	Inward	565.30	Inward
Inner	MH12	563.68		564.17		563.87		564.84		564.73		565.26	
<b>Notes:</b>													
(1) River level too low to obtain a measurement. Water level shown is River Middle water level minus 0.13 feet.													
(2) River level too low to obtain a measurement. Water level shown is River South Water level minus 0.25 feet.													
(3) River level too low to obtain a measurement. Lowest recorded level (i.e., 563.92) since start of system operation used.													
(4) River level too low to obtain a measurement. Water level shown is River Middle water level plus 0.25 feet.													
(5) River levels not measured due to ice building up													
NM - Not Measured													
NC - Not Calculated													

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>		<b>06/27/2013</b>		<b>07/24/2013</b>		<b>08/22/2013</b>		<b>09/30/2013</b>		<b>10/30/2013</b>		<b>11/27/2013</b>	
		<b>Location</b>	<b>Water Level (ft amsl)</b>	<b>Gradient Direction</b>	<b>Water Level (ft amsl)</b>								
Upper	MH3	559.69	Upward	560.60	Upward	560.40	Upward	560.68	Upward	560.63	Upward	560.33	Upward
Lower	MW-6	564.59		564.52		564.24		564.28		564.64		564.52	
Upper	MH8	562.69	Upward	562.95	Upward	562.41	Upward	562.40	Upward	562.79	Upward	562.35	Upward
Lower	MW-7	562.86		563.28		562.46		562.48		562.98		562.40	
Upper	MH11	563.08	Upward	563.04	Upward	562.87	Upward	562.73	Upward	561.96	Upward	563.08	Upward
Lower	MW-8	563.61		563.56		563.37		563.23		563.53		563.58	
Average <sup>(1)</sup>		565.33	Upward	565.06	Upward	564.80	Upward	564.71	Upward	565.14	Upward	565.19	Upward
Lower	MW-9	565.66		565.47		565.19		565.05		565.50		565.47	
<b>Monitoring</b>		<b>12/31/2013</b>		<b>01/30/2014</b>		<b>2/26/2014</b>		<b>3/28/2014</b>		<b>4/25/2014</b>		<b>5/29/2014</b>	
<b>Location</b>		<b>Water Level (ft amsl)</b>	<b>Gradient Direction</b>										
Upper	MH3	561.39	Upward	559.88	Upward	570.48	Downward	559.36	Upward	560.21	Upward	559.12	Upward
Lower	MW-6	564.74		564.14		565.29		564.01		564.74		564.71	
Upper	MH8	562.86	Upward	562.41	Downward	562.81	Downward	562.21	Downward	563.03	Downward	563.20	Upward
Lower	MW-7	563.09		562.40		562.78		562.01		562.95		563.21	
Upper	MH11	563.53	Upward	563.40	Upward	563.28	Upward	563.58	Upward	563.90	Upward	564.01	Upward
Lower	MW-8	564.06		563.95		563.83		564.10		564.44		564.37	
Average <sup>(1)</sup>		565.42	Upward	565.18	Upward	565.22	Upward	565.61	Upward	565.87	Upward	565.71	Upward
Lower	MW-9	565.76		565.52		565.46		565.93		566.12		565.77	

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>		<b>06/25/2014</b>		<b>07/29/2014</b>		<b>08/26/2014</b>		<b>09/30/2014</b>		<b>10/29/2014</b>		<b>11/25/2014</b>	
		<b>Location</b>	<b>Water Level</b> <b>(ft amsl)</b>	<b>Gradient</b>	<b>Water Level</b> <b>(ft amsl)</b>								
Upper	MH3	560.62	Upward	560.42	Upward	561.12	Upward	560.65	Upward	559.77	Upward	560.70	Upward
Lower	MW-6	564.46		564.28		564.26		564.07		564.09		563.89	
Upper	MH8	562.88	Upward	562.72	Upward	562.58	Downward	562.51	Downward	562.54	Downward	562.09	Downward
Lower	MW-7	562.94		562.84		562.49		562.36		562.35		561.92	
Upper	MH11	563.53	Upward	563.41	Upward	563.11	Upward	562.89	Upward	562.78	Upward	562.71	Upward
Lower	MW-8	564.03		563.75		563.61		563.31		563.23		563.18	
Average <sup>(1)</sup>		565.33	Upward	564.94	Upward	564.91	Upward	564.67	Upward	564.54	Upward	564.56	Upward
Lower	MW-9	565.60		565.21		565.20		564.89		564.77		564.76	
<b>Monitoring</b>		<b>12/30/2014</b>		<b>01/28/2015</b>		<b>2/24/2015</b>		<b>3/25/2015</b>		<b>4/23/2015</b>		<b>5/29/2015</b>	
<b>Location</b>		<b>Water Level</b> <b>(ft amsl)</b>	<b>Gradient</b>										
		<b>Water Level</b> <b>(ft amsl)</b>	<b>Gradient</b>										
Upper	MH3	571.05	Downward	565.06	Downward	565.39	Downward	560.93	Upward	560.48	Upward	561.40	Upward
Lower	MW-6	564.53		564.82		565.18		565.07		565.89		564.58	
Upper	MH8	562.31	Downward	563.96	Upward	NM	NA	563.76	Upward	564.85	Upward	563.26	Upward
Lower	MW-7	562.20		564.72		565.17		564.14		565.34		563.59	
Upper	MH11	562.98	Upward	564.19	Upward	NM	NA	563.88	Upward	564.86	Upward	563.36	Upward
Lower	MW-8	563.43		564.70		565.15		564.44		565.41		563.93	
Average <sup>(1)</sup>		564.86	Upward	565.03	Downward	NM	NA	NM	NA	566.11	Upward	565.30	Upward
Lower	MW-9	565.13		564.26		565.41		566.11		566.41		565.56	

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Monitoring		06/24/2015		07/28/2015		08/28/2015		09/25/2015		10/30/2015		11/30/2015			
Location		Water Level (ft amsl)	Gradient Direction												
Upper	MH3	560.99	Upward	559.51	Upward	559.38	Upward	559.57	Upward	560.63	Upward	560.10	Upward		
Lower	MW-6	564.62		564.53		564.29		564.47		564.31		564.23			
Upper	MH8	562.96	Upward	562.60	Upward	562.46	Downward	562.53	Upward	562.24	Upward	561.85	Downward		
Lower	MW-7	563.10		562.76		562.41		562.55		562.34		561.80			
Upper	MH11	563.33	Upward	563.27	Upward	563.09	Upward	563.20	Upward	562.82	Upward	562.52	Upward		
Lower	MW-8	563.87		563.84		563.60		563.58		563.34		563.03			
Average <sup>(1)</sup>		565.26	Upward	565.14	Upward	564.86	Upward	564.91	Upward	563.80	Upward	562.20	Upward		
Lower	MW-9	565.54		565.38		565.14		565.16		564.25		563.61			
		12/30/2015		01/28/2016		2/23/2016		3/31/2016		4/28/2016		5/26/2016			
Location		Water Level (ft amsl)	Gradient Direction												
Upper	MH3	560.89	Upward	560.05	Upward	560.75	Upward	560.53	Upward	561.19	Upward	559.81	Upward		
Lower	MW-6	564.18		564.48		564.69		565.97		566.08		566.38			
Upper	MH8	561.94	Upward	562.05	Downward	562.94	Upward	564.43	Upward	565.05	Upward	565.45	Upward		
Lower	MW-7	562.35		561.98		563.51		564.91		565.69		566.20			
Upper	MH11	562.22	Upward	562.68	Upward	563.03	Upward	564.19	Upward	564.97	Downward	565.42	Downward		
Lower	MW-8	562.79		563.18		563.54		564.76		564.49		565.14			
Average <sup>(1)</sup>		562.10	Upward	562.00	Upward	562.34	Upward	561.44	Upward	562.38	Upward	561.85	Upward		
Lower	MW-9	563.10		563.44		563.55		564.54		565.27		565.61			

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring Location</b>															
	06/30/2016		07/28/2016		08/24/2016		09/27/2016		10/25/2016		11/30/2016				
	<b>Water Level</b> <b>(ft amsl)</b>	<b>Gradient</b> <b>Direction</b>													
Upper	MH3	561.03	Upward	559.17	Upward	559.53	Upward	561.19	Upward	565.12	Upward	561.33	Upward		
Lower	MW-6	565.18		566.67		566.81		566.98		566.97		564.39			
Upper	MH8	565.13	Upward	565.79	Upward	565.96	Upward	566.15	Upward	566.08	Upward	565.95	Upward		
Lower	MW-7	566.44		566.61		566.67		566.94		566.84		566.75			
Upper	MH11	565.77	Upward	565.99	Upward	566.09	Upward	566.33	Upward	566.29	Upward	566.23	Upward		
Lower	MW-8	566.30		566.55		566.62		566.84		566.85		566.74			
Average <sup>(1)</sup>		567.85	Downward	568.26	Downward	568.52	Downward	568.45	Downward	567.12	Downward	567.90	Downward		
Lower	MW-9	566.36		566.62		566.64		566.87		566.86		566.88			
<b>Monitoring Location</b>															
	12/28/2016		01/31/2017		02/28/2017		03/31/2017		04/27/2017		05/31/2017				
	<b>Water Level</b> <b>(ft amsl)</b>	<b>Gradient</b> <b>Direction</b>													
Upper	MH3	561.39	Upward	560.44	Upward	560.62	Upward	559.48	Upward	560.59	Upward	559.79	Upward		
Lower	MW-6	566.82		566.67		566.44		566.78		567.45		567.57			
Upper	MH8	565.60	Upward	565.46	Upward	565.23	Upward	565.58	Upward	566.36	Upward	566.53	Upward		
Lower	MW-7	566.37		566.18		565.88		566.36		567.14		567.34			
Upper	MH11	565.75	Upward	565.58	Upward	565.32	Upward	565.82	Upward	566.59	Upward	566.88	Upward		
Lower	MW-8	566.35		566.09		565.85		566.35		567.14		567.27			
Average <sup>(1)</sup>		561.74	Upward	561.80	Upward	561.25	Upward	562.16	Upward	562.85	Upward	563.20	Upward		
Lower	MW-9	566.50		566.22		565.92		566.47		567.26		567.40			

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Monitoring Location		06/27/2017		07/26/2017		08/29/2017		09/25/2017		10/24/2017		11/27/2017	
		Water Level (ft amsl)	Gradient Direction										
		Upper	MH3	559.53	Upward	561.04	Upward	559.69	Upward	560.63	Upward	560.12	Upward
Lower	MW-6	567.28		567.25		567.37		567.24		567.32		567.37	
Upper	MH8	566.29	Upward	566.19	Upward	566.44	Upward	566.37	Upward	566.35	Upward	566.45	Upward
Lower	MW-7	567.03		566.96		567.21		567.21		567.12		567.17	
Upper	MH11	565.39	Upward	566.38	Upward	566.58	Upward	566.53	Upward	566.51	Upward	566.77	Upward
Lower	MW-8	566.94		566.90		567.12		567.06		567.08		567.34	
Average <sup>(1)</sup>		563.69	Upward	563.19	Upward	563.79	Upward	563.88	Upward	563.47	Upward	564.13	Upward
Lower	MW-9	567.02		567.05		567.23		567.05		567.12		567.41	
Monitoring Location		12/21/2017		01/31/2018		02/26/2018		03/23/2018		04/27/2018		05/23/2018	
		Water Level (ft amsl)	Gradient Direction										
		Upper	MH3	560.98	Upward	559.93	Upward	560.72	Upward	561.20	Upward	559.09	Upward
Lower	MW-6	567.27		567.48		567.73		567.61		567.92		567.68	
Upper	MH8	566.32	Upward	566.48	Upward	566.85	Upward	566.70	Upward	567.09	Upward	566.76	Upward
Lower	MW-7	567.08		567.36		567.65		567.48		567.86		567.57	
Upper	MH11	566.62	Upward	566.82	Upward	567.13	Upward	567.11	Upward	567.49	Upward	567.09	Upward
Lower	MW-8	567.19		567.46		567.71		567.63		568.00		567.66	
Average <sup>(1)</sup>		564.38	Upward	564.45	Upward	564.96	Upward	565.10	Upward	564.77	Upward	564.63	Upward
Lower	MW-9	567.30		567.60		567.81		567.79		568.21		567.95	

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Monitoring Location		06/11/2018		07/25/2018		08/27/2018		09/21/2018		10/31/2018		11/21/2018	
		Water Level	Gradient										
		(ft amsl)	Direction										
Upper	MH3	555.80	Upward	558.78	Upward	560.13	Upward	559.41	Upward	559.80	Upward	559.70	Upward
Lower	MW-6	567.61		567.57		567.55		565.08		567.30		567.48	
Upper	MH8	566.69	Upward	566.55	Upward	566.63	Upward	566.54	Upward	566.26	Upward	566.55	Upward
Lower	MW-7	567.18		567.09		567.10		566.97		566.75		567.06	
Upper	MH11	567.05	Upward	566.87	Upward	566.85	Upward	566.80	Upward	566.63	Upward	566.98	Upward
Lower	MW-8	567.56		567.39		567.37		567.34		567.19		567.55	
Average <sup>(1)</sup>		564.70	Upward	565.13	Upward	565.18	Upward	564.96	Upward	565.62	Upward	566.28	Upward
Lower	MW-9	567.72		567.46		567.53		567.41		567.34		567.69	
Monitoring Location		12/20/2018		01/28/2019		02/28/2019		03/26/2019		04/26/2019		05/29/2019	
		Water Level	Gradient										
		(ft amsl)	Direction										
Upper	MH3	559.91	Upward	560.2	Upward	559.05	Upward	560.19	Upward	558.73	Upward	559.20	Upward
Lower	MW-6	567.71		567.8		567.68		567.53		567.96		568.13	
Upper	MH8	566.86	Upward	566.89	Upward	566.76	Upward	566.58	Upward	566.96	Upward	567.30	Upward
Lower	MW-7	567.38		567.44		567.40		567.22		567.80		568.02	
Upper	MH11	567.30	Upward	567.32	Upward	567.29	Upward	567.08	Upward	567.62	Upward	567.78	Upward
Lower	MW-8	567.84		567.95		567.85		567.63		568.15		568.30	
Average <sup>(1)</sup>		567.77	Upward	567.82	Upward	567.87	Upward	567.63	Upward	568.08	Upward	568.17	Upward
Lower	MW-9	567.96		568.07		568.05		567.81		568.31		568.48	

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Monitoring Location		6/26/2019		7/24/2019		8/28/2019		9/25/2019		10/30/2019		11/26/2019	
		Water Level	Gradient										
		(ft amsl)	Direction										
Upper	MH3	558.83	Upward	560.45	Upward	558.55	Upward	558.86	Upward	559.29	Upward	558.13	Upward
Lower	MW-6	568.04		567.82		567.73		567.69		567.74		567.71	
Upper	MH8	567.16	Upward	566.89	Upward	566.76	Upward	566.68	Upward	566.74	Upward	566.81	Upward
Lower	MW-7	567.93		567.69		567.55		567.48		567.52		567.64	
Upper	MH11	567.58	Upward	567.30	Upward	567.13	Upward	567.05	Upward	567.09	Upward	567.28	Upward
Lower	MW-8	568.09		567.82		567.66		567.56		567.61		567.80	
Average <sup>(1)</sup>		568.02	Upward	567.74	Upward	567.32	Upward	565.17	Upward	565.04	Upward	565.25	Upward
Lower	MW-9	568.28		567.95		567.73		567.63		567.71		567.93	
Monitoring Location		12/23/2019		1/29/2020		2/26/2020		3/25/2020		5/11/2020		5/26/2020	
		Water Level	Gradient										
		(ft amsl)	Direction										
Upper	MH3	559.53	Upward	558.6	Upward	560.28	Upward	559.19	Upward	558.53	Upward	560.23	Upward
Lower	MW-6	567.94		568.23		568.13		568.22		567.97		568.08	
Upper	MH8	567.10	Upward	567.38	Upward	567.26	Upward	567.37	Upward	566.97	Upward	567.19	Upward
Lower	MW-7	567.92		568.2		568.06		568.20		568.08		567.66	
Upper	MH11	567.60	Upward	567.92	Upward	567.83	Upward	567.97	Upward	567.82	Upward	567.84	Upward
Lower	MW-8	568.09		568.43		568.36		568.45		568.32		568.16	
Average <sup>(1)</sup>		565.69	Upward	565.54	Upward	566.10	Upward	565.48	Upward	565.75	Upward	565.46	Upward
Lower	MW-9	568.25		568.58		568.50		568.65		568.52		568.37	

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Monitoring Location		6/29/2020		7/28/2020		8/26/2020		9/29/2020		10/28/2020		11/30/2020	
		Water Level	Gradient										
		(ft amsl)	Direction										
Upper	MH3	565.40	Upward	560.07	Upward	558.13	Upward	560.12	Upward	559.89	Upward	560.29	Upward
Lower	MW-6	566.97		564.84		564.12		563.42		563.16		562.94	
Upper	MH8	567.17	Upward	566.76	Upward	565.98	Upward	564.51	Upward	562.54	Upward	559.28	Upward
Lower	MW-7	567.73		567.28		566.68		565.46		563.49		561.28	
Upper	MH11	567.60	Upward	567.30	Upward	566.68	Upward	565.90	Upward	565.34	Upward	564.79	Upward
Lower	MW-8	568.13		567.80		567.19		566.33		565.88		565.30	
Average <sup>(1)</sup>		565.62	Upward	565.79	Upward	565.16	Upward	564.54	Upward	564.62	Upward	563.73	Upward
Lower	MW-9	568.21		567.99		567.40		566.66		566.12		565.74	
Monitoring Location		12/22/2020		1/28/2021		2/24/2021		3/31/2021		4/28/2021		5/25/2021	
		Water Level	Gradient										
		(ft amsl)	Direction										
Upper	MH3	559.88	Upward	560.37	Upward	560.52	Upward	559.82	Upward	560.02	Upward	560.48	Upward
Lower	MW-6	562.91		562.88		562.68		562.76		562.81		562.77	
Upper	MH8	558.79	Upward	560.33	Upward	559.05	Upward	559.45	Upward	559.19	Upward	559.75	Upward
Lower	MW-7	561.40		561.27		561.14		561.65		561.28		561.29	
Upper	MH11	564.95	Upward	565.25	Upward	564.82	Upward	564.97	Upward	564.90	Upward	564.77	Upward
Lower	MW-8	565.45		565.78		565.33		565.54		565.48		565.71	
Average <sup>(1)</sup>		563.67	Upward	563.92	Upward	563.68	Upward	564.04	Upward	564.35	Upward	563.78	Upward
Lower	MW-9	565.84		566.19		565.74		565.92		565.86		565.75	

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Monitoring Location		6/30/2021		7/28/2021		8/30/2021		9/30/2021		10/25/21		11/30/21	
		Water Level	Gradient										
		(ft amsl)	Direction										
Upper	MH3	558.04	Upward	560.32	Upward	560.46	Upward	557.91	Upward	560.41	Upward	558.52	Upward
Lower	MW-6	565.59		562.69		562.59		562.72		562.76		562.84	
Upper	MH8	559.28	Upward	561.37	Upward	560.38	Upward	560.13	Upward	560.38	Upward	560.71	Upward
Lower	MW-7	560.85		562.42		560.95		561.50		561.86		562.08	
Upper	MH11	564.35	Upward	565.02	Upward	564.56	Upward	564.72	Upward	564.98	Upward	565.53	Upward
Lower	MW-8	564.89		565.46		565.08		565.28		565.59		566.15	
Average <sup>(1)</sup>		563.32	Upward	563.71	Upward	563.89	Upward	563.64	Upward	564.38	Upward	564.58	Upward
Lower	MW-9	565.40		565.88		565.54		565.71		566.02		566.55	
Monitoring Location		12/22/21		1/28/2022		2/28/2022		3/30/2022		4/29/2022		5/23/2022	
		Water Level	Gradient										
		(ft amsl)	Direction										
Upper	MH3	559.65	Upward	558.8	Upward	558.56	Upward	558.43	Upward	560.41	Upward	560.32	Upward
Lower	MW-6	562.96		562.82		563.36		563.44		563.22		563.10	
Upper	MH8	561.85	Upward	559.84	Upward	563.86	Upward	564.14	Upward	563.09	Upward	563.25	Upward
Lower	MW-7	562.69		561.45		564.68		565.05		563.78		563.99	
Upper	MH11	565.63	Upward	565.32	Upward	565.93	Upward	566.02	Upward	565.86	Upward	565.65	Upward
Lower	MW-8	566.15		565.83		566.51		566.52		566.38		566.37	
Average <sup>(1)</sup>		564.44	Upward	564.78	Upward	565.20	Upward	564.76	Upward	564.75	Upward	564.61	Upward
Lower	MW-9	566.57		566.24		566.93		567.00		566.84		566.60	

Table 2.4

**Summary of Vertical Gradients**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Monitoring Location	7/5/2022		7/28/2022		8/31/2022		9/28/2022		11/01/22		11/28/22		
	Water Level (ft amsl)	Gradient Direction											
Upper	MH3	565.21	Upward	559.80	Upward	560.45	Upward	558.93	Upward	560.68	Upward	558.59	Upward
Lower	MW-6	565.57		563.76		564.95		562.98		563.02		563.47	
Upper	MH8	561.25	Upward	560.30	Upward	558.95	Upward	560.34	Upward	559.71	Upward	559.97	Upward
Lower	MW-7	562.42		562.71		560.85		561.26		561.42		561.37	
Upper	MH11	565.29	Upward	565.22	Upward	564.65	Upward	564.53	Upward	564.98	Upward	565.61	Upward
Lower	MW-8	565.80		565.44		565.21		565.00		565.80		565.93	
Average <sup>(1)</sup>		563.93	Upward	564.16	Upward	564.16	Upward	563.76	Upward	564.05	Upward	564.52	Upward
Lower	MW-9	566.13		566.58		565.92		565.52		565.82		566.28	
Monitoring Location	12/30/22		1/27/2023		2/24/2023		3/31/2023		4/28/2023		5/30/2023		
	Water Level (ft amsl)	Gradient Direction											
Upper	MH3	559.40	Upward	559.9	Upward	561.17	Upward	559.45	Upward	559.48	Upward	558.66	Upward
Lower	MW-6	565.39		567.54		567.64		567.34		567.07		566.77	
Upper	MH8	561.34	Upward	564.09	Upward	563.86	Upward	566.39	Upward	566.12	Upward	565.48	Upward
Lower	MW-7	562.74		565.5		565.16		566.89		566.91		566.45	
Upper	MH11	565.80	Upward	566.3	Upward	566.17	Upward	566.88	Upward	567.08	Upward	566.57	Upward
Lower	MW-8	566.32		566.74		566.54		567.43		567.35		566.94	
Average <sup>(1)</sup>		559.64	Upward	565.31	Upward	565.00	Upward	565.62	Upward	565.73	Upward	565.31	Upward
Lower	MW-9	566.70		567.32		566.77		567.62		567.69		567.26	
Notes:													
NA - Not Applicable.													
NM - Not monitored.													
(1) - Distance weighted for MH14 (two thirds) and MH15 (one third).													
(2) - Buried with snow.													
(3) - Not Monitored - MH14 was buried with snow and could not be accessed.													

Table 2.5

Page 1 of 1

**Groundwater Sampling Summary**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>LOCATIONS</b>					
OGC1	MW-6				
OGC2	MW-7				
OGC3	MW-8				
OGC4	MW-9				
OGC5	OGC6				
OGC7	OGC8				
<b>FREQUENCY</b>					
Annual - MW-6, MW-8, MW-9, OGC-3, OGC-6, OGC-7					
Every Two Years (Even Years) - MW-7, OGC-1, OGC-2, OGC-4, OGC-5, OGC-8					
<b>PARAMETERS</b>					
<b>Volatiles</b>					
Acetone					Methylene Chloride
Benzene					Tetrachloroethene
2-Butanone					Toluene
Chlorobenzene					Trichloroethene
1,1-Dichloroethane					Vinyl Chloride
trans-1,2-Dichloroethene					Xylenes (Total)
Ethylbenzene					
<b>Semi-Volatiles</b>					
1,2-Dichlorobenzene					4-Methylphenol
1,4-Dichlorobenzene					Naphthalene
2,4-Dimethylphenol					Di-n-octylphthalate
2-Methylphenol					Phenol

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location			MW-6											
			05/18/01	08/21/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	05/14/04	05/27/05
Date	Class GA Level													
<b>Volatiles (µg/L)</b>														
Acetone	50							4.4J			44		6.7	13
Benzene	1		0.64J				0.65J	0.59J	0.56J		0.57J			
2-Butanone	50													
Chlorobenzene	5		1.5J	1.3J			0.65J		0.54J		0.81J		0.37J	
trans-1,2-Dichloroethene	5		1.1J				0.37J	0.32J	0.34J		1.4		0.52J	
Ethylbenzene	5		0.21J											
Methylene Chloride	5				1.8J									2.1
Tetrachloroethene	5		0.44J								0.67J		0.25J	
Toluene	5		2.2J	0.29J		1.3	0.91J	1.1		2.1	3.6	0.92J		
Trichloroethene	5		2.0J		1.2J		1.1	1.5	3.2	14	12	3.7	1.5	
Vinyl Chloride	2						0.29J	0.24J	0.22J		0.52J			
Total Xylenes	5		0.90J	0.44J			0.36J	0.27J						
<b>Total VOCs</b>		<b>0</b>	<b>8.99</b>	<b>2.03</b>	<b>3</b>	<b>3.62</b>	<b>7.83</b>	<b>4.26</b>	<b>3.2</b>	<b>64.07</b>	<b>15.6</b>	<b>12.46</b>	<b>16.6</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3													
1,4-Dichlorobenzene	3	1J		0.7J	2J							2J		
2,4-Dimethylphenol	50	5J	5J	3J	2J	1J	0.9J	9J				6J		
2-Methylphenol	NL	5J	6J	2J	2J	2J	1J	0.9J				5J		
4-Methylphenol	NL	15	13	5J	4J	3J	2J	2J				12		
Naphthalene	10	67	69			1J		14	13			76		5J
Di-n-octyl phthalate	50				2J									
Phenol	1	14	4J	2J	0.8J							250		
<b>Total SVOCs</b>		<b>107</b>	<b>97</b>	<b>12.7</b>	<b>13.8</b>	<b>6</b>	<b>17.9</b>	<b>24.9</b>	<b>0</b>	<b>0</b>	<b>351</b>	<b>0</b>	<b>5</b>	
Notes:														
NL - Not listed														
- Exceeds Class GA Level														
NS - Not Sampled														
J - Estimated														
Blank = Non-Detect														

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	MW-6													
			05/30/06	05/24/07	05/29/08	05/26/10	05/30/12	05/29/14	05/27/16	05/23/18	05/29/19	05/11/20	08/16/21	04/28/22	04/28/23	
<b>Volatiles (µg/L)</b>																
Acetone	50	31								8.6J	11					
Benzene	1									1.7	1.8					
2-Butanone	50															
Chlorobenzene	5									7.5	10	17 J	0.77 J			
trans-1,2-Dichloroethene	5									8.8	11				18	
Ethylbenzene	5									0.54J						
Methylene Chloride	5															
Tetrachloroethene	5				0.55J					3.4	6.3	11 J			16	
Toluene	5				0.73J					16	22	32	0.75 J		1.8J	
Trichloroethene	5	1.2	0.97J		2.3J	0.66J	1.0			20	28	44	0.78 J		25	
Vinyl Chloride	2										1.5					
Total Xylenes	5									1.6J	1.7 J					
<b>Total VOCs</b>			<b>32.2</b>	<b>0.97</b>	<b>0.0</b>	<b>3.58</b>	<b>0.66</b>	<b>1.00</b>	<b>0.00</b>	<b>68.14</b>	<b>93.30</b>	<b>104.00</b>	<b>2.30</b>	<b>0.00</b>	<b>60.80</b>	
<b>Semi-Volatiles (µg/L)</b>																
1,2-Dichlorobenzene	3				0.66J							8.1 J	0.46 J		2.7J	
1,4-Dichlorobenzene	3		0.8J	0.6J	4.2J	2.9J	2.9J	1.5J	28J	73 J	140	6.4 J			51	
2,4-Dimethylphenol	50				1.4J	1.4J	1.0J	0.87J	36J	59 J	92	2.7 J			10	
2-Methylphenol	NL		0.5J	0.3J	1.8J	0.71J	1.1J	0.47J	31J	46 J	66	2.0 J			11	
4-Methylphenol	NL	1J	1J		2.5J	1.3J	1.0J			93	120 J	200	3.9 J			28
Naphthalene	10		2J	1J	7.8J	3.9J		2.0J								
Di-n-octyl phthalate	50															
Phenol	1	2J	0.6J	0.4J	1.9J		4.4J		2300	2900	4700				610	
<b>Total SVOCs</b>			<b>3</b>	<b>4.9</b>	<b>2.3</b>	<b>20.26</b>	<b>10.21</b>	<b>10.4</b>	<b>4.84</b>	<b>2488</b>	<b>3198</b>	<b>5206.1</b>	<b>15.46</b>	<b>0</b>	<b>712.7</b>	
Notes:																
NL - Not listed																
- Exceeds Class GA Level																
NS - Not Sampled																
J - Estimated																
Blank = Non-Detect																

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location			MW-7													
			05/18/01	08/20/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	05/14/04	05/27/05	05/31/06	
		Class GA Level														
<b>Volatiles (µg/L)</b>																
Acetone	50	5.7J		6.5J			4.3J	5.4			4.8				4.3J	3.0J
Benzene	1		1.9	2.0			2.0	1.3	1.8		0.90				0.58J	
2-Butanone	50															
Chlorobenzene	5															
trans-1,2-Dichloroethene	5		0.82J	1.1J			0.98J	0.89J	1						0.36J	
Ethylbenzene	5		0.85J	0.81J			1.0	0.61J	0.75J						0.32J	
Methylene Chloride	5				1.6J											
Tetrachloroethene	5			0.27J												
Toluene	5		3.5J	3.6J			3.3	1.9	3		1.1	2.8			0.93J	
Trichloroethene	5		0.55J	0.63J			0.43J	0.45J	0.36J							
Vinyl Chloride	2		1.6J	2.0	3.8J	2.9	1.7	2.2			1.3				0.80J	
Total Xylenes	5		2.1J	2.1J			2.7J	1.5J	1.9J		0.76J					
<b>Total VOCs</b>		<b>5.7</b>	<b>11.32</b>	<b>19.01</b>	<b>5.4</b>	<b>17.61</b>	<b>13.75</b>	<b>11.01</b>	<b>0</b>	<b>8.86</b>	<b>2.8</b>	<b>0</b>	<b>7.29</b>	<b>3.0</b>		
<b>Semi-Volatiles (µg/L)</b>																
1,2-Dichlorobenzene	3															
1,4-Dichlorobenzene	3															
2,4-Dimethylphenol	50			2J	2J	3J	0.7J	2J								
2-Methylphenol	NL		3J	2J	4J	6J	1J	2J				2J				
4-Methylphenol	NL		3J	2J	4J	6J	1J	2J				1J				
Naphthalene	10															
Di-n-octyl phthalate	50				0.6J											
Phenol	1		24	7J	10	26	2J	6J			5J	2J			1J	
<b>Total SVOCS</b>		<b>0</b>	<b>30</b>	<b>13</b>	<b>20.6</b>	<b>41</b>	<b>4.7</b>	<b>12</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>0</b>		
Notes:																
NL - Not listed																
J - Exceeds Class GA Level																
NS - Not Sampled																
J - Estimated																
Blank = Non-Detect																

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location		MW-7									
		Date	05/24/07	05/29/08	05/26/10	05/30/12	05/29/14	05/26/16	05/23/18	05/11/20	04/28/22
			Class GA Level								
<b>Volatiles (µg/L)</b>											
Acetone	50		3.9J		3.3J/3.4J					ND/6.7J	
Benzene	1										
2-Butanone	50										
Chlorobenzene	5										
trans-1,2-Dichloroethene	5										
Ethylbenzene	5										
Methylene Chloride	5										
Tetrachloroethene	5										
Toluene	5										
Trichloroethene	5										
Vinyl Chloride	2				0.64J/0.61J						
Total Xylenes	5										
<b>Total VOCs</b>		<b>3.9</b>	<b>3.98</b>	<b>0.0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3.35</b>	<b>0</b>	<b>0</b>	
<b>Semi-Volatiles (µg/L)</b>											
1,2-Dichlorobenzene	3										
1,4-Dichlorobenzene	3										
2,4-Dimethylphenol	50										
2-Methylphenol	NL			0.4J/0.5J				5.7J/6.1J	0.42J/1.6J	0.48J	
4-Methylphenol	NL	0.3J		0.5J/0.6J			0.65J				
Naphthalene	10										
Di-n-octyl phthalate	50										
Phenol	1										
<b>Total SVOCS</b>		<b>0.3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0.65</b>	<b>5.9</b>	<b>1.01</b>	<b>0.48</b>	<b>0</b>	
<b>Notes:</b>											
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Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	MW-8											
			05/18/01	08/20/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	05/14/04	05/27/05
<b>Volatiles (µg/L)</b>														
Acetone	50	52	12J	11J	75J	67	20			73		28/33	26	
Benzene	1	6.5	4.3	4.1		8.6	12	12	8.1	12	23/24	10/12	4.2	
2-Butanone	50													
Chlorobenzene	5	1.8J	1.0J	1.0J		3.2	4.9	4.4	3.6	6.2	6.0/6.4	2.7/3.3	2.4	
trans-1,2-Dichloroethene	5	2.2J	1.8J	2.9J	4.8J	7.3	11	16	12	13	10/12	7.3/9.4	7.4	
Ethylbenzene	5	5.7	3.7J	4.4J	8.2J	12	18	18	15	23	30/32	20/24	4.6	
Methylene Chloride	5	1.1J	0.58J	0.66J	4.4J	1.2	1.4	1.6		1.3	2.2/2.2	7.3/9.2	1.7	
Tetrachloroethene	5	21	12	9.8	23J	32	61	58	54	80	91/100	120/130	62	
Toluene	5	75	36	31	80	100	140	160	100	120	240/240	97/120	30	
Trichloroethene	5	82	40	35	110	180	320	280	210	320	460/460	380/390	180	
Vinyl Chloride	2	5.2	1.6J	3.3	23	12	18	14	12	18	21/21	13/16	5.8	
Total Xylenes	5	22	13	16	30J	40	68	69	58	93	120/120	92/110	32	
<b>Total VOCs</b>		<b>274.5</b>	<b>125.98</b>	<b>119.16</b>	<b>358.4</b>	<b>463.3</b>	<b>674.3</b>	<b>633</b>	<b>472.7</b>	<b>759.5</b>	<b>1010.4</b>	<b>817.1</b>	<b>356.1</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3				2J	2J		2J		4J	3J/3J			
1,4-Dichlorobenzene	3			0.6J	2J	1J	1J	2J		4J	3J/3J	19U/2J	4J	
2,4-Dimethylphenol	50	1J	11	16	19	18	15	27	20	27	37/38	15J/14	7J	
2-Methylphenol	NL	33	55	41	48	44	38	56	37	35	45/46	18J/18	18J	
4-Methylphenol	NL	10	32	34	55	60	59	83	64	75	130/130	34/31		
Naphthalene	10				0.7J	0.8J	0.8J	1J			2J/2J			
Di-n-octyl phthalate	50													
Phenol	1	43	130	140	85	110	91	110	140	78	80/80	28/28	11J	
<b>Total SVOCs</b>		<b>87</b>	<b>228</b>	<b>231.6</b>	<b>211.7</b>	<b>235.8</b>	<b>204.8</b>	<b>281</b>	<b>261</b>	<b>223</b>	<b>301</b>	<b>103.5</b>	<b>40</b>	
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Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	MW-8											
			05/30/06	05/24/07	05/29/08	05/29/09	05/26/10	05/26/11	05/30/12	05/24/13	05/29/14	05/29/15	05/26/16	05/31/17
<b>Volatiles (µg/L)</b>														
Acetone	50	16	6.6/7.5	23	2.6J		3.1J							
Benzene	1	4.4	1.6/1.5	1.5	2.7		2.7	2.1	2.5	3.5	2.8J/2.9J			
2-Butanone	50			4.4J										
Chlorobenzene	5	2.4	0.84J/0.82J	0.54J	0.99J		3.8	3.4	3.4	7.0	4.6J/4.8J			
trans-1,2-Dichloroethene	5	5.3	4.4/3.9	3.6	6.8		3.5	3.4	3.4	6.5	5.3/6.1			
Ethylbenzene	5	5.8	2.5/2.2	1.8	4.2		5.2	4.4	4.4	6.2	3.9J/3.9J			
Methylene Chloride	5	0.64J												
Tetrachloroethene	5	71	16/14	9.5	12		12	7.7	5.3	3.5	2.9J/2.8J			
Toluene	5	33	12/11	10	26		18	6.5	6.5	4.9	4.0J/4.1J			
Trichloroethene	5	150	40/36	29	68		34	22	21	22	17/17	15	7.9J	
Vinyl Chloride	2	5.1					3.0							
Total Xylenes	5	25	9.8/9.1	6.7	19		22	16	12	11	5.4J/5.0J			
<b>Total VOCs</b>		<b>318.64</b>	<b>89.88</b>	<b>90.04</b>	<b>142.29</b>	<b>0</b>	<b>107.3</b>	<b>65.5</b>	<b>58.5</b>	<b>64.6</b>	<b>46.25</b>	<b>15</b>	<b>7.9</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3			0.4J		1.5J	1.2J	1.3J	0.87J	1.7J	1.2J/0.91J	1.4J		
1,4-Dichlorobenzene	3	5J	0.5J/0.4J	0.5J		2.1J	3.3J	6.9J	7.1J	21	12/11	17	11J	
2,4-Dimethylphenol	50	6J	0.8J/0.6J	14	14	13	14	16	17	19	18/16	20	16J	
2-Methylphenol	NL	16	7/7	26	32	22	16	20	16	23	21/19	29	36J	
4-Methylphenol	NL		18/16	31	29	38	41J	30	25	1.0J	27/24	28	28J	
Naphthalene	10		22/22	1J									0.98J	
Di-n-octyl phthalate	50													
Phenol	1	4J	20/21	32	15	13	3.4J	4.0J	2.5J	4.5J	3.3J/2.7J	6.5J		
<b>Total SVOCS</b>		<b>31</b>	<b>67.65</b>	<b>104.9</b>	<b>90</b>	<b>89.6</b>	<b>78.9</b>	<b>78.2</b>	<b>68.47</b>	<b>70.2</b>	<b>78.1</b>	<b>102.88</b>	<b>91</b>	
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Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	MW-8					
		Class GA	05/23/18	05/29/19	05/11/20	04/28/21	04/28/22
		Level					04/28/23
<b>Volatiles (µg/L)</b>							
Acetone	50			7.0J			
Benzene	1	2.6	1.5		2.8		3.4/3.2J
2-Butanone	50						
Chlorobenzene	5	3.1	3.4		6.1	7.1	8.2/7.9
trans-1,2-Dichloroethene	5	5.4				4	
Ethylbenzene	5	2.9	1.7J		3.9		3.9J/3.7J
Methylene Chloride	5						
Tetrachloroethene	5	1.7	0.74J				
Toluene	5	3.7	1.8J		1		2.2J
Trichloroethene	5	9.8	3.6	4J	2.2		3.2J/3.0J
Vinyl Chloride	2		2.3		3.7		6.9/6.1
Total Xylenes	5	5.1	1.7J		1.8J		
<b>Total VOCs</b>		<b>34.3</b>	<b>23.74</b>	<b>4</b>	<b>21.5</b>	<b>11.1</b>	<b>26.95</b>
<b>Semi-Volatiles (µg/L)</b>							
1,2-Dichlorobenzene	3		0.83J	0.91J	1.5J		1.8J/1.5J
1,4-Dichlorobenzene	3	8.8J	12	19	74	61	75/71
2,4-Dimethylphenol	50	11J	8.4J	4.5J	13	12J	19/17
2-Methylphenol	NL	30J	23	18	15	11J	16/15
4-Methylphenol	NL	18J	12	7.9J	16	13J	13/12
Naphthalene	10						0.93J
Di-n-octyl phthalate	50						
Phenol	1	12J	11	4.8J	1.9J		0.87J
<b>Total SVOCs</b>		<b>79.8</b>	<b>67.2</b>	<b>55.11</b>	<b>121.4</b>	<b>97</b>	<b>122.45</b>
Notes:							
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NS - Not Sampled							
J - Estimated							
Blank = Non-Detect							

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	MW-9											
			05/18/01	08/20/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	05/14/04	05/27/05
<b>Volatiles (µg/L)</b>														
Acetone	50	9.4J		4.3J	7.3J/6.7J		4.2J	7.0/7.2			13/12			17
Benzene	1			0.24J	0.39J/0.35J		0.44J	0.29J/0.30J	0.29J/0.29J		0.40J/ND0.70			
2-Butanone	50													
Chlorobenzene	5			0.50J	0.86J/0.85J		1.3		1.0/1.1		0.91J/0.87J		1.1	1.7
trans-1,2-Dichloroethene	5				0.22J/ND		0.31J	0.24J/0.24J	0.22J/0.20J					
Ethylbenzene	5			0.30J	0.46J/0.42J		0.73J	0.44J/0.42J	0.46J/0.46J		0.40J/0.38J			
Methylene Chloride	5			0.34J	0.33J/ND	4.0J	0.53J						7.2	1.6
Tetrachloroethene	5	1.6J		1.1J	1.0J/0.92J		1.6	0.92J/0.80J	0.77J/0.74J		0.67J/0.71J			
Toluene	5			1.6J	3.0J/2.5J	2.8J	2.7	2.1/2.0	2.7/2.7	2.0	2.0/1.9	4.6	3.2	2.6
Trichloroethene	5	2.2J		1.8J	2.4J/2.2J	3.0J	4.4	2.0/2.0	2.2/2.3		1.8/1.8	9.5	4.9	3.0
Vinyl Chloride	2										1.7/1.7			3.6
Total Xylenes	5			1.0J	1.5J/1.5J		2.5J	1.3J/1.3J	1.4J/1.4J		0.98J/1.0J	3.0		
<b>Total VOCs</b>		<b>13.2</b>	<b>11.2</b>	<b>16.45</b>	<b>9.8</b>	<b>18.71</b>	<b>14.28</b>	<b>9.12</b>	<b>2</b>	<b>21.46</b>	<b>17.1</b>	<b>16.4</b>	<b>29.5</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3					0.6J								
1,4-Dichlorobenzene	3													2J
2,4-Dimethylphenol	50	12	12	18/17	38		20/22	30/34	30	35/36	36	42		50
2-Methylphenol	NL	1J	3J	3J/3J	7J		4J/4J	6J/6J	6J	6J/6J	6J	5J		8J
4-Methylphenol	NL	69	110	97/92	230		100/110	190/230	150	130/130	160			260
Naphthalene	10													
Di-n-octyl phthalate	50													
Phenol	1	3J	34	28/22	24		38/41	34/35	42	46/46	180	30		27
<b>Total SVOCs</b>		<b>85</b>	<b>159</b>	<b>140</b>	<b>299.6</b>	<b>0</b>	<b>169.5</b>	<b>282.5</b>	<b>228</b>	<b>217.5</b>	<b>382</b>	<b>267</b>	<b>347</b>	
Notes:														
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Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	MW-9											
			05/30/06	05/25/07	05/29/08	05/27/09	05/26/10	05/26/11	05/30/12	05/24/13	05/29/14	05/29/15	05/26/16	05/31/17
<b>Volatiles (µg/L)</b>														
Acetone	50	17		5.7	4.8J	5.9	4.3J			6.2			15J	5.8
Benzene	1	0.54J			0.76		0.53J	0.44J	0.62J	0.57J				0.62J
2-Butanone	50	2.6J												
Chlorobenzene	5	1.5	2.8	1.4	5.3	2.5	2.4	2.3	2.5	3.1				3.1
trans-1,2-Dichloroethene	5	0.42J		0.55J	0.74J									
Ethylbenzene	5	0.83J			1.2	0.82J	1.1	0.74J	1.0	0.97J				1.1
Methylene Chloride	5													
Tetrachloroethene	5	0.57J			0.82J	0.57J	0.66J	0.54J		0.66J				0.43J
Toluene	5		3.1	2.4	3.8	3.8	4.3	3.5	4.4	4.6	5.3J	4.4J		
Trichloroethene	5	1.8	2.9	1.7	4.7	2.6	2.7	2.3	3.0	3		2.6J	4.8	
Vinyl Chloride	2	4.0			4.2		1.4							2.9
Total Xylenes	5	2.0J			3.3	2.2J	2.7	1.5J	2.7	2.6				3.1
<b>Total VOCs</b>		<b>31.26</b>	<b>8.8</b>	<b>11.75</b>	<b>29.6</b>	<b>18.4</b>	<b>20.9</b>	<b>11.3</b>	<b>14.2</b>	<b>21.7</b>	<b>5.3</b>	<b>22</b>	<b>21.85</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3		0.9J	0.7J		1.4J	1.0J	1.1J	0.98J	1.6J	1.2J	1.5J		
1,4-Dichlorobenzene	3		3J	1J	2.3J	1.7J	1.6J	1.8J	0.87J	2.3J	0.48J	2.6J		
2,4-Dimethylphenol	50	58	46	31	110	41	43	47	82 J	76 J	62J	130J	140	
2-Methylphenol	NL	8J	6	6	12	9.9J	11	11	12	13J	13	16	20J	
4-Methylphenol	NL	190	170	96	300	180	230	230	280	0.75J	200	340	340	
Naphthalene	10		0.2J	0.5J								1.2J		
Di-n-octyl phthalate	50													
Phenol	1	49	11	13	20	20	17	9.3 J	16	26	16	26	37J	
<b>Total SVOCS</b>		<b>305</b>	<b>237.1</b>	<b>148.2</b>	<b>444.3</b>	<b>254</b>	<b>303.6</b>	<b>300.2</b>	<b>391.85</b>	<b>119.65</b>	<b>292.68</b>	<b>517.3</b>	<b>537</b>	
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Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	MW-9					
			05/23/18	05/29/19	05/12/20	04/28/21	04/28/22	04/28/23
<b>Volatiles (µg/L)</b>								
Acetone	50			12		11		
Benzene	1		0.87J	0.84		0.78		
2-Butanone	50							
Chlorobenzene	5		4.1	4.6	6.9J / 7.3J	6.1	6.4	7.6
trans-1,2-Dichloroethene	5		0.99J	1.1				
Ethylbenzene	5		1.4	1.5		1.3		
Methylene Chloride	5							
Tetrachloroethylene	5		0.47J	0.82J		0.50 J		
Toluene	5		6.3	7.1	9.4 / 9.0	4.4	3.9J	3.4J
Trichloroethylene	5		3.4	3.5	4.6 J / 4.9 J	2.3	1.9J	
Vinyl Chloride	2		2.3	2.6		1.7		
Total Xylenes	5		3.7	4.0		3.6		
<b>Total VOCs</b>			<b>23.5</b>	<b>38.06</b>	<b>21.05</b>	<b>31.68</b>	<b>12.2</b>	<b>11</b>
<b>Semi-Volatiles (µg/L)</b>								
1,2-Dichlorobenzene	3		1.8J	1.8J	1.7J / 2.1J	1.9 J	1.2J	
1,4-Dichlorobenzene	3		2.1J	1.9J	2.1J / 2.3J	3.8 J	2.9J	
2,4-Dimethylphenol	50		220	210	200 / 240	120	56	41J
2-Methylphenol	NL		24	24	21 / 24	14	9.5J	7.4J
4-Methylphenol	NL		640	570	520 / 600	260	170	120
Naphthalene	10				ND / 0.77J			
Di-n-octyl phthalate	50							
Phenol	1		38	40	22 / 26	26	20	12J
<b>Total SVOCS</b>			<b>925.9</b>	<b>847.7</b>	<b>830.99</b>	<b>425.7</b>	<b>259.6</b>	<b>180.4</b>
Notes:								
NL - Not listed								
- Exceeds Class GA Level								
NS - Not Sampled								
J - Estimated								
Blank = Non-Detect								

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	OGC-1											
			05/18/01	05/25/07	8/21/2001	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	05/14/04
<b>Volatiles (µg/L)</b>														
Acetone	50	20J				11J			4.8J					
Benzene	1				0.64J	0.55J				0.26J				
2-Butanone	50	1.1J												
Chlorobenzene	5	2.2J	2.8	2.0J	1.7J			0.24J		0.78J		0.91J		
trans-1,2-Dichloroethene	5	5.6		3.7J	4.6J	1.8J	0.48J	0.58J	2.7		2.8	0.85J		
Ethylbenzene	5			0.52J	0.43J				0.21J					
Methylene Chloride	5					1.6J								
Tetrachloroethene	5			0.78J	0.54J		0.42J	0.53J	0.30J			0.29J		
Toluene	5	5.2	3.1	5.4	4.2J		0.48J	0.43J	1.9	1.7	2.6	0.59J		
Trichloroethene	5	15	2.9	16	11	4.5J	2.2	2.7	6.1	5.1	8.4	2.2	0.47J	
Vinyl Chloride	2	1.3J		0.51J	0.72J				0.42J		0.64J			
Total Xylenes	5			2.1J	1.6J				0.49J		0.86J			
<b>Total VOCs</b>		<b>50.4</b>	<b>8.8</b>	<b>31.65</b>	<b>36.34</b>	<b>7.9</b>	<b>3.82</b>	<b>9.04</b>	<b>13.16</b>	<b>6.8</b>	<b>16.21</b>	<b>3.93</b>	<b>0.47</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3			0.9J										
1,4-Dichlorobenzene	3	1J	3J	3J	2J	1J			1J					
2,4-Dimethylphenol	50	9J	46	16	8J	3J		0.6J	9J		4J			
2-Methylphenol	NL	6J	6	12	5J	2J			2J		3J			
4-Methylphenol	NL	20	170	35	15J	5J		1J	5J	6J	8J			
Naphthalene	10	71	0.2J	130		21		7J	18		25	3J		
Di-n-octyl phthalate	50													
Phenol	1	150	11	290	57	15	1J	8J	4J		19			
<b>Total SVOCs</b>		<b>257</b>	<b>237.1</b>	<b>486</b>	<b>87</b>	<b>47</b>	<b>1</b>	<b>16.6</b>	<b>39</b>	<b>6</b>	<b>59</b>	<b>3</b>	<b>0</b>	
Notes:														
NL - Not listed														
- Exceeds Class GA Level														
NS - Not Sampled														
J - Estimated														
Blank = Non-Detect														

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	OGC-1										05/11/20	04/28/22
			05/27/05	05/31/06	05/24/07	05/29/08	05/26/10	05/30/12	05/29/14	05/27/16	5/23/2018			
<b>Volatiles (µg/L)</b>														
Acetone	50													7.4J
Benzene	1													
2-Butanone	50													
Chlorobenzene	5													
trans-1,2-Dichloroethene	5			0.55J										
Ethylbenzene	5													
Methylene Chloride	5	1.8												
Tetrachloroethene	5													
Toluene	5													
Trichloroethene	5	1.2	1.9	0.53J	4.2									
Vinyl Chloride	2													
Total Xylenes	5													
<b>Total VOCs</b>		<b>3.0</b>	<b>2.45</b>	<b>0.53</b>	<b>4.2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7.4</b>	<b>0</b>	<b>0</b>		
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3													
1,4-Dichlorobenzene	3													
2,4-Dimethylphenol	50													
2-Methylphenol	NL				2J			0.4J		0.46J				
4-Methylphenol	NL							0.5J						
Naphthalene	10													
Di-n-octyl phthalate	50													
Phenol	1								0.97J		0.43J		0.39J	
<b>Total SVOCs</b>		<b>0</b>	<b>2</b>	<b>0</b>	<b>0.9</b>	<b>0</b>	<b>1.43</b>		<b>0</b>	<b>0.43</b>	<b>0</b>	<b>0.39</b>	<b>0</b>	
Notes:														
NL - Not listed														
J - Exceeds Class GA Level														
NS - Not Sampled														
J - Estimated														
Blank = Non-Detect														

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	OGC-2											
			05/18/01	08/20/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	05/14/04	05/27/05
<b>Volatiles (µg/L)</b>														
Acetone	50				11J			3.0J					4.5J	3.1
Benzene	1													
2-Butanone	50													
Chlorobenzene	5													
trans-1,2-Dichloroethene	5													
Ethylbenzene	5													
Methylene Chloride	5				1.7J									
Tetrachloroethene	5													
Toluene	5											0.37J		
Trichloroethene	5		0.39J		0.26J		0.25J	0.26J						
Vinyl Chloride	2													
Total Xylenes	5													
<b>Total VOCs</b>		<b>0</b>	<b>0.39</b>	<b>11.26</b>	<b>1.7</b>	<b>0.25</b>	<b>3.26</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.37</b>	<b>4.5</b>	<b>3.1</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3													
1,4-Dichlorobenzene	3													
2,4-Dimethylphenol	50													
2-Methylphenol	NL													
4-Methylphenol	NL													
Naphthalene	10													
Di-n-octyl phthalate	50													
Phenol	1													
<b>Total SVOCs</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Notes:														
NL - Not listed														
- Exceeds Class GA Level														
NS - Not Sampled														
J - Estimated														
Blank = Non-Detect														

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	OGC-2									
			05/30/06	05/25/07	05/29/08	05/26/10	05/30/12	05/29/14	05/26/16	05/23/18	05/11/20	04/28/22
<b>Volatiles (µg/L)</b>												
Acetone		50										
Benzene		1										
2-Butanone		50										
Chlorobenzene		5										
trans-1,2-Dichloroethene		5										
Ethylbenzene		5										
Methylene Chloride		5										
Tetrachloroethene		5										
Toluene		5										
Trichloroethene		5										
Vinyl Chloride		2										
Total Xylenes		5										
<b>Total VOCs</b>			<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Semi-Volatiles (µg/L)</b>												
1,2-Dichlorobenzene		3										
1,4-Dichlorobenzene		3										
2,4-Dimethylphenol		50										
2-Methylphenol		NL										
4-Methylphenol		NL										
Naphthalene		10										
Di-n-octyl phthalate		50										
Phenol		1										
<b>Total SVOcs</b>			<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0.79</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Notes:</b>												
NL - Not listed												
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J - Estimated												
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Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	OGC-3											
			05/18/01	08/20/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	05/14/04	05/27/05
<b>Volatiles (µg/L)</b>														
Acetone	50	13J/19J		3.8J	15J		7.1	6.7			5.6			10/8.4
Benzene	1	1.6J/1.6J		1.6	1.8		1.8	1.2	1.5		1.6	1.4		1.2/1.1
2-Butanone	50													
Chlorobenzene	5		0.24J	0.28J			0.28J		0.22J					
trans-1,2-Dichloroethene	5	1.6J/1.6J		1.0J	1.4J	1.1J	1.1	0.98J	0.44J		1.0			
Ethylbenzene	5	1.6J/1.5J		2.0J	2.3J	1.5J	2.4	1.7	1.8		2.0			1.4/1.3
Methylene Chloride	5					1.9J							6.3	1.2/1.0
Tetrachloroethene	5	2.4J/2.2J		3.0J	2.2J	1.7J	2.2	1.8	1.8		1.5			0.71J/0.63J
Toluene	5	5.7/5.1		5.9	5.3		5.1	3.7	4.6	4.0	4.3	3.6	2.6	2.6/2.4
Trichloroethene	5	20/20		18	19	14J	17	14	13	12	14	9.8	7.7	6.4/6.1
Vinyl Chloride	2			0.4	0.72						0.62J			
Total Xylenes	5	5.6J/5.4J		7.5	8.7	4.8J	7.8	5.8	5.8	5.0	6.6	3.9		3.3/3.0
<b>Total VOCs</b>		<b>53.95</b>	<b>43.44</b>	<b>56.7</b>	<b>25</b>	<b>44.78</b>	<b>35.88</b>	<b>29.16</b>	<b>21</b>	<b>37.22</b>	<b>18.7</b>	<b>16.6</b>	<b>25.37</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3					1J								
1,4-Dichlorobenzene	3					0.7J		0.5J						
2,4-Dimethylphenol	50	5J/5J		9	8J	11	11	7J	8J	11	12	10	9J	8J/4J
2-Methylphenol	NL	98/96		120	87	160	140	100	100	120	140	150	110	83/73
4-Methylphenol	NL	13/13		21	17	28	23	14	15	22	23	20	17	14/12
Naphthalene	10													
Di-n-octyl phthalate	50													
Phenol	1	120/110		140	130J	210	140	85	92	110	120	120	90	78/74
<b>Total SVOCs</b>		<b>230</b>	<b>290</b>	<b>242</b>	<b>410.7</b>	<b>314</b>	<b>206.5</b>	<b>215</b>	<b>263</b>	<b>295</b>	<b>300</b>	<b>226</b>	<b>173</b>	
Notes:														
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Blank = Non-Detect														

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	OGC-3											
			05/30/06	05/24/07	05/29/08	05/27/09	05/26/10	05/26/11	05/30/12	05/24/13	05/29/14	05/29/15	05/26/16	05/31/17
<b>Volatiles (µg/L)</b>														
Acetone	50		2.8J	0.76	6.0	2.9J/2.6J		3.7J			3.1J		3.3J	
Benzene	1		0.93J		0.93	0.75/0.78		0.67J	0.45J	0.64J/0.71	5.3J		0.62J	0.50J
2-Butanone	50													
Chlorobenzene	5													
trans-1,2-Dichloroethene	5													
Ethylbenzene	5		1.1	0.85J	0.92J	0.69J/0.73J		0.75J						
Methylene Chloride	5													
Tetrachloroethene	5		0.61J	0.56J										
Toluene	5			1.7	1.8	1.4/1.4		1.2	0.88J	1.2/1.3	1.2J		0.95J	0.70J
Trichloroethene	5		5.6	4.3	4.9	3.3/3.5		2.5	0.87J	2.6/2.5	0.48J		1.6	1.4
Vinyl Chloride	2										62J			
Total Xylenes	5		2.9J	2.1J	2.3J	1.7J/1.7J		1.0J	0.71J	0.81J/0.77J	13			
<b>Total VOCs</b>			<b>13.94</b>	<b>10.27</b>	<b>16.85</b>	<b>5.76</b>	<b>0</b>	<b>9.82</b>	<b>2.91</b>	<b>5.27</b>	<b>85.08</b>	<b>0</b>	<b>6.47</b>	<b>2.6</b>
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3			0.6J	0.7J		0.86J	0.40J	0.61J	0.46J/0.49J	16	0.47J	0.52J	
1,4-Dichlorobenzene	3				0.6J		0.58J							
2,4-Dimethylphenol	50		6J		6	6.2/5.9	4.3J	3.7J	5.8J	4.8J/4.8J	4.8J	4.1J	4.9J	4.5J
2-Methylphenol	NL		64	47	45	44/43	36	33	35	31/32	34	23	24	23J
4-Methylphenol	NL		13	10	11	11/11	9.9	10	11	9.1J/9.5J	0.91J	7.6J	9.6	9.4J
Naphthalene	10				0.8J									
Di-n-octyl phthalate	50													
Phenol	1		75	60	65	60/57	50	48	53	58/57	52	44J	43	62
<b>Total SVOCS</b>			<b>158</b>	<b>117.6</b>	<b>129.1</b>	<b>119.05</b>	<b>101.64</b>	<b>95.1</b>	<b>105.41</b>	<b>103.58</b>	<b>107.71</b>	<b>79.17</b>	<b>82.02</b>	<b>98.9</b>
<b>Notes:</b>														
NL - Not listed														
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Blank = Non-Detect														

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	OGC-3					
		Class GA	05/23/18	05/29/19	05/11/20	04/28/21	04/28/22
		Level					
<b>Volatiles (µg/L)</b>							
Acetone	50		18J	9.1			3.9J
Benzene	1		0.87J	0.54J	0.47J	0.47J/0.45J	0.43J
2-Butanone	50						
Chlorobenzene	5						
trans-1,2-Dichloroethene	5		0.22J				
Ethylbenzene	5		0.38J				
Methylene Chloride	5						
Tetrachloroethene	5						
Toluene	5		1.3	0.79J	0.61J	0.59J/0.57J	0.58J
Trichloroethene	5		1.6	1.1	1.1	1.2/1.1	0.84J
Vinyl Chloride	2						
Total Xylenes	5		1.1J				
<b>Total VOCs</b>			<b>23.47</b>	<b>11.53</b>	<b>2.18</b>	<b>2.19</b>	<b>1.42</b>
<b>Semi-Volatiles (µg/L)</b>							
1,2-Dichlorobenzene	3						
1,4-Dichlorobenzene	3						
2,4-Dimethylphenol	50			5.8J	5.9J	4.7J/4.4J	4.3J
2-Methylphenol	NL		20J	21	20	17/16	12J
4-Methylphenol	NL		9.3J	12	12	9.7J/8.9J	6.3J
Naphthalene	10						
Di-n-octyl phthalate	50						
Phenol	1		50J	42	58	39/36	30J
<b>Total SVOCs</b>			<b>79.3</b>	<b>80.8</b>	<b>95.9</b>	<b>67.85</b>	<b>48.3</b>
Notes:							
NL - Not listed							
[ ] - Exceeds Class GA Level							
NS - Not Sampled							
J - Estimated							
Blank = Non-Detect							

Table 2.6

**Summary of Detected Compounds  
Site Groundwater  
Gratwick-Riverside Park  
North Tonawanda, New York**

Location	Date	OGC-4												05/14/04	11/23/04
		Class GA Level	05/18/01	08/20/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03			
<b>Volatiles (µg/L)</b>															
Acetone	50				7.9J			4.0J							
Benzene	1			0.21J	0.2J										
2-Butanone	50														
Chlorobenzene	5			0.49J	0.66J		0.83J/0.79J		0.46J		0.83J				
trans-1,2-Dichloroethene	5				0.22J										
Ethylbenzene	5			0.41J	0.39J		0.54J/0.53J	0.48J	0.39J		0.77J				
Methylene Chloride	5					5.1J/4.9J									4.6
Tetrachloroethene	5	1.0J	1.2J	0.87J		0.86J/0.84J	1.1	0.78J		0.77J					
Toluene	5				1.0J		1.0/0.98J	1.4	0.72J		1.2				
Trichloroethene	5	1.6J	1.4J	1.5J		1.5/1.4		1.7	0.96J		1.5				
Vinyl Chloride	2														
Total Xylenes	5			1.0J	0.94J		0.84J/0.82J	1.1J			0.95J				
<b>Total VOCs</b>		<b>2.6</b>	<b>4.71</b>	<b>13.68</b>	<b>5</b>	<b>5.47</b>	<b>9.78</b>	<b>3.31</b>	<b>0</b>	<b>6.02</b>	<b>0</b>	<b>4.6</b>		<b>0</b>	
<b>Semi-Volatiles (µg/L)</b>															
1,2-Dichlorobenzene	3														
1,4-Dichlorobenzene	3														
2,4-Dimethylphenol	50	8J	12	6J	8J/6J	7J/7J	8J		7J/7J	8J	4J				4J
2-Methylphenol	NL	0.9J	2J	35	2J/ND	1J/2J	2J			3J		2J			
4-Methylphenol	NL	64	86	40	58/55	61/67	68		69/68	73	32				31
Naphthalene	10														
Di-n-octyl phthalate	50														
Phenol	1	310	560	400	420/460	710/1100	1100	1100	2400/2300	1800	1600	2400			1500
<b>Total SVOCs</b>		<b>382.9</b>	<b>660</b>	<b>481</b>	<b>504.5</b>	<b>977.5</b>	<b>1178</b>	<b>1100</b>	<b>2425.5</b>	<b>1884</b>	<b>1636</b>	<b>2400</b>		<b>1537</b>	
<b>Notes:</b>															
NL - Not listed															
[ ] - Exceeds Class GA Level															
NS - Not Sampled															
J - Estimated															
Blank = Non-Detect															

Table 2.6

**Summary of Detected Compounds  
Site Groundwater  
Gratwick-Riverside Park  
North Tonawanda, New York**

Location	Date	Class GA Level	OGC-4												
			05/27/05	05/30/06	05/25/07	05/29/08	05/27/09	05/26/10	05/26/11	05/30/12	05/29/14	05/26/16	05/23/18	05/12/20	4/28/2022
<b>Volatiles (µg/L)</b>															
Acetone	50							1.6J						3.6J	
Benzene	1														
2-Butanone	50														
Chlorobenzene	5														
trans-1,2-Dichloroethene	5														
Ethylbenzene	5			0.44J											
Methylene Chloride	5	2.0													
Tetrachloroethene	5														
Toluene	5														
Trichloroethene	5		0.53J												
Vinyl Chloride	2														
Total Xylenes	5														
<b>Total VOCs</b>		<b>2.0</b>	<b>0.97</b>	<b>0.0</b>	<b>0.0</b>	<b>1.6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3.6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Semi-Volatiles (µg/L)</b>															
1,2-Dichlorobenzene	3														
1,4-Dichlorobenzene	3														
2,4-Dimethylphenol	50				0.9J			0.51J/ND							
2-Methylphenol	NL				0.5J	2.7J									
4-Methylphenol	NL	14	15	3J	6				2.8J	0.87J					
Naphthalene	10				0.5J		3.4J/3.4J								
Di-n-octyl phthalate	50														
Phenol	1	850	510	84	66	25	15/15	5.5	0.97J	0.68J	0.43J				
<b>Total SVOCS</b>		<b>864</b>	<b>525</b>	<b>87</b>	<b>73.9</b>	<b>27.7</b>	<b>18.66</b>	<b>5.5</b>	<b>3.77</b>	<b>1.55</b>	<b>0.43</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Notes:															
NL - Not listed															
- Exceeds Class GA Level															
NS - Not Sampled															
J - Estimated															
Blank = Non-Detect															

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	OGC-5											
			05/20/01	08/21/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	05/14/04	05/27/05
<b>Volatiles (µg/L)</b>														
Acetone	50	38J			11J			6.4			4.9J		0.61J	
Benzene	1			1.5	1.4			0.87	0.92	0.87		0.77		
2-Butanone	50													
Chlorobenzene	5													
trans-1,2-Dichloroethene	5			0.65J	0.76J			0.42J	0.57J	0.52J			0.34J	
Ethylbenzene	5			0.21J	0.23J									
Methylene Chloride	5					3.4J							2.4	
Tetrachloroethene	5			0.38J	0.27J									
Toluene	5			2.5J	2.2J			0.99J	0.87J	1.2		0.80J	0.80J	
Trichloroethene	5			0.87J	0.66J			0.36J	0.41J	0.40J			0.28J	
Vinyl Chloride	2			1.6J	1.2J			1.1	1.5	1.2		1.1	1.4	
Total Xylenes	5			1.0J	1.0J			0.67J	0.37J	0.40J			1.0J	
<b>Total VOCs</b>		<b>38</b>	<b>8.71</b>	<b>18.72</b>	<b>3.4</b>	<b>4.41</b>	<b>11.04</b>	<b>4.59</b>	<b>0</b>	<b>7.57</b>	<b>0</b>	<b>4.43</b>	<b>2.4</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3													
1,4-Dichlorobenzene	3													
2,4-Dimethylphenol	50			8J	6J	5J		1J	6J					
2-Methylphenol	NL			1J	1J	1J								
4-Methylphenol	NL			2J	5J	4J			2J					
Naphthalene	10			1J	1J			0.5J	1J					
Di-n-octyl phthalate	50				1J	0.8J								
Phenol	1			0.9J										
<b>Total SVOCs</b>		<b>0</b>	<b>12.9</b>	<b>14</b>	<b>10.8</b>	<b>0</b>	<b>1.5</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Notes:														
NL - Not listed														
- Exceeds Class GA Level														
NS - Not Sampled														
J - Estimated														
Blank = Non-Detect														

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	OGC-5										
		Class GA										
		Level		05/30/06	05/24/07	05/29/08	05/26/10	05/30/12	05/29/14	05/26/16	05/23/18	05/11/20
<b>Volatiles (µg/L)</b>												
Acetone	50	3.0J			3.5J					5.3J		
Benzene	1	0.67J	0.54J	0.69J		0.58J	1.1	1.4	2.1	1.4	1.2	
2-Butanone	50											
Chlorobenzene	5											
trans-1,2-Dichloroethene	5								0.29J			
Ethylbenzene	5											
Methylene Chloride	5											
Tetrachloroethene	5											
Toluene	5								0.38J			
Trichloroethene	5							0.70J				
Vinyl Chloride	2	1.2	0.95J	1.4				1.1J	1			
Total Xylenes	5											
<b>Total VOCs</b>		<b>4.87</b>	<b>1.49</b>	<b>5.59</b>	<b>0</b>	<b>0.58</b>	<b>1.1</b>	<b>3.2</b>	<b>9.07</b>	<b>1.4</b>	<b>1.2</b>	
<b>Semi-Volatiles (µg/L)</b>												
1,2-Dichlorobenzene	3											
1,4-Dichlorobenzene	3											
2,4-Dimethylphenol	50											
2-Methylphenol	NL		0.5J	0.3J								
4-Methylphenol	NL		0.9J	0.4J			0.66J					
Naphthalene	10		2J	0.5J	1.6J	0.85J	1.1J	2.3J	1.2J	0.95J		
Di-n-octyl phthalate	50											
Phenol	1											
<b>Total SVOCS</b>		<b>0</b>	<b>3.4</b>	<b>1.2</b>	<b>1.6</b>	<b>0.85</b>	<b>1.76</b>	<b>2.3</b>	<b>1.2</b>	<b>0.95</b>	<b>0</b>	
Notes:												
NL - Not listed												
J - Exceeds Class GA Level												
NS - Not Sampled												
J - Estimated												
Blank = Non-Detect												

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

OCG-6	Date	OCG-6											
		05/18/01	08/20/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	03/04/04	05/14/04
		Class GA Level											
<b>Volatiles (µg/L)</b>													
Acetone	50			6.6J			5.0			3.7J			
Benzene	1									0.71	0.87	1.4	
2-Butanone	50												
Chlorobenzene	5												
trans-1,2-Dichloroethene	5			0.23J	0.23J	0.37J	0.45J	0.55J		1.4	2.0	2.1	
Ethylbenzene	5					0.31J				0.85J	1.1	2.0	3.3
Methylene Chloride	5				2.1J								4.4
Tetrachloroethene	5		1.4J	0.73J		6.6	7.4	5	12	49	51	230	300
Toluene	5			0.55J		2.0	1.6	1.5	2.4	9.3	12	27	40
Trichloroethene	5	3.0J	4.7J	3.1J	5.9	16	19	13	26	95	120	330	530
Vinyl Chloride	2					0.22J	0.25J			0.45J			
Total Xylenes	5		0.22J	0.53J	0.26J	1.7J	1.2J	1.0J		4.1	4.7	8.6	13
<b>Total VOCs</b>		<b>3</b>	<b>6.32</b>	<b>11.74</b>	<b>8.49</b>	<b>27.2</b>	<b>34.9</b>	<b>21.05</b>	<b>40.4</b>	<b>164.5</b>	<b>191.67</b>	<b>601.1</b>	<b>890.7</b>
<b>Semi-Volatiles (µg/L)</b>													
1,2-Dichlorobenzene	3												NA
1,4-Dichlorobenzene	3												
2,4-Dimethylphenol	50							1J					
2-Methylphenol	NL		2J	2J	32	11	8J	9J	13	22	27		63
4-Methylphenol	NL			1J	0.02J	10							1J
Naphthalene	10												
Di-n-octyl phthalate	50												
Phenol	1		7J	2J	4J	5J	3J	2J		5J	3J		9J
<b>Total SVOCS</b>		<b>0</b>	<b>9</b>	<b>5</b>	<b>36.02</b>	<b>26</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>27</b>	<b>30</b>		<b>73</b>
Notes:													
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Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

OCG-6			OGC-6													
			Date		11/23/04	05/27/05	05/31/06	05/24/07	05/29/08	05/27/09	05/26/10	05/26/11	05/30/12	05/24/13	05/29/14	05/29/15
			Class GA	Level												
<b>Volatiles (µg/L)</b>																
Acetone	50				8.6/8.7					1.6J						
Benzene	1	2.5	5.2	12/12	7.2					3.2	3.6	1.8	1.9	4.7	1.3/1.4	
2-Butanone	50															
Chlorobenzene	5															
trans-1,2-Dichloroethene	5	3.6	5.3	11/12	7.1					4.4	8.2	7.6	4.8	7.3	4.5/4.6	
Ethylbenzene	5	3.1	7.4	20/20	12					4.8	5.2	2.4	2.0	4.8	1.2/1.2	
Methylene Chloride	5	2.5	2.2													
Tetrachloroethene	5	260	550	2000/2100	1400	34	400	640	220	100	1100	190/190	180			
Toluene	5	35	72	240/260	97	2.9	34	38	14	16	57	10/10	8.1J			
Trichloroethene	5	330	610	1800/1800	1100	31	320	410	180	92	460	100/110	99			
Vinyl Chloride	2			2.9/2.8	1.5			1.2								
Total Xylenes	5	12	28	79/76	46			18	20	9.1	8.9	21	5.1/5.1			
<b>Total VOCs</b>		<b>648.7</b>	<b>1280.1</b>	<b>4232.5</b>	<b>2670.8</b>	<b>67.9</b>	<b>786</b>	<b>1126.2</b>	<b>434.9</b>	<b>225.6</b>	<b>1654.8</b>	<b>317.2</b>	<b>287.1</b>			
<b>Semi-Volatiles (µg/L)</b>		NA														
1,2-Dichlorobenzene	3															
1,4-Dichlorobenzene	3															
2,4-Dimethylphenol	50					0.9J							0.54J/0.59J			
2-Methylphenol	NL		85	89/110	76	76	32	32	15	16	23	9.4J/9.3	4.8J			
4-Methylphenol	NL		2J	84/100	2J	70	1.1J	1.4J	1.2J	1.1J	1.1J		0.88J			
Naphthalene	10			1J/2J	2J	2J	1.2J	1.4J	1.1J	1.1J	1.2J	1.1J/1.1J	0.89J			
Di-n-octyl phthalate	50															
Phenol	1		8J	13/16	8	8					1.5J	57	1.2J/1.2J	0.71J		
<b>Total SVOCs</b>			<b>95</b>	<b>207.5</b>	<b>88</b>	<b>156.9</b>	<b>34.3</b>	<b>34.8</b>	<b>17.3</b>	<b>19.7</b>	<b>82.3</b>	<b>12.2</b>	<b>7.28</b>			
Notes:																
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Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

OCG-6	Date	OCG-6								
		Class GA								
		Level		05/26/16	05/31/17	05/23/18	05/29/19	05/11/20	04/28/21	04/28/22
<b>Volatiles (µg/L)</b>										
Acetone	50						4.4J			
Benzene	1			0.83		0.81J	0.81	0.76		
2-Butanone	50									
Chlorobenzene	5				0.29J				8.6	
trans-1,2-Dichloroethene	5			11	17	19	27	11	11	
Ethylbenzene	5				0.5J					
Methylene Chloride	5									
Tetrachloroethene	5	71		29	16	18	17	28	14	9.5J
Toluene	5	4.0J		2.7	3.2	3.5	2	2.6J	2.1	13
Trichloroethene	5	60		41	28	39	34	40	28	20
Vinyl Chloride	2			1.3	1.4	1.3	1.7			
Total Xylenes	5			1.3J	2.1	2.4	1.1J			
<b>Total VOCs</b>		<b>135</b>	<b>87.13</b>	<b>69.3</b>	<b>88.41</b>	<b>83.56</b>	<b>81.6</b>	<b>55.1</b>	<b>51.1</b>	
<b>Semi-Volatiles (µg/L)</b>										
1,2-Dichlorobenzene	3								4.3J	
1,4-Dichlorobenzene	3								97	
2,4-Dimethylphenol	50				0.51J				21J	
2-Methylphenol	NL	3.6J		2.4J	2J		1.1J	1.6J	1.5J	16J
4-Methylphenol	NL				1.7J		0.78J	0.80J	0.83J	41J
Naphthalene	10	0.97J			1.2J			0.94J	1J	
Di-n-octyl phthalate	50									
Phenol	1				0.81J				1500	
<b>Total SVOCS</b>		<b>4.57</b>	<b>2.4</b>	<b>6.22</b>	<b>0</b>	<b>1.88</b>	<b>3.34</b>	<b>3.33</b>	<b>1679.3</b>	
Notes:										
NL - Not listed										
- Exceeds Class GA Level										
NS - Not Sampled										
J - Estimated										
Blank = Non-Detect										

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	OGC-7											
			05/18/01	08/20/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	11/04/03	05/14/04	05/27/05
<b>Volatiles (µg/L)</b>														
Acetone	50	21J	0.25J	8.2J				3.6J						
Benzene	1			0.30J		0.28J	0.20J	0.26J				0.34J	0.34J	
2-Butanone	50													
Chlorobenzene	5													
trans-1,2-Dichloroethene	5	6.3	3.1J	5.4	4.9J	4.8J	4.2	4.7	4.0	5.4	5.0	5.9	4.9	
Ethylbenzene	5	1.1J	0.80J	1.0J		1.3	0.84J	0.91J		1.4	0.93J	1.5	1.4	
Methylene Chloride	5													
Tetrachloroethene	5	4.3J	3.6J	3.4J	2.9J	4.0	3.4	2.7	2.8	4.1	2.2	4.1	2.9	
Toluene	5	12	5.8	6.7	5.7J	6.9	5.2	6.0	6.7	8.6	5.8	9.3	8.3	
Trichloroethene	5	70	40	48	45	68	44	38	50	56	38	56	37J	
Vinyl Chloride	2	2.6J	0.84	1.7J	3.5J	2.2	1.8	1.8		2.3	2	2.9	3.0	
Total Xylenes	5	6.0J	4.8J	6.5	3.9J	7.6	5.3	5.3	5.5	8.7	5.4	10	8.6	
<b>Total VOCs</b>		<b>123.3</b>	<b>59.19</b>	<b>81.2</b>	<b>65.9</b>	<b>95.08</b>	<b>68.54</b>	<b>59.67</b>	<b>69</b>	<b>86.5</b>	<b>59.33</b>	<b>90.04</b>	<b>66.44</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3													
1,4-Dichlorobenzene	3													
2,4-Dimethylphenol	50		2J											
2-Methylphenol	NL	3J	2J	1.0J	0.8J	1J								
4-Methylphenol	NL			0.9J	0.7J	1J								
Naphthalene	10													
Di-n-octyl phthalate	50				0.6J									
Phenol	1	4J	0.7J											
<b>Total SVOCS</b>		<b>7</b>	<b>4.7</b>	<b>1.9</b>	<b>2.1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Notes:														
NL - Not listed														
- Exceeds Class GA Level														
NS - Not Sampled														
J - Estimated														
Blank = Non-Detect														

Table 2.6

**Summary of Detected Compounds  
Site Groundwater  
Gratwick-Riverside Park  
North Tonawanda, New York**

Location			OGC-7											
			05/30/06	05/24/07	05/27/09	05/26/10	05/26/11	05/30/12	05/24/13	05/29/14	05/29/15	05/26/16	05/31/17	05/23/18
		Class GA Level												
<b>Volatiles (µg/L)</b>														
Acetone	50													
Benzene	1													0.13J
2-Butanone	50													
Chlorobenzene	5													
trans-1,2-Dichloroethene	5	5.8	3.8		2.7	2.7	2.0	2.0	1.7		0.95J			1.5J
Ethylbenzene	5	1.3	0.87J	0.84J	0.62J									0.51J
Methylene Chloride	5													
Tetrachloroethene	5	2.8	1.7	1.2J	0.80J	0.72J	0.69J	0.43J	0.50J	0.38J				
Toluene	5	8.6	5.0	4.9J	3.3	3.4	2.4	2.6	2.5	1.9	1.6	1.4/1.3		2.6J
Trichloroethene	5	37	22	21J	14	12	7.7	9.7	8.5	5.1	4.9	4.6/4.2		6.2
Vinyl Chloride	2	2.9		2.6J		2.4	1.6		1.7	0.94J				
Total Xylenes	5	8.2	5.3	5.0J	3.6	4.0	2.8	2.9	2.8	0.95J	1.9J	0.93J/0.86J		2.8
<b>Total VOCs</b>		<b>66.6</b>	<b>38.67</b>	<b>35.54</b>	<b>25.02</b>	<b>25.22</b>	<b>17.19</b>	<b>17.6</b>	<b>17.7</b>	<b>9.27</b>	<b>9.35</b>	<b>6.65</b>		<b>13.74</b>
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3										0.43J			
1,4-Dichlorobenzene	3													
2,4-Dimethylphenol	50													
2-Methylphenol	NL		0.6J	0.5J		0.45J		0.38J	0.52J					0.63J
4-Methylphenol	NL		0.6J	0.4J					1.1J					0.65J
Naphthalene	10													
Di-n-octyl phthalate	50													
Phenol	1													
<b>Total SVOCs</b>		<b>0</b>	<b>1.2</b>	<b>0.9</b>	<b>0</b>	<b>0.45</b>	<b>0</b>	<b>0.38</b>	<b>1.62</b>	<b>0.43</b>	<b>0</b>	<b>0</b>		<b>1.28</b>
Notes:														
NL - Not listed														
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Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	OGC-7				
		05/29/19	05/11/20	04/28/21	04/28/22	04/28/23
		Class GA Level				
<b>Volatiles (µg/L)</b>						
Acetone	50	3.9J/4.3J				
Benzene	1					
2-Butanone	50					
Chlorobenzene	5					
trans-1,2-Dichloroethene	5	1.0/1.2	1.2	1.2	1.2	1.2
Ethylbenzene	5					
Methylene Chloride	5					
Tetrachloroethene	5	0.40J/0.45J				
Toluene	5	1.1/1.3	1.1	1.2	1.2	1.3
Trichloroethene	5	4.3/4.5	2.9	3	2.9	3.4
Vinyl Chloride	2		2.7	5.5	2.6	3.0
Total Xylenes	5	0.89J/0.85J	0.71J	1.0J	0.81J	0.86J
<b>Total VOCs</b>		<b>12.1</b>	<b>8.61</b>	<b>11.9</b>	<b>8.71</b>	<b>9.76</b>
<b>Semi-Volatiles (µg/L)</b>						
1,2-Dichlorobenzene	3					
1,4-Dichlorobenzene	3					
2,4-Dimethylphenol	50					
2-Methylphenol	NL		0.43J			
4-Methylphenol	NL	0.59J	0.47J			
Naphthalene	10					
Di-n-octyl phthalate	50					
Phenol	1					
<b>Total SVOCs</b>		<b>0.59</b>	<b>0.9</b>	<b>0</b>	<b>0</b>	<b>0</b>
Notes:						
NL - Not listed						
[ ] - Exceeds Class GA Level						
NS - Not Sampled						
J - Estimated						
Blank = Non-Detect						

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location			OGC-8												
			Date		05/18/01	08/20/01	11/27/01	02/11/02	05/21/02	08/06/02	11/22/02	02/25/03	05/08/03	05/08/03	
			Class GA	Level											
<b>Volatiles (µg/L)</b>															
Acetone	50	78		31/29	19J			4.7J	3.6J				6.2	5.8	4.7J
Benzene	1	11		14/14	14			2.6	5.3	3.3	3.6	3.1	1.8	1.2	1.1
2-Butanone	50	4.0J													
Chlorobenzene	5	3.7J		4.1J/4.1J	4.0J			0.87J	1.7	1.1		1.1	0.65J	0.48J	0.43J
trans-1,2-Dichloroethene	5	4.3J		3.2J/3.1J	4.0J			0.76J	1.5	0.88J		1.0	0.50J	0.41J	1.0
Ethylbenzene	5	13		16/16	15		1.6J	2.8	5.8	3.1	3.9	3.1	1.8	1.2	
Methylene Chloride	5			0.52J/0.48J	0.62J		1.8J								
Tetrachloroethene	5	40		51/52	59		7.7J	9.9	22	12	14	11	7.0	5.0	3.8
Toluene	5	140		140/140	110		17J	21	53	28	38	27	16	11	8.1
Trichloroethene	5	120		110/110	110		20J	22	53	27	35	27	17		7.7
Vinyl Chloride	2	3.7J		3.4/3.6	3.1		1.1J		1.4	0.70J		0.78J			
Total Xylenes	5	43		55/54	46		4.8J	8.3	18	9.5	11	9.9	5.4	3.7	3.0
<b>Total VOCs</b>		<b>460.7</b>		<b>427.25</b>	<b>384.72</b>		<b>54</b>	<b>72.93</b>	<b>165.3</b>	<b>85.58</b>	<b>105.5</b>	<b>83.98</b>	<b>56.35</b>	<b>28.79</b>	<b>29.83</b>
<b>Semi-Volatiles (µg/L)</b>															
1,2-Dichlorobenzene	3														
1,4-Dichlorobenzene	3														
2,4-Dimethylphenol	50	2J		4J/2J	4J		0.8J	0.8J	3J	1J					
2-Methylphenol	NL	18		30/25	16		4J	5J	13	7J	11	7J	4J	2J	2J
4-Methylphenol	NL	30		51/45	28		8J	10	26	14	20	14J	9	5J	6J
Naphthalene	10	1J		3J/25	1J				0.9J						
Di-n-octyl phthalate	50			0.1J/ND											
Phenol	1	30		49/44	31		5J	8J	11	10		4J	6J	2J	
<b>Total SVOCS</b>		<b>81</b>		<b>139.05</b>	<b>80</b>		<b>17.8</b>	<b>23.8</b>	<b>53.9</b>	<b>32</b>	<b>31</b>	<b>25</b>	<b>19</b>	<b>9</b>	<b>8</b>
Notes:															
NL - Not listed															
- Exceeds Class GA Level															
NS - Not Sampled															
J - Estimated															
Blank = Non-Detect															

Table 2.6

**Summary of Detected Compounds**  
**Site Groundwater**  
**Gratwick-Riverside Park**  
**North Tonawanda, New York**

Location	Date	Class GA Level	OGC-8											
			05/30/06	05/24/07	05/29/08	05/27/09	05/26/10	05/26/11	05/30/12	05/29/14	05/26/16	05/23/18	05/12/20	04/28/22
<b>Volatiles (µg/L)</b>														
Acetone	50				9.9	1.5J								
Benzene	1	0.92	0.54J	0.84	0.58J				0.50J	0.47J	0.87J	0.83		
2-Butanone	50													
Chlorobenzene	5	0.44J									0.42J			
trans-1,2-Dichloroethene	5										0.39J			
Ethylbenzene	5	0.99J	0.53J	0.84J	0.50J						0.82J	0.96J	0.81J / ND	
Methylene Chloride	5													
Tetrachloroethene	5	4.0	2.0	2.3	1.6		0.94J	1.3	0.91J	1.0	1.6	1.3	1.1 / 0.87J	
Toluene	5	8.3	4.0	6.4	3.7		2.4	2.6	2.8	3.3	4.6	3.8	4.2 / 4.2	
Trichloroethene	5	7.6	4.0	6.5	4.0		2.4	2.7	3.1	3.9	5.2	5.2	4.3 / 4.1	
Vinyl Chloride	2													
Total Xylenes	5	3.2	1.1J	2.5J	1.5J		0.82J	0.86J	0.78J	1.0J	2.6	3.4	1.6J / 1.6J	
<b>Total VOCs</b>		<b>25.45</b>	<b>12.17</b>	<b>29.28</b>	<b>13.38</b>	<b>0</b>	<b>6.56</b>	<b>7.46</b>	<b>8.09</b>	<b>9.67</b>	<b>16.5</b>	<b>15.49</b>	<b>11.39</b>	
<b>Semi-Volatiles (µg/L)</b>														
1,2-Dichlorobenzene	3													
1,4-Dichlorobenzene	3			0.2J										
2,4-Dimethylphenol	50			1J		0.73J		0.52J	1.1J	0.86	1.4J	3.8J	2.1J / 2.3J	
2-Methylphenol	NL	3J	2J	2J		2.2J	1.5J	2.0J	2.6J	1.9J	3.3J	7.5J	3.8J / 4.1J	
4-Methylphenol	NL	8J	6	8	5.7	6.5J	5.3J	6.2J			11	25	15 / 16	
Naphthalene	10													
Di-n-octyl phthalate	50													
Phenol	1													
<b>Total SVOCS</b>		<b>11</b>	<b>8</b>	<b>11.2</b>	<b>5.7</b>	<b>9.43</b>	<b>6.8</b>	<b>8.72</b>	<b>3.7</b>	<b>2.76</b>	<b>15.7</b>	<b>36.3</b>	<b>21.65</b>	
Notes:														
NL - Not listed														
- Exceeds Class GA Level														
NS - Not Sampled														
J - Estimated														
Blank = Non-Detect														

Table 2.7

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

Monitoring Location	MH2	MH3	MW-6	OGC-1	OGC-5	MH6	OGC-6	MW-7	MH8	OGC-2	MH9
<b>Date</b>											
06/27/13	8.49	8.74	9.89	8.39	8.63	9.55	10.75	8.66	8.84	9.16	
07/24/13	8.02	8.59	9.75	9.16	8.13	8.73	10.82	9.68	8.43	8.80	
08/22/13	8.99	9.07	10.08	8.83	8.32	8.84	10.58	9.25	8.53	9.26	
09/30/13	8.45	9.48	9.17	8.46	8.20	8.95	10.52	9.24	8.17	9.00	
10/30/13	8.45	10.00	9.68	8.24	8.09	8.83	10.13	8.77	8.05	8.77	
11/27/13	8.70	10.06	10.01	7.99	8.04	8.62	10.38	8.89	8.29	8.90	
12/31/13	9.10	7.45	10.07	8.63	8.23	7.62	10.14	9.52	8.51	9.17	
01/30/14	8.98	8.56	9.97	9.06	8.17	8.52	10.44	9.45	8.89	9.26	
02/26/14	10.35	10.21	10.46	9.12	8.60	9.33	10.34	9.41	8.95	9.24	
03/28/14	8.97	8.54	10.15	9.24	8.43	8.61	10.37	9.24	8.63	9.06	10.33
04/25/14	8.68	8.29	10.19	8.24	8.43	8.68	10.52	8.94	8.57	9.04	10.36
05/29/14	8.81	8.42	10.74	8.76	8.57	9.34	11.23	9.88	9.04	9.81	11.01
06/25/14	8.91	9.25	10.32	8.63	8.62	9.39	10.96	9.52	9.30	9.33	10.99
07/29/14	8.51	8.59	8.75	8.26	7.99	8.35	10.34	9.37	8.18	9.25	10.39
08/26/14	8.27	8.69	8.77	8.64	7.95	8.65	10.35	8.56	8.04	8.94	10.56
09/30/14	8.43	9.64	8.94	8.39	8.26	8.70	10.34	9.22	8.15	9.05	10.66
10/29/14	8.12	9.66	9.80	8.83	8.16	8.87	10.22	9.11	8.29	8.94	10.42
11/25/14	9.11	10.59	9.72	9.19	8.44	8.90	10.84	9.25	8.60	8.80	10.74
12/30/14	10.84	10.75	10.55	9.17	8.83	9.13	10.60	9.69	8.88	9.51	10.98
01/28/15	9.25	7.51	10.18	9.01	8.40	8.65	10.33	9.11	8.63	8.94	5.97
02/24/15	9.28	9.08	10.49	9.63	8.90	9.14	9.93	9.08	NM	9.12	8.14
03/25/15	8.34	8.26	10.59	8.19	8.31	8.70	10.38	9.65	7.63	9.20	9.46
04/23/15	7.87	8.63	8.29	8.46	8.59	8.67	8.11	7.74	7.88	7.69	8.09
05/29/15	7.94	8.01	10.73	8.75	8.10	8.57	10.54	9.24	7.63	9.36	11.11
06/24/15	8.47	8.56	10.48	9.47	8.29	9.32	10.88	9.15	8.51	9.29	10.83
07/28/15	8.49	8.75	9.47	8.42	8.19	8.73	10.92	9.33	8.35	9.27	10.58
08/27/15	8.75	9.37	9.83	8.71	8.42	8.41	10.32	NM	9.30	9.58	10.53
09/25/15	8.40	10.02	9.57	8.86	8.41	9.13	10.83	9.72	8.26	9.38	10.79
10/30/15	8.24	9.60	9.50	9.42	8.65	9.43	11.08	9.49	8.35	9.38	10.81
11/30/15	9.11	10.58	9.18	8.92	8.51	9.16	9.96	9.70	8.68	9.62	11.05
12/30/15	9.17	10.26	10.32	8.63	8.77	9.53	10.34	10.00	9.02	9.57	11.28
01/28/16	9.24	10.55	9.76	9.09	8.59	8.99	10.66	9.68	8.68	9.37	10.95
02/23/16	7.85	9.87	10.36	8.65	8.75	8.67	11.03	9.98	8.63	9.56	9.55
03/31/16	9.05	9.49	10.49	8.74	8.44	8.96	10.88	9.49	8.50	9.39	9.56
04/28/16	7.72	7.71	10.43	8.12	8.44	8.53	10.84	9.39	8.41	9.49	8.97
05/26/16	8.30	8.17	10.55	8.52	8.10	9.02	10.59	8.95	7.93	9.39	9.48

Table 2.7

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>	<b>MH2</b>	<b>MH3</b>	<b>MW-6</b>	<b>OGC-1</b>	<b>OGC-5</b>	<b>MH6</b>	<b>OGC-6</b>	<b>MW-7</b>	<b>MH8</b>	<b>OGC-2</b>	<b>MH9</b>
<b>Location</b>											
<b>Date</b>											
06/30/16	8.48	8.53	10.96	9.59	8.51	9.06	10.89	9.24	8.10	9.40	9.99
07/28/16	8.42	8.39	10.68	9.40	8.24	8.88	10.67	9.47	8.31	9.34	9.89
08/24/16	8.76	9.32	9.16	8.94	8.74	9.47	9.07	9.37	9.70	9.59	10.25
09/27/16	8.35	8.57	10.41	8.99	8.10	8.84	10.93	10.38	8.22	9.31	9.84
10/25/16	8.73	9.04	8.37	8.34	8.62	9.01	9.13	9.25	9.51	9.20	9.53
11/30/16	8.23	8.34	10.26	9.49	8.17	8.79	9.65	9.39	8.25	9.32	10.76
12/28/16	8.25	8.41	10.81	8.87	8.55	9.02	10.07	9.49	8.43	9.40	9.65
01/31/17	7.51	7.60	10.40	7.89	8.44	8.52	9.25	9.21	8.16	9.34	9.20
02/28/17	8.07	8.38	10.38	8.88	7.95	8.36	8.84	8.14	6.39	8.88	2.65(1)
03/31/17	7.76	7.23	10.42	7.65	8.49	8.64	9.28	9.44	8.19	9.58	9.71
04/28/17	8.37	8.60	10.58	9.08	8.29	9.11	9.50	9.45	8.37	9.55	10.10
05/31/17	8.26	8.37	10.53	10.08	8.47	8.99	9.98	9.91	8.60	9.79	10.19
06/27/17	8.19	8.18	10.67	9.88	8.36	9.09	10.92	9.37	8.38	9.60	9.84
07/26/17	7.95	8.04	10.79	8.15	8.32	9.03	10.84	9.46	8.50	9.44	9.35
08/29/17	7.82	8.06	11.04	8.60	8.13	8.79	10.13	9.13	8.30	9.36	9.47
09/25/17	7.82	8.17	10.43	9.18	8.08	8.70	9.65	9.29	8.44	9.34	9.46
10/24/17	7.99	8.23	11.28	9.33	8.36	9.11	10.28	10.21	8.68	9.64	9.71
11/27/17	7.96	8.05	10.52	9.09	8.09	8.78	9.80	9.40	8.32	9.46	9.30
12/21/17	8.39	8.40	10.74	8.64	8.26	8.98	9.63	9.52	8.68	9.56	9.53
01/31/18	8.48	8.48	10.49	9.46	8.35	8.75	9.08	9.75	8.89	9.73	9.69
02/26/18	8.22	8.36	10.74	9.00	8.19	8.87	9.23	9.64	8.89	9.57	9.21
03/23/18	8.40	8.33	11.08	9.78	8.38	9.05	9.43	9.45	8.70	9.81	9.14
04/27/18	8.39	8.38	10.84	9.00	8.31	8.83	9.04	9.30	8.47	9.49	8.92
05/23/18	7.80	7.82	11.02	8.20	7.84	8.39	9.65	8.89	8.18	9.05	8.26
06/11/18	8.19	8.23	11.04	8.80	8.23	8.93	9.19	9.18	8.73	9.24	9.51
07/25/18	8.20	8.29	10.95	8.88	7.87	8.69	8.89	9.01	8.72	9.18	9.62
08/27/18	8.20	8.23	10.83	9.10	8.22	9.20	10.18	9.38	8.84	9.56	9.86
09/21/18	8.34	8.53	10.86	9.76	8.21	9.01	9.73	9.41	8.83	9.73	9.79
10/31/18	8.06	8.38	10.18	9.60	7.87	8.74	8.92	8.80	8.62	9.05	8.82
11/21/18	8.56	8.72	11.06	9.32	8.48	9.24	10.51	9.38	8.87	9.43	9.15
12/20/18	8.12	7.81	10.91	8.77	7.89	8.36	9.19	9.59	8.17	9.24	8.53
01/28/19	8.69	9.18	11.71	9.26	8.48	9.05	9.48	9.98	8.97	9.80	9.43
02/28/19	8.15	8.25	11.10	8.39	7.89	8.19	8.83	9.65	9.42	9.39	8.68
03/26/19	8.62	8.87	10.84	9.47	8.40	8.90	8.92	9.45	9.23	9.68	9.09
04/26/19	8.14	8.23	11.18	8.82	8.05	8.55	8.86	9.09	8.62	9.29	8.59
05/29/19	8.12	8.24	11.24	9.67	8.03	8.29	8.88	9.67	8.51	9.49	8.90

Table 2.7

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>	<b>MH2</b>	<b>MH3</b>	<b>MW-6</b>	<b>OGC-1</b>	<b>OGC-5</b>	<b>MH6</b>	<b>OGC-6</b>	<b>MW-7</b>	<b>MH8</b>	<b>OGC-2</b>	<b>MH9</b>
<b>Location</b>											
<b>Date</b>											
06/26/19	8.01	8.36	11.27	11.07	8.07	8.82	10.90	9.82	9.98	9.77	9.28
07/24/19	8.06	8.16	11.02	8.08	8.07	8.64	9.05	9.45	9.51	9.36	9.30
08/28/19	8.10	8.14	11.04	9.45	7.96	8.65	9.07	9.27	8.88	9.16	9.57
09/25/19	8.14	8.20	10.94	8.24	7.92	8.71	8.88	9.38	9.01	9.28	9.45
10/30/19	8.06	8.38	11.12	9.11	8.03	8.77	9.17	9.43	8.60	9.21	9.48
11/26/19	8.17	8.16	11.19	8.97	8.04	8.66	9.16	9.43	8.56	9.33	8.88
12/23/19	8.19	8.40	11.26	9.11	8.02	8.74	9.29	9.55	8.65	9.52	8.82
01/29/20	8.42	8.80	11.31	8.37	8.14	8.65	9.09	9.54	8.60	9.57	8.63
02/26/20	8.34	8.51	11.18	8.57	8.18	8.35	8.51	9.24	8.39	9.48	8.42
03/25/20	8.33	8.31	11.35	9.02	8.15	8.50	8.84	9.45	8.80	9.59	8.57
05/11/20	7.85	7.86	11.39	8.93	8.29	8.43	8.42	9.27	8.43	9.42	9.12
05/26/20	7.70	7.91	10.47	8.83	7.76	8.22	8.44	8.89	8.30	8.80	8.51
06/29/20	8.28	8.03	11.08	8.20	7.96	8.27	8.75	9.25	8.95	9.29	7.85
07/28/20	8.44	8.31	10.78	9.92	7.74	7.92	9.46	8.85	8.15	8.90	8.34
08/26/20	8.63	8.71	10.32	8.85	7.92	8.50	8.90	9.19	8.44	9.13	8.67
09/29/20	9.33	9.44	11.00	8.71	7.65	8.57	9.63	9.45	8.29	9.25	8.88
10/28/20	9.35	9.29	10.67	9.04	7.92	9.05	9.08	9.56	9.17	9.17	10.13
11/30/20	10.13	9.38	10.87	9.48	7.80	8.29	8.99	9.28	9.50	9.25	11.22
12/22/20	9.88	9.62	10.41	9.57	8.35	9.22	9.55	9.93	10.45	9.59	11.35
01/28/21	9.48	9.02	10.72	9.33	8.36	9.45	9.84	9.25	9.17	9.20	11.48
02/24/21	10.97	9.69	10.62	9.63	8.36	10.45	9.74	10.02	10.49	9.50	11.45
03/31/21	11.06	9.45	10.74	9.28	8.16	9.82	10.06	9.74	10.20	9.36	11.40
04/28/21	10.17	9.48	10.53	9.72	8.18	8.81	10.31	9.08	8.88	9.19	11.36
05/25/21	8.70	8.91	10.57	9.26	8.09	8.53	10.47	8.96	8.91	9.28	11.46
06/30/21	10.51	8.99	10.69	9.32	7.85	8.70	10.38	8.93	8.85	9.32	11.42
07/30/21	8.84	8.93	10.47	10.28	8.21	9.42	10.62	10.83	9.19	10.02	11.19
08/30/21	9.29	9.32	10.94	9.25	8.31	9.52	10.30	8.78	9.34	9.26	11.45
09/30/21	10.33	8.91	10.69	9.92	8.09	9.15	10.10	8.60	9.40	9.15	11.48
10/25/21	9.86	9.29	10.80	9.97	8.30	9.46	10.10	11.56	9.74	10.12	11.54
11/30/21	9.49	9.02	10.78	9.60	8.08	9.20	9.94	11.44	9.08	9.87	11.39
12/22/21	11.25	9.42	10.53	9.70	8.17	9.09	10.18	10.62	9.80	9.78	11.28
01/28/22	11.47	9.38	10.63	9.29	8.05	8.49	10.37	9.07	8.34	9.29	11.53
02/28/22	11.47	8.50	9.81	9.17	8.13	9.11	10.66	9.38	8.92	9.40	9.92
03/30/22	11.34	9.05	10.52	9.21	8.51	10.55	10.17	9.27	9.31	9.43	9.81
04/29/22	11.08	9.01	10.76	9.51	8.24	10.04	10.68	8.99	8.94	8.87	10.41
05/23/22	11.62	9.12	10.98	9.65	8.27	10.05	10.65	9.47	9.20	9.43	11.32

**Table 2.7**

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>	<b>MH2</b>	<b>MH3</b>	<b>MW-6</b>	<b>OGC-1</b>	<b>OGC-5</b>	<b>MH6</b>	<b>OGC-6</b>	<b>MW-7</b>	<b>MH8</b>	<b>OGC-2</b>	<b>MH9</b>
<b>Location</b>											
<b>Date</b>											
07/05/22	9.27	9.25	11.16	8.45	8.21	9.61	10.49	9.60	9.58	9.51	11.31
07/28/22	11.53	9.44	10.86	8.69	8.15	9.03	10.62	9.82	9.06	9.73	11.62
08/31/22	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
09/28/22	10.18	8.97	10.00	8.43	7.91	9.14	9.83	8.97	9.22	9.25	10.73
11/01/22	11.12	9.53	10.61	10.00	8.63	9.60	9.81	9.90	9.93	9.79	11.52
11/28/22	11.09	9.66	10.58	10.20	8.83	9.56	9.76	9.96	9.46	10.51	11.57
12/30/22	10.10	9.64	10.49	9.91	8.87	9.25	9.67	9.92	9.12	10.18	10.60
01/27/23	9.10	9.22	10.50	9.49	7.96	8.26	9.83	9.38	8.16	9.40	9.00
02/24/23	9.30	9.28	10.96	9.23	8.17	8.45	10.31	9.56	8.53	9.63	9.36
03/31/23	8.99	9.31	10.23	9.19	9.34	9.24	9.75	9.79	9.09	9.95	9.85
04/28/23	8.94	9.10	9.13	8.96	9.08	9.69	9.95	10.13	9.86	9.97	10.27
05/30/23	9.00	9.16	10.85	8.82	8.81	9.54	9.79	9.94	9.95	10.03	10.10

Table 2.7

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>	<b>OGC-7</b>	<b>MH11</b>	<b>MW-8</b>	<b>OGC-3</b>	<b>MH12</b>	<b>OGC-8</b>	<b>MH14</b>	<b>MW-9</b>	<b>OGC-4</b>	<b>MH15</b>	<b>MH16</b>
<b>Location</b>											
<b>Date</b>											
06/27/13	10.27	10.61	10.48	10.86	8.78	8.69	8.82	11.25	11.25	9.05	9.07
07/24/13	10.96	8.54	11.17	11.30	8.70	10.60	8.10	10.62	10.54	8.71	8.94
08/22/13	11.26	8.63	11.37	11.66	9.01	11.16	8.41	11.23	11.16	7.51	7.56
09/30/13	10.97	8.81	11.10	11.39	8.87	11.00	8.25	10.95	10.98	7.54	7.42
10/30/13	10.71	8.62	10.83	11.08	8.66	10.47	8.25	10.57	10.46	7.18	6.85
11/27/13	10.91	8.97	11.05	11.31	8.88	10.21	8.02	10.65	10.80	6.83	6.34
12/31/13	11.07	9.11	11.27	11.58	7.60	11.15	8.55	11.08	11.32	7.11	6.39
01/30/14	11.06	9.14	11.37	11.53	9.24	11.37	9.15	11.14	11.47	7.56	7.83
02/26/14	10.94	9.22	11.37	11.48	9.39	11.09	9.41	10.93	11.27	8.04	7.84
03/28/14	10.90	9.41	11.16	11.40	9.15	11.11	8.48	11.09	11.18	8.07	8.43
04/25/14	10.89	8.75	10.97	11.43	9.38	11.18	8.18	11.02	10.80	7.54	7.47
05/29/14	11.55	8.88	11.97	12.18	8.54	11.90	8.72	11.73	11.10	8.46	8.65
06/25/14	11.25	7.62	11.52	11.90	9.94	11.68	9.38	11.45	11.14	8.50	8.97
07/29/14	10.83	8.51	11.10	11.43	8.65	11.05	8.71	10.94	10.51	7.09	7.75
08/26/14	10.82	8.16	11.12	11.39	8.63	10.87	8.25	10.99	10.58	6.52	6.41
09/30/14	11.07	8.53	11.35	11.53	8.90	11.04	8.41	11.02	11.16	7.54	7.60
10/29/14	10.85	8.32	11.01	11.25	8.94	10.80	8.18	10.68	10.65	7.66	7.40
11/25/14	11.05	8.92	11.27	11.55	9.22	11.03	8.63	10.87	11.36	7.73	7.46
12/30/14	11.49	9.67	11.83	12.01	9.47	11.51	8.47	11.34	11.71	8.25	8.11
01/28/15	10.85	8.87	11.08	11.36	8.92	11.09	8.27	10.93	11.12	6.55	7.25
02/24/15	10.86	NM	10.85	11.00	8.57	10.88	NM	11.56	11.72	7.63	7.22
03/25/15	9.92	9.53	6.27	5.96	6.15	8.66	NM	8.97	8.96	8.99	8.89
04/23/15	8.46	8.33	8.05	8.73	9.36	8.99	9.26	11.26	11.26	8.38	8.21
05/29/15	11.49	8.35	11.58	11.95	8.77	11.92	9.32	11.54	11.40	8.21	7.51
06/24/15	11.35	7.78	11.73	11.93	9.60	11.82	8.85	11.57	11.22	7.91	8.03
07/28/15	11.09	9.33	11.57	11.69	8.54	11.20	8.37	11.08	10.91	8.05	8.12
08/27/15	11.35	9.75	11.75	11.76	10.18	11.50	9.32	11.39	10.98	7.50	7.79
09/25/15	11.37	8.35	11.55	11.94	9.05	11.44	8.63	11.41	10.93	7.97	7.77
10/30/15	11.48	8.79	11.71	12.03	9.55	11.51	11.34	11.02	11.49	10.46	7.80
11/30/15	11.26	8.82	11.63	11.93	9.52	11.36	11.52	11.10	11.45	11.16	7.98
12/30/15	11.62	9.71	11.85	12.19	9.33	11.68	11.76	11.27	11.92	11.46	8.04
01/28/16	11.36	8.77	11.62	11.86	9.37	11.75	11.42	11.09	11.62	11.01	8.08
02/23/16	11.65	9.57	11.90	12.26	9.46	11.94	11.46	11.27	11.76	10.93	8.51
03/31/16	11.43	8.72	11.69	11.99	9.20	11.77	10.02	10.95	11.40	9.09	7.81
04/28/16	11.52	8.81	11.77	12.08	9.20	11.95	10.16	11.61	11.60	9.74	7.63
05/26/16	11.60	8.72	11.69	12.02	8.90	11.94	10.10	11.53	11.49	9.74	8.41

Table 2.7

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>	<b>OGC-7</b>	<b>MH11</b>	<b>MW-8</b>	<b>OGC-3</b>	<b>MH12</b>	<b>OGC-8</b>	<b>MH14</b>	<b>MW-9</b>	<b>OGC-4</b>	<b>MH15</b>	<b>MH16</b>
<b>Location</b>											
<b>Date</b>											
06/30/16	11.47	8.40	11.69	12.07	9.04	11.87	10.19	11.73	11.20	9.98	9.13
07/28/16	11.30	8.20	11.56	11.93	8.90	11.78	9.96	11.57	11.18	10.34	9.44
08/24/16	10.26	10.40	11.72	11.39	10.89	11.91	10.53	11.55	11.80	8.97	7.11
09/27/16	11.38	8.09	11.46	11.95	9.03	11.62	9.91	11.44	11.37	10.80	8.33
10/25/16	9.31	8.77	10.35	10.22	10.00	10.47	10.18	10.66	9.02	8.06	7.47
11/30/16	11.20	8.60	11.53	11.87	9.14	11.54	10.43	11.45	11.48	9.94	7.45
12/28/16	11.32	8.65	11.49	11.67	8.65	11.29	8.47	11.18	11.19	7.61	7.47
01/31/17	11.51	8.78	11.89	12.03	8.91	11.89	9.19	11.66	11.49	8.92	8.05
02/28/17	11.46	8.68	11.73	11.97	8.89	11.78	9.38	11.58	11.15	8.01	7.29
03/31/17	11.58	8.92	11.90	12.17	9.08	11.87	9.71	11.80	11.59	9.37	8.11
04/28/17	11.52	9.15	11.85	12.13	9.06	11.90	9.43	11.72	11.40	8.21	7.84
05/31/17	11.54	9.20	11.87	12.04	9.49	11.75	9.12	11.67	10.89	7.85	7.48
06/27/17	11.50	8.84	11.94	12.22	9.16	11.94	9.09	11.84	11.48	7.59	7.59
07/26/17	11.37	8.54	11.76	12.08	8.76	11.79	8.43	11.69	11.48	7.59	7.48
08/29/17	11.27	8.76	11.62	11.94	8.87	11.54	8.52	11.55	10.69	7.70	7.44
09/25/17	11.34	8.77	11.62	11.87	9.05	11.51	9.00	11.59	10.84	7.66	7.47
10/24/17	11.76	8.79	11.80	12.06	9.18	11.43	8.72	11.71	11.19	7.81	7.97
11/27/17	11.28	8.56	11.56	11.91	8.87	11.33	9.13	11.56	11.17	7.38	6.97
12/21/17	11.46	8.78	11.84	12.07	9.28	11.64	9.16	11.74	11.41	7.37	7.39
01/31/18	11.43	9.85	11.86	12.05	9.59	11.75	9.44	11.79	11.64	7.45	7.57
02/26/18	11.61	8.92	11.89	12.08	8.54	11.82	8.89	11.78	11.68	7.53	7.53
03/23/18	11.98	9.00	12.41	12.63	8.89	12.38	8.90	12.29	12.08	7.42	7.58
04/27/18	11.35	8.97	11.79	11.78	9.17	11.63	9.08	11.56	11.39	7.12	7.22
05/23/18	11.00	8.24	11.44	11.51	8.07	11.44	7.96	11.40	10.99	7.35	7.45
06/11/18	11.46	9.06	11.93	12.01	9.00	11.98	8.57	11.89	11.14	7.37	7.60
07/25/18	11.17	8.69	11.64	11.83	9.02	11.69	8.65	11.25	11.58	6.95	7.22
08/27/18	11.39	8.49	11.84	12.05	9.23	11.74	8.81	11.84	11.14	7.41	7.48
09/21/18	11.36	8.58	11.87	12.12	9.00	11.78	8.59	11.90	11.06	7.56	7.63
10/31/18	10.64	8.42	11.17	11.26	8.87	10.93	8.67	11.08	10.88	6.89	6.63
11/21/18	11.38	8.84	11.87	12.06	8.95	11.52	8.68	11.70	11.59	7.04	7.25
12/20/18	11.46	7.99	11.94	12.05	8.70	11.72	8.27	11.88	11.49	7.59	7.41
01/28/19	12.40	9.59	12.81	12.92	9.41	12.74	8.58	13.22	12.99	7.74	7.91
02/28/19	11.54	8.15	11.86	12.03	8.19	11.88	8.29	11.94	11.75	7.19	7.36
03/26/19	11.65	9.12	11.99	12.19	8.93	11.99	8.79	11.91	11.58	7.15	7.11
04/26/19	11.51	8.42	12.01	12.03	8.39	11.97	8.01	11.89	11.37	7.48	7.61
05/29/19	11.55	8.13	11.98	12.00	8.46	11.93	7.69	11.47	10.79	6.92	7.57

**Table 2.7**

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>	<b>OGC-7</b>	<b>MH11</b>	<b>MW-8</b>	<b>OGC-3</b>	<b>MH12</b>	<b>OGC-8</b>	<b>MH14</b>	<b>MW-9</b>	<b>OGC-4</b>	<b>MH15</b>	<b>MH16</b>
<b>Location</b>											
<b>Date</b>											
06/26/19	11.65	8.70	12.03	12.10	8.86	11.92	8.53	11.90	11.31	7.41	7.53
07/24/19	11.30	8.55	11.80	11.90	8.69	11.81	8.19	11.80	11.11	7.44	7.53
08/28/19	11.35	8.34	11.79	11.93	8.96	11.80	8.40	11.76	11.19	7.38	7.45
09/25/19	11.19	9.02	11.73	11.78	8.54	11.63	8.44	11.68	11.12	7.18	7.49
10/30/19	11.42	8.19	11.89	12.05	8.82	11.73	7.88	11.82	11.19	7.26	7.53
11/26/19	11.45	8.23	11.93	12.04	8.61	11.68	8.34	11.80	11.38	7.17	7.53
12/23/19	11.76	8.62	12.26	12.29	8.57	11.92	8.52	12.13	11.65	7.24	7.48
01/29/20	11.77	8.68	12.20	12.18	8.42	12.12	8.47	12.01	11.54	7.19	7.32
02/26/20	11.57	8.62	11.97	12.07	8.43	11.95	8.26	11.91	11.31	7.14	7.34
03/25/20	11.73	8.43	12.21	12.37	8.49	12.17	8.23	12.10	11.79	7.40	7.41
05/11/20	11.98	8.07	12.57	12.61	8.97	12.58	8.47	12.49	12.09	7.56	8.17
05/26/20	10.97	8.06	11.40	11.55	8.02	11.45	7.97	11.34	10.54	6.97	6.88
06/29/20	11.35	8.00	11.82	11.91	8.25	11.82	8.10	11.76	11.19	7.34	7.34
07/28/20	11.06	7.90	11.61	11.72	8.07	11.44	7.97	11.53	10.94	7.41	7.40
08/26/20	11.16	8.15	11.68	11.72	8.06	11.54	7.80	11.58	8.76	7.25	7.70
09/29/20	11.28	8.00	11.75	11.94	8.05	11.62	7.94	11.68	10.86	7.57	7.56
10/28/20	11.13	8.25	11.70	11.86	8.71	11.48	8.27	11.60	11.42	7.83	8.04
11/30/20	11.49	8.28	11.88	11.93	8.81	11.61	8.26	11.69	11.35	7.77	7.89
12/22/20	11.42	8.73	11.88	11.95	8.56	11.62	8.50	11.71	11.48	7.53	8.19
01/28/21	11.34	8.79	11.86	11.97	8.66	11.85	8.49	11.76	11.27	7.74	7.67
02/24/21	11.46	8.85	11.87	11.97	8.76	11.93	8.96	11.73	11.72	7.55	7.61
03/31/21	11.45	8.86	11.92	11.90	8.82	11.88	8.51	11.75	11.38	7.63	7.56
04/28/21	11.40	8.79	11.86	11.96	8.84	11.87	8.45	11.63	11.53	7.71	7.45
05/25/21	11.43	8.54	11.90	11.97	9.16	11.81	8.36	11.62	11.34	7.63	7.34
06/30/21	11.22	8.19	11.77	11.87	9.43	11.87	8.51	11.54	11.30	7.63	7.40
07/30/21	11.24	8.74	11.71	11.84	9.44	11.70	9.28	11.58	11.09	7.31	6.79
08/30/21	11.46	8.73	11.93	12.12	9.49	11.86	9.14	11.78	11.74	7.85	7.80
09/30/21	11.37	7.87	11.85	12.00	9.05	11.71	8.66	11.66	10.87	7.69	7.70
10/25/21	11.44	8.92	11.91	11.99	9.37	11.68	8.85	11.74	10.59	7.54	7.26
11/30/21	11.49	8.98	12.04	12.18	9.36	11.62	8.49	11.73	11.52	7.61	7.82
12/22/21	11.49	8.88	12.05	12.17	8.86	11.67	8.76	11.70	11.87	7.63	7.85
01/28/22	11.42	8.84	12.01	12.20	8.90	12.09	8.55	11.78	11.91	7.68	7.79
02/28/22	11.54	9.00	12.04	12.14	8.65	11.88	8.79	11.84	11.82	7.98	7.78
03/30/22	11.44	8.90	11.81	11.96	8.88	11.80	8.59	11.67	11.56	7.86	7.79
04/29/22	11.01	8.37	11.66	11.73	8.67	11.58	8.17	11.65	11.19	7.88	7.84
05/23/22	11.64	9.42	12.21	12.27	9.13	12.17	8.66	12.07	11.92	7.73	7.71

**Table 2.7**

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>	<b>OGC-7</b>	<b>MH11</b>	<b>MW-8</b>	<b>OGC-3</b>	<b>MH12</b>	<b>OGC-8</b>	<b>MH14</b>	<b>MW-9</b>	<b>OGC-4</b>	<b>MH15</b>	<b>MH16</b>
<b>Location</b>											
<b>Date</b>											
07/05/22	11.31	9.71	11.97	12.06	9.37	11.86	8.64	11.58	11.54	7.94	7.57
07/28/22	11.63	8.4	12.14	12.19	9.31	12.1	9	1.96	11.84	8.26	8.35
08/31/22	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
09/28/22	10.81	8.63	11.19	11.23	9.32	11.02	8.94	10.9	10.16	7.35	7.89
11/01/22	10.73	9.75	9.49	9.76	9.52	9.13	9.37	10.73	10.06	8.63	8.79
11/28/22	11.37	10.12	11.89	11.50	10.10	11.10	10.10	11.50	11.67	8.80	8.97
12/30/22	11.37	10.17	11.92	12.07	9.85	11.18	NM	11.62	11.42	8.65	8.65
01/27/23	11.91	8.88	12.29	12.37	8.81	12.03	8.50	12.03	11.87	7.67	6.96
02/24/23	11.87	8.94	12.30	12.17	8.85	12.12	8.62	12.09	12.06	7.99	6.86
03/31/23	11.32	9.81	11.79	11.75	9.80	11.65	9.73	11.63	11.61	8.12	8.02
04/28/23	11.06	9.71	11.82	11.37	10.52	11.66	10.05	10.28	9.50	8.07	8.13
05/30/23	11.40	9.56	12.02	12.00	10.29	11.86	9.50	11.75	11.48	8.42	8.38

**Table 2.7**

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>											
<b>Location</b>	<b>City MH1</b>	<b>City MH2</b>	<b>City MH3</b>								
<b>Date</b>											
06/27/13	9.55	9.05	9.34								
07/24/13	6.49	6.99	7.03								
08/22/13	8.09	7.96	7.92								
09/30/13	8.74	7.75	7.57								
10/30/13	8.88	7.48	7.30								
11/27/13	NM	NM	NM								
12/31/13	NM	NM	NM								
01/30/14	10.87	8.86	7.57								
02/26/14	8.59	7.91	7.70								
03/28/14	9.61	8.79	9.06								
04/25/14	8.70	8.57	8.76								
05/29/14	10.66	9.69	9.53								
06/25/14	10.42	10.05	9.84								
07/29/14	9.78	9.01	8.80								
08/26/14	10.04	9.26	8.83								
09/30/14	10.09	9.44	8.96								
10/29/14	10.05	9.63	9.29								
11/25/14	10.46	8.21	8.41								
12/30/14	10.62	8.82	9.02								
01/28/15	7.50	6.75	6.28								
02/24/15	6.17	6.61	6.22								
03/25/15	7.61	7.49	7.73								
04/23/15	8.63	8.46	8.30								
05/29/15	10.46	9.80	8.98								
06/24/15	9.36	8.99	8.82								
07/28/15	6.86	6.84	7.30								
08/27/15	9.49	8.85	9.08								
09/25/15	10.13	9.50	9.24								
10/30/15	10.00	8.96	8.98								
11/30/15	10.71	9.79	9.29								
12/30/15	10.66	9.25	9.22								
01/28/16	10.72	9.90	9.43								
02/23/16	6.78	6.90	6.96								
03/31/16	8.48	8.39	8.25								
04/28/16	8.16	7.96	7.69								
05/26/16	8.49	7.94	7.10								

**Table 2.7**

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>											
<b>Location</b>	<b>City MH1</b>	<b>City MH2</b>	<b>City MH3</b>								
<b>Date</b>											
06/30/16	7.92	7.49	7.22								
07/28/16	7.82	Dry	7.33								
08/24/16	7.27	7.50	7.51								
09/27/16	7.30	7.49	7.51								
10/25/16	7.20	7.23	7.47								
11/30/16	7.04	7.51	7.47								
12/28/16	7.83	7.74	7.69								
01/31/17	7.96	7.85	7.52								
02/28/17	7.61	6.92	7.23								
03/31/17	8.48	7.75	7.84								
04/28/17	8.44	8.26	8.07								
05/31/17	8.5	8.27	8.06								
06/27/17	8.70	8.34	8.17								
07/26/17	7.63	7.56	7.25								
08/29/17	7.66	7.46	7.39								
09/25/17	7.22	7.11	7.05								
10/24/17	8.06	7.37	7.46								
11/27/17	7.59	7.41	7.01								
12/21/17	7.62	7.51	7.50								
01/31/18	8.41	8.11	7.29								
02/26/18	7.92	7.71	7.65								
03/23/18	8.02	7.73	7.70								
04/27/18	7.45	7.42	7.37								
05/23/18	7.60	7.57	7.46								
06/11/18	7.76	7.47	7.46								
07/25/18	7.28	7.17	7.13								
08/27/18	7.81	7.54	7.5								
09/21/18	7.95	7.67	7.68								
10/31/18	6.07	6.23	6.35								
11/21/18	7.04	7.22	7.12								
12/20/18	8.11	7.82	7.47								
01/28/19	8.32	8.21	8.2								
02/28/19	NM	NM	NM								
03/26/19	6.64	6.82	6.85								
04/26/19	7.61	7.62	7.61								
05/29/19	8.51	8.12	7.94								

**Table 2.7**

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>											
<b>Location</b>	<b>City MH1</b>	<b>City MH2</b>	<b>City MH3</b>								
<b>Date</b>											
06/26/19	7.35	7.38	7.4								
07/24/19	7.74	7.57	7.5								
08/28/19	7.45	7.34	7.38								
09/25/19	6.91	7.19	7.4								
10/30/19	7.87	7.67	7.65								
11/26/19	7.65	7.68	7.62								
12/23/19	7.64	7.82	7.77								
01/29/20	7.73	7.71	7.69								
02/26/20	7.88	7.83	7.78								
03/25/20	7.75	7.81	7.8								
05/11/20	7.95	7.69	7.78								
05/26/20	7.33	7.39	7.37								
06/29/20	7.9	7.8	7.75								
07/28/20	8.15	7.85	7.63								
08/26/20	8.39	8.15	8.02								
09/29/20	8.62	8.08	7.9								
10/28/20	9.78	9.42	9.36								
11/30/20	NM	NM	NM								
12/22/20	11.12	10.41	10.39								
01/28/21	9.27	8.66	8.48								
02/24/21	11.17	11.03	11								
03/31/21	11.09	10.09	10.06								
04/28/21	NM	NM	NM								
05/25/21	NM	NM	NM								
06/30/21	NM	NM	NM								
07/30/21	NM	NM	NM								
08/30/21	NM	NM	NM								
09/30/21	NM	NM	NM								
10/25/21	NM	NM	NM								
11/30/21	NM	NM	NM								
12/22/21	NM	NM	NM								
01/28/22	NM	NM	NM								
02/28/22	NM	NM	NM								
03/30/22	NM	NM	NM								
04/29/22	NM	NM	NM								
05/23/22	NM	NM	NM								

**Table 2.7**

**PH Readings**  
**Gratwick-Riverside Park Site**  
**North Tonawanda, New York**

<b>Monitoring</b>											
<b>Location</b>	<b>City MH1</b>	<b>City MH2</b>	<b>City MH3</b>								
<b>Date</b>											
07/05/22	NM	NM	NM								
07/28/22	NM	NM	NM								
08/31/22	NM	NM	NM								
09/28/22	NM	NM	NM								
11/01/22	NM	NM	NM								
11/28/22	NM	NM	NM								
12/30/22	NM	NM	NM								
01/27/23	NM	NM	NM								
02/24/23	NM	NM	NM								
03/31/23	NM	NM	NM								
04/28/23	NM	NM	NM								
05/30/23	NM	NM	NM								
Notes:											
(1) - Affected by muriatic acid addition.											
NM - Not Measured due to Unsafe Road Conditions or Inaccessible due to Snow Cover.											

**Table 2.8**

Page 1 of 1

**Effluent Sampling Summary  
Gratwick-Riverside Park Site  
North Tonawanda, New York**

<b>LOCATIONS</b>	
Effluent monitoring station at Site discharge point	
<b>FREQUENCY</b>	
Semi-Annual (Spring and Fall as dictated by the City of North Tonawanda Wastewater Discharge Permit)	
<b>PARAMETERS</b>	
<b>Volatiles</b>	
Acetone	Methylene Chloride
Benzene	Styrene
2-Butanone	Tetrachloroethene
Chlorobenzene	Toluene
1,1-Dichloroethane	1,1,1-Trichloroethane
1,2-Dichloroethane	Trichloroethene
trans-1,2-Dichloroethene	Vinyl Chloride
Ethylbenzene	Xylenes (Total)
<b>Semi-Volatiles</b>	
1,4-Dichlorobenzene	4-Methylphenol
1,2-Dichlorobenzene	Naphthalene
2,4-Dimethylphenol	Di-n-octylphthalate
2-Methylphenol	Phenols (4AAP)
<b>Inorganics</b>	
Mercury	
<b>Wet Chemistry</b>	
Chloride	pH
Cyanide	Phosphorous
NH3	Sulfate
NO3	Sulfide

Table 2.9

Page 1 of 4

**Analytical Results Summary  
Site Effluent  
Gratwick-Riverside Park Site**

Sample Date:		09/13/12	03/14/13	09/12/13	04/16/14	10/07/14	04/16/15	10/8/15	04/14/16	10/04/16	04/06/17	10/05/17	04/05/18	10/04/18
Parameter	Unit													
<b>Volatiles</b>														
1,1,1-Trichloroethane	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
1,1-Dichloroethane	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
1,2-Dichloroethane	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
2-Butanone	µg/L	25U	25U	25U	25U	25U	25U	25U	25U	25U	25U	NA	25U	25 U
Acetone	µg/L	25U	25U	25U	25U	25U	25U	25U	25U	25U	25U	NA	25U	25 U
Benzene	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Chlorobenzene	µg/L	5.0U	5.0U	5.0U	5.0U	5.1	5.0U	5.0U	5.0U	5.0U	5.0U	9.5	5.0U	5.0 U
Ethylbenzene	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Methylene chloride	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Styrene	µg/L	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Tetrachloroethene	µg/L	6.3	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Toluene	µg/L	27	16	13	14	13	5.0U	12	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
trans-1,2-Dichloroethene	µg/L	5.0U	5.0U	5.0U	5.0U	5.4	5.0U	5.1	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Trichloroethene	µg/L	50	45	34	38	26	5.0	23	12	5.0U	5.0U	5.0U	5.0U	5.0 U
Vinyl chloride	µg/L	5.3	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0 U
Xylene (total)	µg/L	18	18	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U	10 U
<b>Total VOCs</b>		<b>106.6</b>	<b>79</b>	<b>47</b>	<b>52</b>	<b>49.5</b>	<b>5</b>	<b>40.1</b>	<b>12</b>	<b>0</b>	<b>9.5</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Semi-Volatiles</b>														
1,2-Dichlorobenzene	µg/L	0.68	1.2	6.2	0.92	4.8U	4.8U	4.7U	4.7U	4.8U	4.8U	5.0U	5.0U	4.8 U
1,4-Dichlorobenzene	µg/L	3.6	7.7	5.7	6.4	9.4	7.0	9.2	4.7U	5.9U	26	20	5.6U	5.4 U
2,4-Dimethylphenol	µg/L	5.5	7.3	6.5	10	7.8J	13	5.0	5.9	1.3U	53	5.2	1.7	1.3 UJ
2-Methylphenol	µg/L	0.62	3.4	0.22U	0.44	5.3	6.2	4.9	2.7	0.77U	7.7	0.81U	0.81U	0.77 UJ
4-Methylphenol	µg/L	3.0	6.7	1.3	0.62	7.4	59	3.7	8.5	0.75U	62	0.79U	0.79U	0.75 UJ
Di-n-octyl phthalate	µg/L	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6U	4.6 U
Naphthalene	µg/L	1.4	0.53	0.080U	0.47	0.82U	0.97	0.81U	0.81U	0.82U	1.3	0.86U	0.86U	0.82 U
Phenol	µg/L	0.12U	5.5	0.12U	0.12U	22	4.0	3.0	0.33U	0.33U	3.0	0.35U	0.35U	0.33 UJ
<b>Total SVOCs</b>				<b>19.7</b>	<b>18.2</b>	<b>51.9</b>	<b>89.2</b>	<b>25.8</b>	<b>17.1</b>	<b>0</b>	<b>153.0</b>	<b>25.2</b>	<b>1.7</b>	<b>0</b>
<b>Metals</b>														
Aluminum	mg/L	0.20U	0.20U	0.20U	0.20U	0.20U	0.20U	0.20U	0.67	0.20U	0.20U	0.20U	0.20U	0.20 U
Antimony	mg/L	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020U	0.020 U
Arsenic	mg/L	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.015U	0.015U	0.015U	0.015U	0.015U	0.015 U
Barium	mg/L	0.068	0.085	0.064	0.096	0.067	0.092	0.068	0.096	0.130	0.081	0.076	0.092	0.044
Beryllium	mg/L	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020 U
Cadmium	mg/L	0.0010U	0.0010U	0.0010U	0.0010U	0.0010U	0.0010U	0.0010U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020U	0.0020 U
Chromium	mg/L	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040U	0.0040 U
Copper	mg/L	0.013	0.050	0.013	0.010U	0.014	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010 U
Iron	mg/L	0.050U	0.050U	0.050U	0.40	0.050U	0.17	0.050U	0.18	0.30	1.0	1.7	1.1	0.097
Lead	mg/L	0.0067	0.0050U	0.0050U	0.0050U	0.0050U	0.0050U	0.0050U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010 U
Magnesium	mg/L	0.99	2.9	0.78	5.5	1.1	6.5	1.4	15.2	45.2	9.6	8.3	11	3.2
Manganese	mg/L	0.0030U	0.0030U	0.0030U	0.010	0.0030U	0.018	0.0030U	0.26	0.062	0.053	0.099	0.068	0.0070
Mercury	mg/L	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020U	0.00020 U
Nickel	mg/L	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.014	0.010U	0.010U	0.010 U
Selenium	mg/L	0.015U	0.015U	0.015U	0.015U	0.015U	0.015U	0.015U	0.025U	0.025U	0.025U	0.025U	0.025U	0.025 U
Silver	mg/L	0.0030U	0.0030U	0.0030U	0.0030U	0.0030U	0.0030U	0.0030U	0.0060U	0.0060U	0.0060U	0.0060U	0.0060U	0.0060 U
Sodium	mg/L	238	353	206	359	233	361	245	351	258	319	227	260	123
Zinc	mg/L	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.010U	0.017	0.028	0.010U	0.010 U

Table 2.9

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**Analytical Results Summary  
Site Effluent  
Gratwick-Riverside Park Site**

Sample Date:		09/13/12	03/14/13	09/12/13	04/16/14	10/07/14	04/16/15	10/8/15	04/14/16	10/04/16	04/06/17	10/05/17	04/05/18	10/04/18
Parameter	Unit													
<b>General Chemistry</b>														
pH	S.U.	10.82	10.32	10.38	10.22	9.90	9.20	10.21	8.86	8.43	8.80	7.51	7.86	8.82
Hardness	mg/L	176	250	192	252	180	340	192	332	352	276	244	316	188
Total Dissolved Solids (TDS)	mg/L	911	1170	823	1360	872	1430	977	1450	1180	1280	995	1160	605
Total Suspended Solids (TSS)	mg/L	4	7	12	8	2	16	12	14	3	11	24	15	4.0 U
Chloride	mg/L	326	398	333	633	386	662	409	648	421	576	408	411	195
BOD	mg/L	45	16	18	10.3	20	13.3	13.7	13.3	25	12	8.3	4.95	6.04
COD	mg/L	70	37	21	17	75	5.0U	50U	25U	125	67	186	127	79
Oil and Grease	mg/L	0.10U	0.2	0.10U	0.10U	0.10U	0.10U	0.10U	0.001	0.10U	0.20	NA	0.10U	0.10 U
Organic Carbon	mg/L	8.2	8.0	7.6	6.6	13.4	5.0U	5.5	6.1	11	8.7	NA	12.7	8.37
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	44.6	48.9	47.2	29	47.3	40.0	43.5	75.3	381	94	116	115	44.6
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	5.0U	5.0U	5.0U	21	5.0U	40.0	5.0U	38.2	349	94	116	115	37.9
Ammonia	mg/L	2.52	2.52	0.84	1.1	1.12	0.84	1.40	1.12	1.12	1.12	NA	0.84	0.56
Nitrate (as N)	mg/L	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.15	0.050U	0.050U	0.050U	0.13UJ	0.050 U
TKN	mg/L	4.48	3.08	1.12	1.68	1.68	1.12	2.24	1.68	1.68	1.12	NA	1.12	1.68
Sulfate	mg/L	159	118	166	183	136	216	127	237	65.4	159	160	218	157
Sulfide	mg/L	3.0	4.4	3.6	3.2	3.6	2.0	3.6	1.6	30.2	6.2	1.6	1.0U	1.0 U
Phenol	mg/L	0.008U	0.012U	0.011U	0.009U	0.011U	0.085U	0.11U	0.10U	0.095U	0.10U	0.10U	0.100U	0.100 U
Phosphorous	mg/L	0.15	0.12	0.16	0.16	0.17	0.10	0.10U	0.10U	1.30	0.10U	0.14	0.10U	0.10 U
Cyanide	mg/L	0.005U	0.005U	0.005U	0.005U	0.005U	0.005U	0.005	0.005U	0.3	0.005U	NA	0.005U	0.010 U
Notes:														
(1)	- Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, TOGS 1.1.1. Lowest Standard/Guidance Value shown													
(2)	- Guidance Value													
(3)	- Calculated using a hardness of 300 ppm													
(4)	- Applies to dissolved form													
(5)	- Hardness >75 mg/L													
5.0U	- Non-detect at associated value													
NA	- Not Analyzed													
U	- Not detected. No associated reporting limit													
J	- Estimated													
NL	- Not Listed													
5.1	- Concentration exceeds Surface Water Standard													

Table 2.9

Page 3 of 4

**Analytical Results Summary  
Site Effluent  
Gratwick-Riverside Park Site**

Sample Date:		4/11/2019	10/18/2019	4/23/2020	10/8/2020	4/14/2021	10/6/2021	5/3/2022	11/2/2022	4/27/2023	Surface Water Standard	
Parameter	Unit										(1)	
<b>Volatiles</b>												
1,1,1-Trichloroethane	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
1,1-Dichloroethane	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
1,2-Dichloroethane	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.6	
2-Butanone	µg/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50	
Acetone	µg/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50	
Benzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1	
Chlorobenzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	7.3	5.0 U	5.1	5.0 U	5.0 U	5	
Ethylbenzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
Styrene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
Tetrachloroethene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.7	(2)
Toluene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	10	6.7	5.6	13	5.0 U	5	
trans-1,2-Dichloroethene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5	
Trichloroethene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	12	8	13	17	5.0 U	5	
Vinyl chloride	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.5 J	5.0 U	5.0 U	0.3	(2)
Xylene (total)	µg/L	10 U	10 U	10 U	10 U	15	10 U	5.0 U	19	10 U	5	each
<b>Total VOCs</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>44.3</b>	<b>14.7</b>	<b>16.2</b>	<b>49</b>	<b>0</b>		
<b>Semi-Volatiles</b>												
1,2-Dichlorobenzene	µg/L	4.8 U	10 U	10 U	10 U	25 U	10 U	10 U	10 U	10 U	3	
1,4-Dichlorobenzene	µg/L	15	10 U	13	24	28 U	10 U	22	12	10 U	3	
2,4-Dimethylphenol	µg/L	1.3 U	5.0 U	5.0 U	5.0 U	7.0 U	7.0 U	5.0 U	5.0 U	5.0 U	50	(2)
2-Methylphenol	µg/L	0.77 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	6.6	5.0 U	NL	
4-Methylphenol	µg/L	0.75 U	5.0 U	5.0 U	5.0 U	14	5.0 U	5.0 U	5.0 U	5.0 U	NL	
Di-n-octyl phthalate	µg/L	4.6 U	5.0 U	5.0 U	5.0 U	6.0 U	6.0 U	5.0 U	5.0 U	5.0 U	50	(2)
Naphthalene	µg/L	0.82 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10	
Phenol	µg/L	0.33 U	5.0 U	5.0 U	5.0 U	6.8	5.0 U	5.0 U	5.0 U	5.0 U	1	
<b>Total SVOCs</b>		<b>15</b>	<b>0</b>	<b>13</b>	<b>24</b>	<b>20.8</b>	<b>0</b>	<b>22</b>	<b>18.6</b>	<b>0</b>		
<b>Metals</b>												
Aluminum	mg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.2	0.20 U	0.1	
Antimony	mg/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.003	
Arsenic	mg/L	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.050	
Barium	mg/L	0.091	0.08	0.11	0.061	0.110	0.076	0.066	0.080	0.064	1.0	
Beryllium	mg/L	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	1.1	(5)
Cadmium	mg/L	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.005	
Chromium	mg/L	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.050	
Copper	mg/L	0.010 U	0.010 U	0.010 U	0.010 U	0.015	0.02	0.01 U	0.010 U	0.010 U	0.023	(3)
Iron	mg/L	0.073	3	0.65	0.050 U	1.6	0.38	0.05 U	0.056	0.6	0.30	
Lead	mg/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.012	(3)
Magnesium	mg/L	12.3	7.4	15.3	4.9	8.6	1	3.1	1.7	9.8	35	
Manganese	mg/L	0.056	0.17	0.11	0.02	0.14	0.013	0.0069	0.0044	0.12	0.30	
Mercury	mg/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	7E-07	(4)
Nickel	mg/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.10	
Selenium	mg/L	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0046	(4)
Silver	mg/L	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.0060 U	0.050	
Sodium	mg/L	266	170	225	258	289	194	258	229	214	NL	
Zinc	mg/L	0.010 U	0.024	0.010 U	0.010 U	0.18	0.021	0.01 U	0.01 U	0.010 U	2.0	(2)

Table 2.9

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**Analytical Results Summary  
Site Effluent  
Gratwick-Riverside Park Site**

Sample Date:		4/11/2019	10/18/2019	4/23/2020	10/8/2020	4/14/2021	10/6/2021	5/3/2022	11/2/2022	4/27/2023	Surface Water Standard	
Parameter	Unit										(1)	
<b>General Chemistry</b>												
pH	S.U.	8.16	7.52	7.91	7.66	8.82	10.36	9.53	10.63	8.03	NL	
Hardness	mg/L	276	204	364	220	372	268	176	224	264	NL	
Total Dissolved Solids (TDS)	mg/L	1120	1020	1040	1140	1140	827	207	924	898	NL	
Total Suspended Solids (TSS)	mg/L	4	6.3	31	52	70	193	25	10.77	7.85	NL	
Chloride	mg/L	405	229	338	384	470	283	397	358	335	250	
BOD	mg/L	6.84	7.45	11.23	8.87	7.6	9.42	8.05	15.96	U	NL	
COD	mg/L	50 U	136	62	165	50	NA	NA	NA	NA	NL	
Oil and Grease	mg/L	0.2	0.1	0.2	0.2	0.3	0.4	4.9	3.1	U	NL	
Organic Carbon	mg/L	11.76	10.58	18.33	15.89	10.44	NA	NA	NA	NA	NL	
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	103	101	183	50.2	188	78.5	32.1	63.5	145	NL	
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	103.0	101.0	183.0	50.2	188	78.5	32.1	63.5	145	NL	
Ammonia	mg/L	1.12	1.4	1.68	1.4	1.12	1.12	U	NA	NA	2.0	
Nitrate (as N)	mg/L	0.050 U	0.050 U	0.074	0.050 U	0.050 U	0.050 U	0.050 U	U	0.089	10	
TKN	mg/L	3.00 U	3.00 U	2.24	3.0 U	6.5	5.3	4.9	4.5	3.7	NL	
Sulfate	mg/L	206	131	218	200	154	158	203	180	196	250	
Sulfide	mg/L	16	2	1.0 U	1.2	2	5.6	4.8	2.8	1.0 U	0.05	(2)
Phenol	mg/L	ND	ND	ND	ND	6.8	U	6.8	U	U	0.001	
Phosphorous	mg/L	0.16	0.29	0.23	0.61	0.22	0.1	0.016	0.065	0.168	0.020	(2)
Cyanide	mg/L	ND	ND	0.014	0.010 U	R	0.019	0.010 UJ	0.010 U	0.010 U	0.0052	
Notes:												
(1)	- Ambient Water Quality Standards and Gui											
	TOGS 1.1.1. Lowest Standard/Guidance V											
(2)	- Guidance Value											
(3)	- Calculated using a hardness of 300 ppm											
(4)	- Applies to dissolved form											
(5)	- Hardness >75 mg/L											
5.0U	- Non-detect at associated value											
NA	- Not Analyzed											
U	- Not detected. No associated reporting limi											
J	- Estimated											
NL	- Not Listed											
5.1	- Concentration exceeds Surface Water Sta											

**Table 2.10**

**Groundwater Volumes Discharged  
to North Tonawanda POTW  
Gratwick-Riverside Park Site  
North Tonawanda, New York**

<b>Month</b>	<b>Volumes (gallons)</b>	
	<b>Monthly</b>	<b>Total</b>
May 2001	2,900,000	2,900,000
June 2001	2,353,800	5,253,800
July 2001	1,488,500	6,742,300
August 2001	712,800	7,455,100
September 2001	473,100	7,928,200
October 2001	1,213,100	9,141,300
November 2001	1,281,100	10,422,400
December 2001	231,700 <sup>(1)</sup>	10,654,100
January 2002	1,383,200 <sup>(2)</sup>	12,037,300
February 2002	1,186,000	13,223,300
March 2002	233,600	13,456,900
April 2002	736,000	14,192,900
May 2002	348,200	14,541,100
June 2002	1,137,200	15,678,300
July 2002	869,300	16,547,600
August 2002	1,060,800	17,608,400
September 2002	707,000	18,315,400
October 2002	679,800	18,995,100
November 2002	489,500	19,484,700
December 2002	743,500	20,228,200
January 2003	1,150,700	21,378,900
February 2003	483,300	21,862,200
March 2003	402,300	22,264,500
April 2003	531,900	22,796,400
May 2003	655,600	23,452,000
June 2003	682,100	24,134,000
July 2003	942,000	25,076,100
August 2003	627,500	25,703,600
September 2003	349,600	26,053,200
October 2003	966,500	27,019,700
November 2003	442,200	27,461,900
December 2003	463,900	27,925,800
January 2004	443,900	28,369,700
February 2004	253,700	28,623,400
March 2004	403,700	29,027,100
April 2004	433,600	29,460,700
May 2004	377,400	29,838,100
June 2004	395,000	30,233,100
July 2004	384,300	30,617,400
August 2004	479,700	31,097,100
September 2004	413,900	31,511,000
October 2004	319,400	31,902,400
November 2004	249,200	32,151,600
December 2004	209,900	32,361,500

**Table 2.10**

**Groundwater Volumes Discharged  
to North Tonawanda POTW  
Gratwick-Riverside Park Site  
North Tonawanda, New York**

<b>Month</b>	<b>Volumes (gallons)</b>	
	<b>Monthly</b>	<b>Total</b>
January 2005	310,100	32,671,600
February 2005	301,100	32,972,700
March 2005	250,200	33,222,900
April 2005	378,400	33,601,300
May 2005	458,800	34,060,100
June 2005	455,900	34,516,000
July 2005	270,200	34,786,200
August 2005	285,100	35,071,300
September 2005	395,600	35,466,900
October 2005	333,200	35,800,100
November 2005	360,200	36,160,300
December 2005	395,300	36,555,600
January 2006	297,500	36,853,100
February 2006	508,300	37,361,400
March 2006	244,700	37,606,100
April 2006	224,400	37,830,500
May 2006	153,300	37,983,800
June 2006	262,300	38,246,100
July 2006	212,900	38,459,000
August 2006	357,500	38,816,500
September 2006	777,000	39,593,500
October 2006	254,700	39,848,200
November 2006	778,700	40,626,900
December 2006	496,600	41,123,500
January 2007	410,500	41,534,000
February 2007	494,600	42,028,600
March, April &		
May 2007	1,489,200 <sup>(3)</sup>	43,517,800
June 2007	334,300	43,852,100
July 2007	258,600	44,110,700
August 2007	239,000	44,349,700
September 2007	59,500 <sup>(4)</sup>	44,409,200
October 2007 through January 2008	50,600 <sup>(4)</sup>	44,459,800
February 2008	23,800 <sup>(4)</sup>	44,483,600
March 2008	1,238,300	45,721,900
April 2008	2,126,700	47,848,600
May 2008	1,771,100	49,619,700
June 2008	618,000	50,237,700
July 2008	1,559,200	51,796,900
August 2008	1,365,900	53,162,800
September 2008	1,998,000	55,160,800
October 2008	2,511,100	57,671,900
November 2008	1,151,600	58,823,500
December 2008	572,700	59,396,200

**Table 2.10**

**Groundwater Volumes Discharged  
to North Tonawanda POTW  
Gratwick-Riverside Park Site  
North Tonawanda, New York**

<b>Month</b>	<b>Volumes (gallons)</b>	
	<b>Monthly</b>	<b>Total</b>
January 2009	1,021,700	60,417,900
February 2009	2,661,400	63,079,300
March 2009	4,239,300	67,318,600
April 2009	1,189,900	68,508,500
May 2009	1,362,500	69,871,000
June 2009	1,035,200	70,906,200
July 2009	1,010,100	71,916,300
August 2009	1,058,000	72,974,400
September 2009	947,000	73,921,400
October 2009	690,800	74,612,200
November 2009	697,500	75,309,700
December 2009	1,100,900	76,410,600
January 2010	767,100	77,177,700
February 2010	398,600	77,576,300
March 2010	1,094,500	78,670,800
April 2010	761,000	79,431,800
May 2010	354,700	79,786,500
June 2010	170,300	79,956,800
July 2010	323,600	80,280,400
August 2010	1,292,400	81,572,800
September 2010	672,800	82,245,600
October 2010	972,800	83,218,400
November 2010	433,500	83,651,900
December 2010	483,900	84,135,800
January 2011	420,300	84,556,100
February 2011	257,000	84,813,100
March 2011	1,136,700	85,949,800
April 2011	875,300	86,825,100
May 2011	727,500	87,552,600
June 2011	489,500	88,042,100
July 2011	459,300	88,501,400
August 2011	296,900	88,798,300
September 2011	390,300	89,188,600
October 2011	414,800	89,603,400
November 2011	393,100	89,996,500
December 2011	583,300	90,579,800
January 2012	651,800	91,231,600
February 2012	276,900	91,508,500
March 2012	586,600	92,095,100
April 2012	400,600	92,495,700
May 2012	458,800	92,954,500
June 2012	369,300	93,323,800
July 2012	15,600 <sup>(5)</sup>	93,339,400
August 2012	399,400	93,738,800
September 2012	513,500	94,252,300

**Table 2.10**

**Groundwater Volumes Discharged  
to North Tonawanda POTW  
Gratwick-Riverside Park Site  
North Tonawanda, New York**

<b>Month</b>	<b>Volumes (gallons)</b>	
	<b>Monthly</b>	<b>Total</b>
October 2012	344,500	94,596,800
November 2012	336,600	94,933,400
December 2012	286,800	95,220,200
January 2013	329,800	95,550,000
February 2013	217,400	95,767,400
March 2013	260,200	96,027,600
April 2013	249,900	96,277,500
May 2013	200,500	96,478,000
June 2013	211,300	96,689,300
July 2013	245,600	96,934,900
August 2013	165,100	97,100,000
September 2013	216,500	97,316,500
October 2013	118,600	97,435,100
November 2013	203,800	97,638,900
December 2013	117,400	97,756,300
January 2014	111,700	97,868,000
February 2014 <sup>(6)</sup>	66,700	97,934,700
March 2014 <sup>(6)</sup>	5,800	97,940,500
April 2014 <sup>(6)</sup>	5,000	97,945,500
May 2014 <sup>(6)</sup>	8,600	97,954,100
June 2014 <sup>(6)</sup>	8,500	97,962,600
July 2014 <sup>(6)</sup>	15,400	97,978,000
August 2014	1,385,800	99,363,800
September 2014	869,700	100,233,500
October 2014	1,426,200	101,659,700
November 2014	638,400	102,298,100
December 2014	753,200	103,051,300
January 2015 <sup>(7)</sup>	126,600	103,177,900
February 2015 <sup>(7)</sup>	43,200	103,221,100
March 2015	2,115,700	105,336,800
April 2015	2,113,500	107,450,300
May 2015	1,939,200	109,389,500
June 2015	1,808,100	111,197,600
July 2015	1,625,600	112,823,200
August 2015	1,557,900	114,381,100
September 2015	586,800	114,967,900
October 2015	2,094,300	117,062,200
November 2015	1,153,700	118,159,900
December 2015	884,000	119,099,900
January 2016	1,293,500	120,393,400
February 2016	834,800	121,228,200
March 2016	1,589,500	122,817,700
April 2016	1,144,200	123,961,900
May 2016	601,200	124,563,100

**Table 2.10**

**Groundwater Volumes Discharged  
to North Tonawanda POTW  
Gratwick-Riverside Park Site  
North Tonawanda, New York**

<b>Month</b>	<b>Volumes (gallons)</b>	
	<b>Monthly</b>	<b>Total</b>
June 2016	(8)	124,563,100
July 2016	(8)	124,563,100
August 2016	(8)	124,563,100
September 2016	(8)	124,563,100
October 2016	(8)	124,563,100
November 2016	(8)	124,563,100
December 2016	796,500	125,359,600
January 2017	1,662,500	127,022,100
February 2017	1,549,600	128,571,700
March 2017	1,840,700	130,412,400
April 2017	1,486,100	131,898,500
May 2017	1,625,700	133,524,200
June 2017	1,355,300	134,879,500
July 2017	1,181,800	136,061,300
August 2017	1,102,300	137,163,600
September 2017	1,014,200	138,177,800
October 2017	1,469,000	139,646,800
November 2017	822,400	140,469,200
December 2017	1,045,800	141,515,000
January 2018	962,100	142,477,100
February 2018	936,100	143,413,200
March 2018	1,102,800	144,516,000
April 2018	1,063,300	145,579,300
May 2018	1,049,300	146,628,600
June 2018	867,200	147,495,800
July 2018	994,300	148,490,100
August 2018	813,200	149,303,300
September 2018	828,800	150,132,100
October 2018	1,022,700	151,154,800
November 2018	960,684	152,115,484
December 2018	986,000	153,101,484
January 2019	1,045,300	154,146,784
February 2019	951,000	155,097,784
March 2019	1,059,600	156,157,384
April 2019	1,031,825	157,189,209
May 2019	1,016,178	158,205,387
June 2019	944,848	159,150,235
July 2019	900,583	160,050,818
August 2019	1,005,082	161,055,900
September 2019	997,105	162,053,005
October 2019	1,090,791	163,143,796
November 2019	1,086,832	164,230,628
December 2019	921,808	165,152,436
January 2020	1,035,110	166,187,546
February 2020	1,153,588	167,341,134
March 2020	1,148,433	168,489,567
April 2020	1,097,696	169,587,263
May 2020	1,063,511	170,650,774
June 2020	1,677,330	172,328,104
July 2020	2,439,355	174,767,459
August 2020	2,212,693	176,980,152

Table 2.10

**Groundwater Volumes Discharged  
to North Tonawanda POTW  
Gratwick-Riverside Park Site  
North Tonawanda, New York**

<b>Month</b>	<b>Volumes (gallons)</b>	
	<b>Monthly</b>	<b>Total</b>
September 2020	1,958,133	178,938,285
October 2020	1,830,730	180,769,015
November 2020	1,326,108	182,095,123
December 2020	1,303,594	183,398,717
January 2021	2,028,667	185,427,384
February 2021	1,121,751	186,549,135
March 2021	1,291,206	187,840,341
April 2021	1,252,338	189,092,679
May 2021	1,811,369	190,904,048
June 2021	1,449,513	192,353,561
July 2021	1,590,501	193,944,062
August 2021	1,815,985	195,760,047
September 2021	1,513,162	197,273,209
October 2021	1,849,744	199,122,953
Novemeber 2021	1,727,892	200,850,845
December 2021	1,777,069	202,627,914
January 2022	1,850,983	204,478,897
February 2022	1,442,524	205,921,421
March 2022	2,255,228	208,176,649
April 2022	1,963,978	210,140,627
May 2022	1,865,060	212,005,687
June 2022	1,597,624	213,603,311
July 2022	1,743,102	215,346,413
August 2022	1,478,945	216,825,358
September 2022	1,230,612	218,055,970
October 2022	1,327,612	219,383,582
Novemeber 2022	1,017,113	220,400,695
December 2022	1,583,158	221,983,853
January 2023	1,544,617	223,528,470
February 2023	1,384,907	224,913,377
March 2023	1,657,572	226,570,949
April 2023	1,914,291	228,485,240
May 2023	2,096,630	230,581,870
Notes:		
( <sup>1</sup> ) To December 7, 2001.		
( <sup>2</sup> ) From December 8, 2001.		
( <sup>3</sup> ) Plotted as 496,400 gallons on Figure 2.18 for each of March, April, and May 2007.		
( <sup>4</sup> ) Flow Meter malfunctioned due to tar-like material buildup inside meter. Meter was cleaned on March 14, 2008. Volumes not plotted on Figure 2.18 as volumes are not representative of actual volume removed.		
( <sup>5</sup> ) Flow low due to pump failure. Two pumps replaced.		
( <sup>6</sup> ) Flow meter malfunctioning. Cleaned and repaired on August 8, 2014. Volumes not plotted on Figure 2.18.		
( <sup>7</sup> ) PS#1, PS#2 and PS#3 not operational as of January 28, 2015. PS#1 operational on March 2, 2015. PS#2 operational on March 17, 2015.		
( <sup>8</sup> ) Flow meter malfunctioning.		

# Appendices

# **Appendix A**

## **City of North Tonawanda Industrial Wastewater Discharge Permit**

**CITY OF NORTH TONAWANDA  
INDUSTRIAL WASTEWATER DISCHARGE PERMIT**

---

**Permit Number: 2628011**

In accordance with the provisions of the Clean Water Act as amended, all terms and conditions set forth in this permit, the City of North Tonawanda Local Sewer Use Ordinance and any applicable Federal, State or local laws or regulations, authorization is hereby granted to:

City of North Tonawanda

830 River Road

North Tonawanda, New York 14120

Site: Gratwick Riverside Park

River Road

North Tonawanda, New York 14120

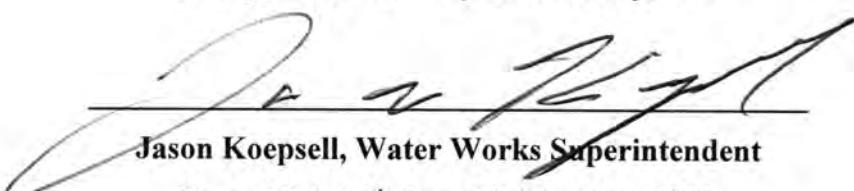
Classified by S.I.C. Number(s): N/A

for the discharge of remedial action ground water into the City of North Tonawanda Sewerage System.

This permit is granted in accordance with an application filed on 05/01/96 in the offices of the Wastewater Treatment Plant Superintendent located at 830 River Road, and in conformity with specifications and other required data submitted in support of the above named application, all of which are filed with and considered part of this permit. This permit is also granted in accordance with discharge limitations and requirements, monitoring and reporting requirements, and all other conditions set forth in Parts I and II hereof.

**Revised and effective this 19th day of September, 2023**

**To expire the 28th day of February, 2025**

  
**Jason Koepsell, Water Works Superintendent**

**Signed this 19<sup>th</sup> day of September, 2023**

**PART I. SPECIFIC CONDITIONS****A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS**

During the period beginning the effective date of this permit and lasting until the expiration date, discharge from the permitted facility outfall(s) shall be limited and monitored by the permittee as specified below (Refer to attached map for sampling and monitoring sites).

Sample Point	Parameter	Discharge Limitations mg/l except pH Daily Max.	Sampling Period	Sampling Type
001	Total Flow		1 Sampling Day Monthly	continuous
	pH	Monitor Only	1 Sampling Day Semi-annual	Grab & 24 hr. comp
	Vinyl Chloride	Monitor Only	1 Sampling Day semi-annual	grab
	Acetone	Monitor Only	1 Sampling Day semi-annual	grab
	Methylene Chloride	Monitor Only	1 Sampling Day semi-annual	grab
	1,1,1-Trichloroethane	Monitor Only	1 Sampling Day semi-annual	grab
	1,1-Dichloroethane	Monitor Only	1 Sampling Day semi-annual	grab
	1,2-Dichloroethane (total)	Monitor Only	1 Sampling Day semi-annual	grab
	2-Butanone	Monitor Only	1 Sampling Day semi-annual	grab
	Trichlorethene	Monitor Only	1 Sampling Day semi-annual	grab
	Benzene	Monitor Only	1 Sampling Day semi-annual	grab

Sample Point	Parameter	Discharge Limitations mg/l except pH <b>Daily Max. Monthly Avg.</b>	Sampling Period	Sampling Type
001	Tetrachloroethene	Monitor Only	1 Sampling Day semi-annual	grab
	Toluene	Monitor Only	1 Sampling Day semi-annual	grab
	Chlorobenzene	Monitor Only	1 Sampling Day semi-annual	grab
	Ethylbenzene	Monitor Only	1 Sampling Day semi-annual	grab
	Styrene	Monitor Only	1 Sampling Day semi-annual	grab
	Xylenes (total)	Monitor Only	1 Sampling Day semi-annual	grab
	Phenol (4AAP)	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	trans-1,2-Dichloroethene	Monitor Only	1 Sampling Day semi-annual	grab
	1,4-Dichlorobenzene	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	1,2-Dichlorobenzene	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	2-Methylephenol	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	4-Methylephenol	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	2,4-Dimethylphenol	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	Di-n-octylphthalate	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	Naphthalene	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	Cyanide	Monitor Only	1 Sampling Day semi-annual	grab
	NH3	Monitor Only	1 Sampling Day semi-annual	grab
	Chloride	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
001	Nitrate	Monitor Only	1 Sampling Day semi-annual	24 hr. comp

Sample Point	Parameter	Discharge Limitations mg/l except pH <b>Daily Max. Monthly Avg.</b>	Sampling Period	Sampling Type
	Phosphorous	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	Sulfate	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	Sulfide	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	Ammonia	Monitor Only	1 Sampling Day semi-annual	24 hr. comp
	Mercury EPA 245.1	Monitor Only	1 Sampling Day semi-annual	24 hr. comp

\*/- See Special requirements page for sub-note requirements.

---

**PART I.     SPECIFIC CONDITIONS**  
**DISCHARGE MONITORING AND REPORTING REQUIREMENTS**

During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported by the permittee no later than the days specified below.

Sample Point	Parameter	Initial Monitoring Report	Subsequent Monitoring Reports
001	Vinyl Chloride	January 31, 2007	Semi-annual for all
	Acetone	January 31, 2007	
	Carbon Disulfide	January 31, 2007	
	1,1-Dichloroethene	January 31, 2007	
	1,1-Dichloroethane	January 31, 2007	
	1,2-Dichloroethane (total)	January 31, 2007	
	2-Butanone	January 31, 2007	
	Trichlorethene	January 31, 2007	
	Benzene	January 31, 2007	
	Tetrachloroethene	January 31, 2007	
	Toluene	January 31, 2007	
	Chlorobenzene	January 31, 2007	
	Ethylbenzene	January 31, 2007	
	Styrene	January 31, 2007	
	Xylenes (total)	January 31, 2007	
001	Phenol	January 31, 2007	Semi-annual for all

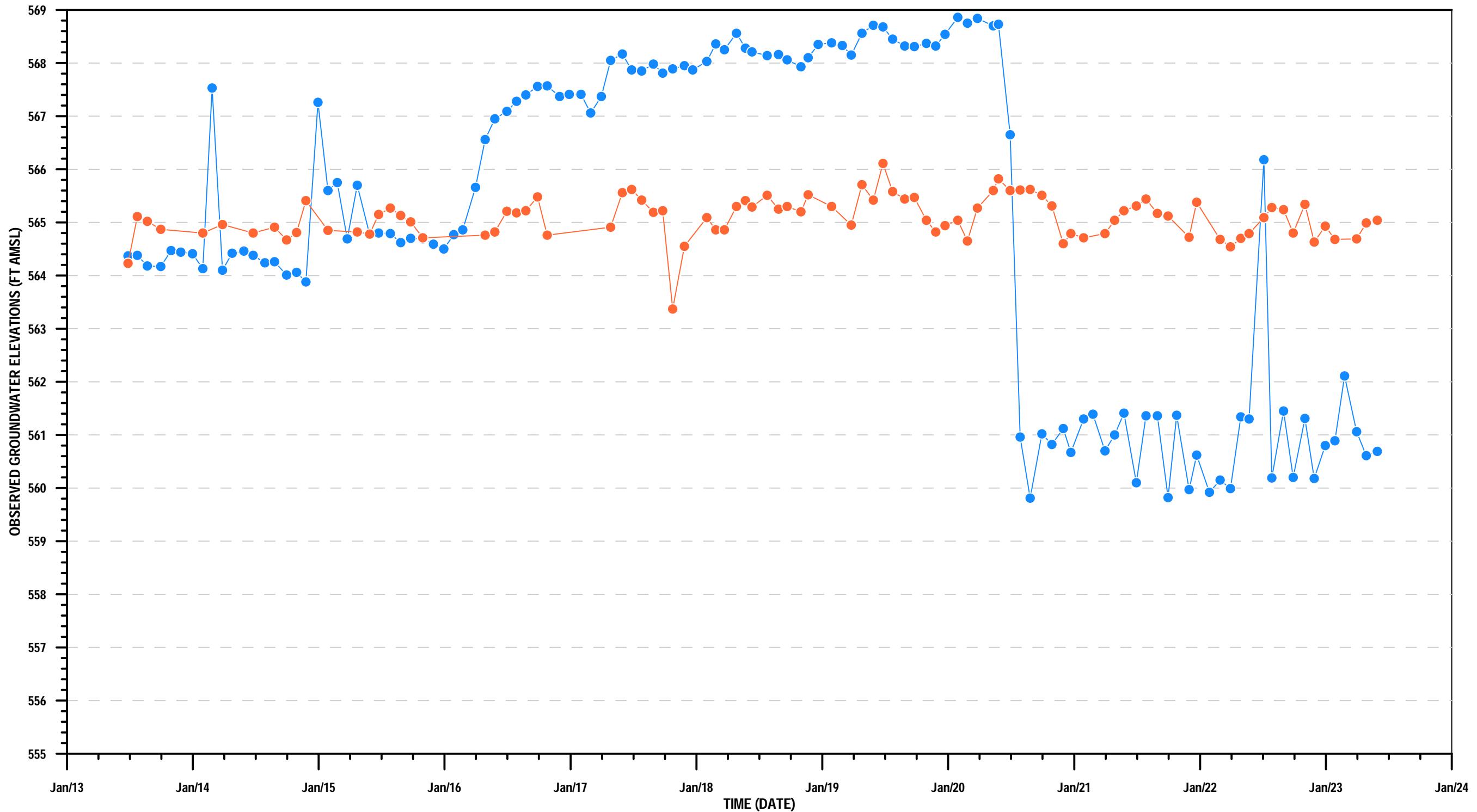
Sample Point	Parameter	Initial Monitoring Report	Subsequent Monitoring Reports
	1,3-Dichlorobenzene	January 31, 2007	
	1,4-Dichlorobenzene	January 31, 2007	
	1,2-Dichlorobenzene	January 31, 2007	
	2-Methylephenol	January 31, 2007	
	4-Methylephenol	January 31, 2007	
	2,4-Dimethylphenol	January 31, 2007	
	1,2,4-Trichlorobenzene	January 31, 2007	
	Naphthalene	January 31, 2007	
	2-Methylnaphthalene	January 31, 2007	
	n-Nitrosodidiphenylamine	January 31, 2007	
	Di-n-butylphthalate	January 31, 2007	

**PART I. SPECIFIC CONDITIONS****C. SPECIAL REQUIREMENTS**

- 1) This permit is written for a duration of three (3) years. Upon renewal of this permit, all parameters will be re-evaluated to develop a parameter list based on chemical concentrations present in the extracted groundwater.
- 2) Frequency of monitoring is to be re-evaluated after each year. Sampling to be done semi-annual (Spring – Fall).
- 3) All monitoring reports (initial and subsequent), are to be received by the Superintendent, no later than thirty (30) days after receipt of validated data.
- 4) It is required that the Permittee have a Site Operations Manual available at all times. All emergency phone numbers must be listed in an appropriate place for easy access by operations personnel. All pumping operations shall be accomplished under no-bypass conditions. The Permittee is required to cease all pumping operations upon verbal request of the North Tonawanda Water/Wastewater Superintendent or his designee. Pumping operations shall not recommence until approval by the North Tonawanda Water/Wastewater Superintendent or his designee.
- 5) Analysts are required to use GC/MS method detection limits for most organics (if GC/MS is appropriate); GC/ECD for PCB's/Pesticides and GF method detection limits for metals (where GF is appropriate), as contained in attachment 5 of the NYSDEC TOGs 1.3.8 – New Discharges to Publicly Owned Treatment Works – dated 10/26/94.

# **Appendix B**

## **Hydrographs**



#### LEGEND

- MH2
- River North

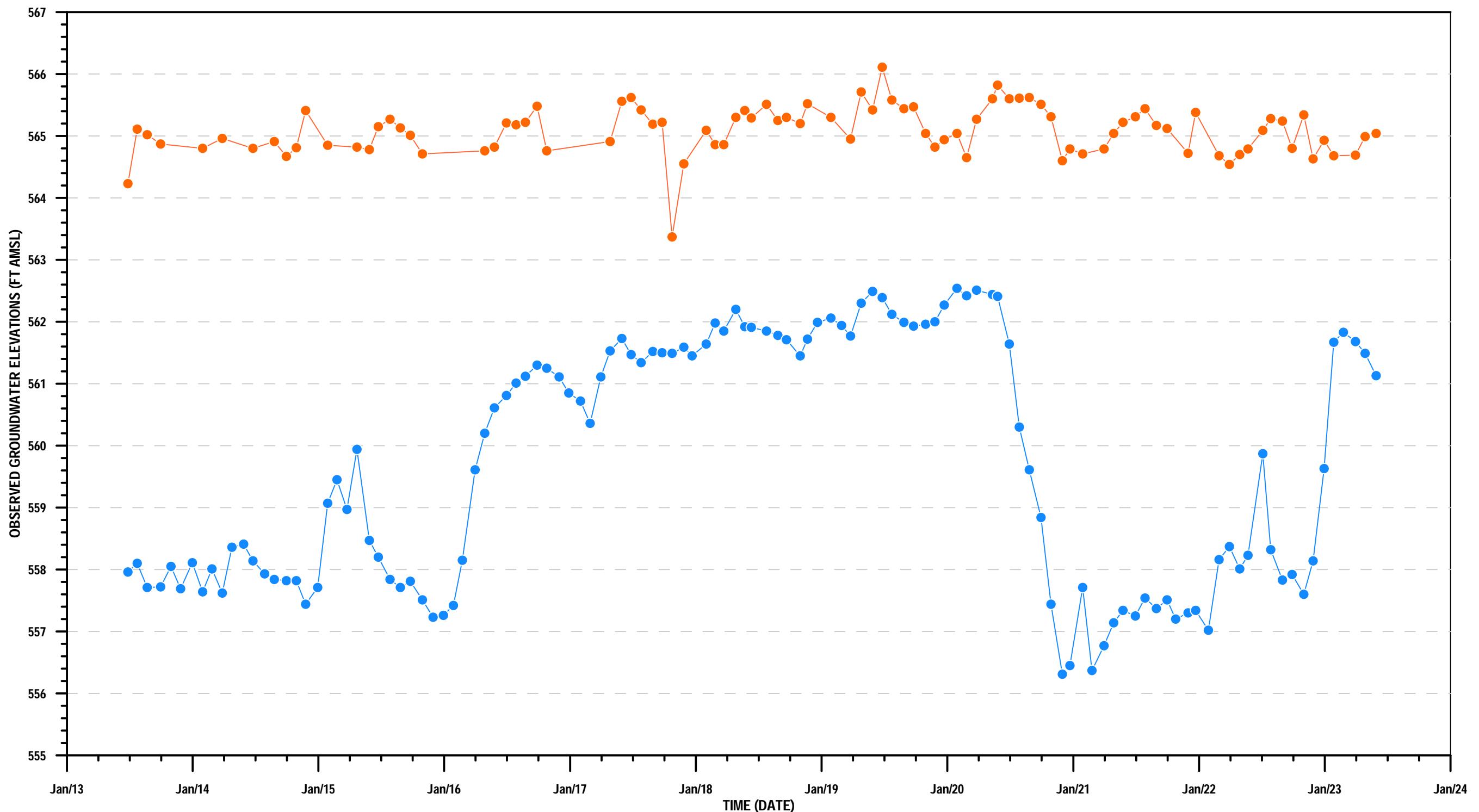
Gratwick Riverside Park  
North Tonawanda, New York



OBSERVED GROUNDWATER ELEVATION  
VS TIME AT MH2 AND RIVER NORTH

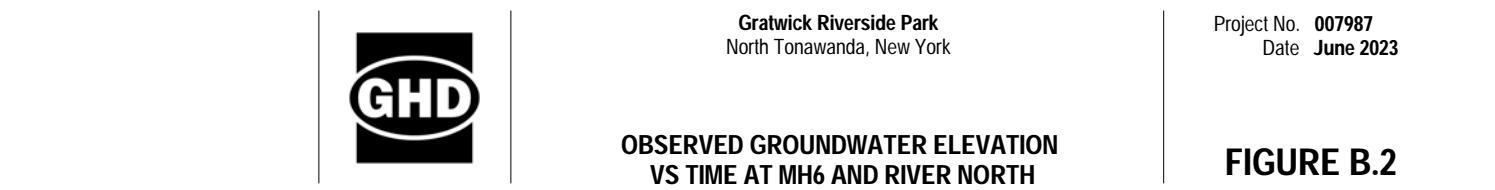
Project No. 007987  
Date June 2023

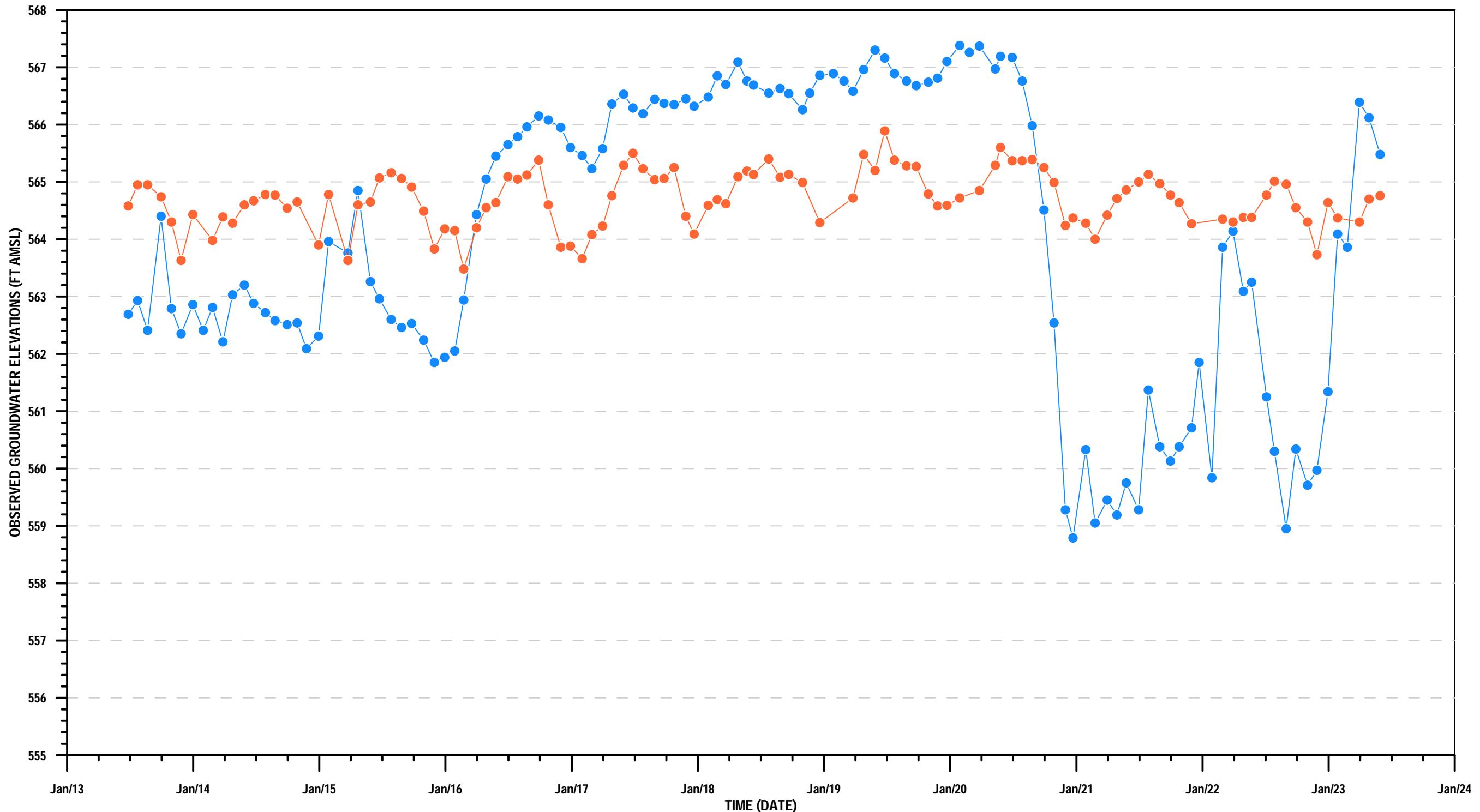
FIGURE B.1



#### LEGEND

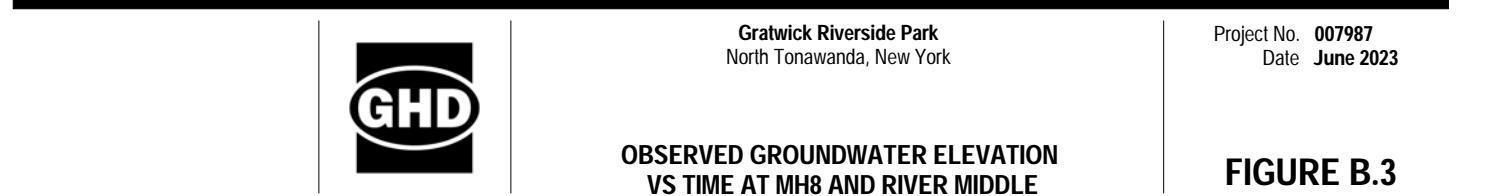
- MH6
- River North

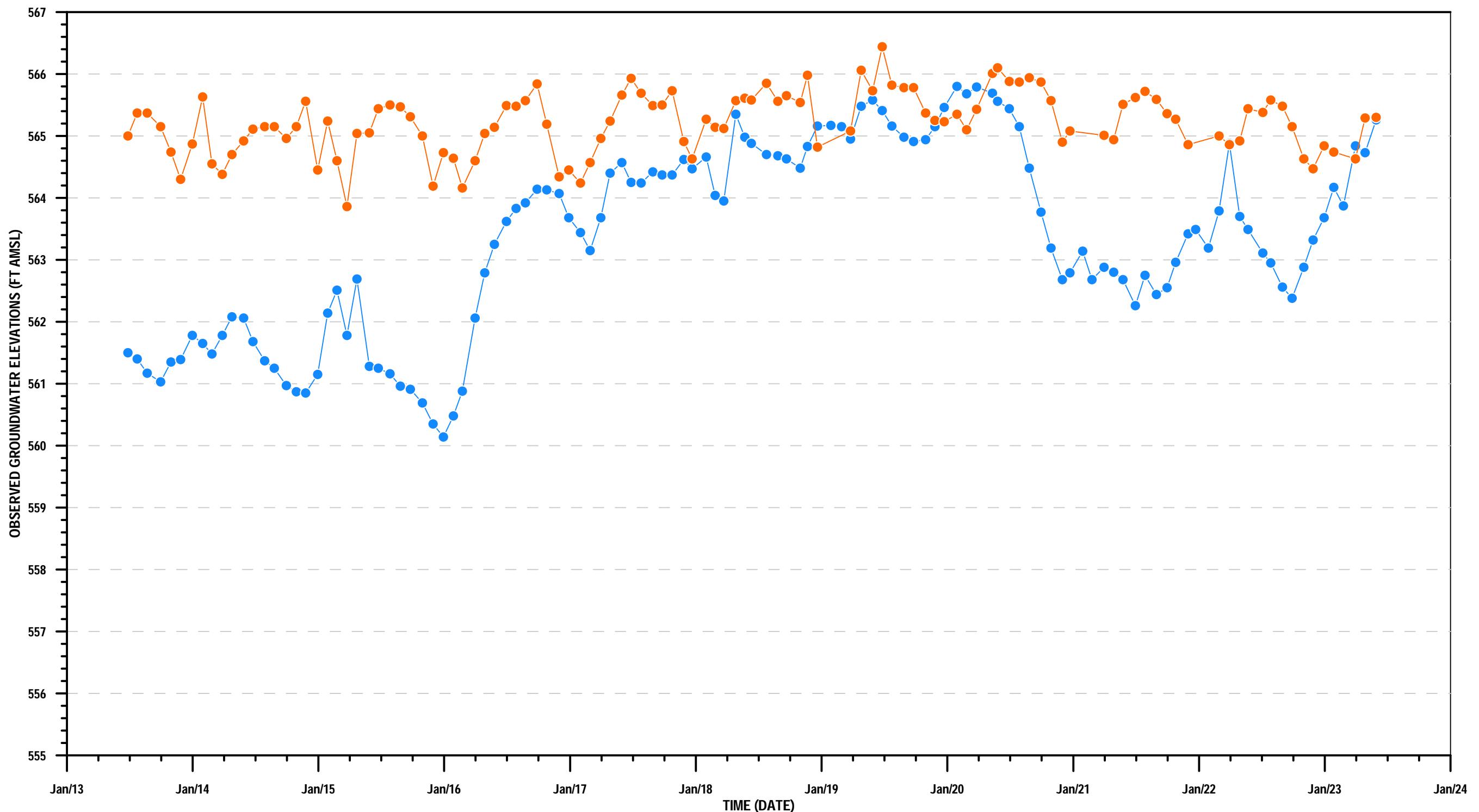




LEGEND

- MH8
- River Middle





LEGEND

- MH12
- River South

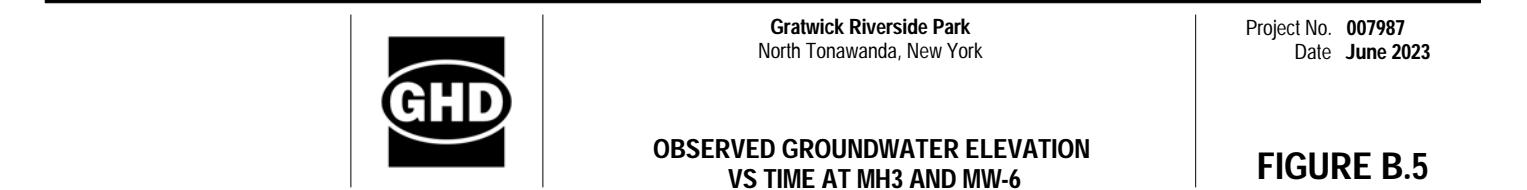
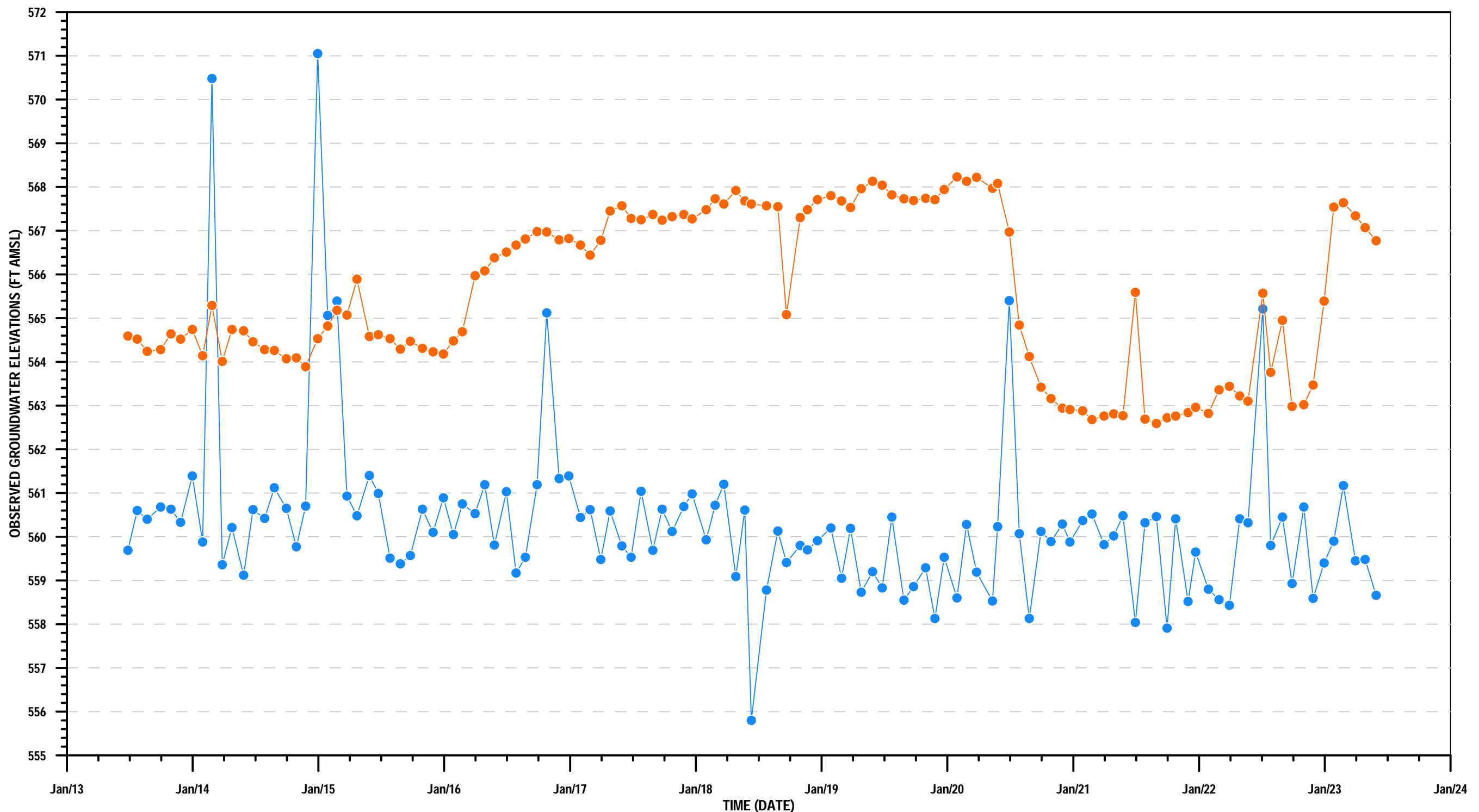
Gratwick Riverside Park  
North Tonawanda, New York

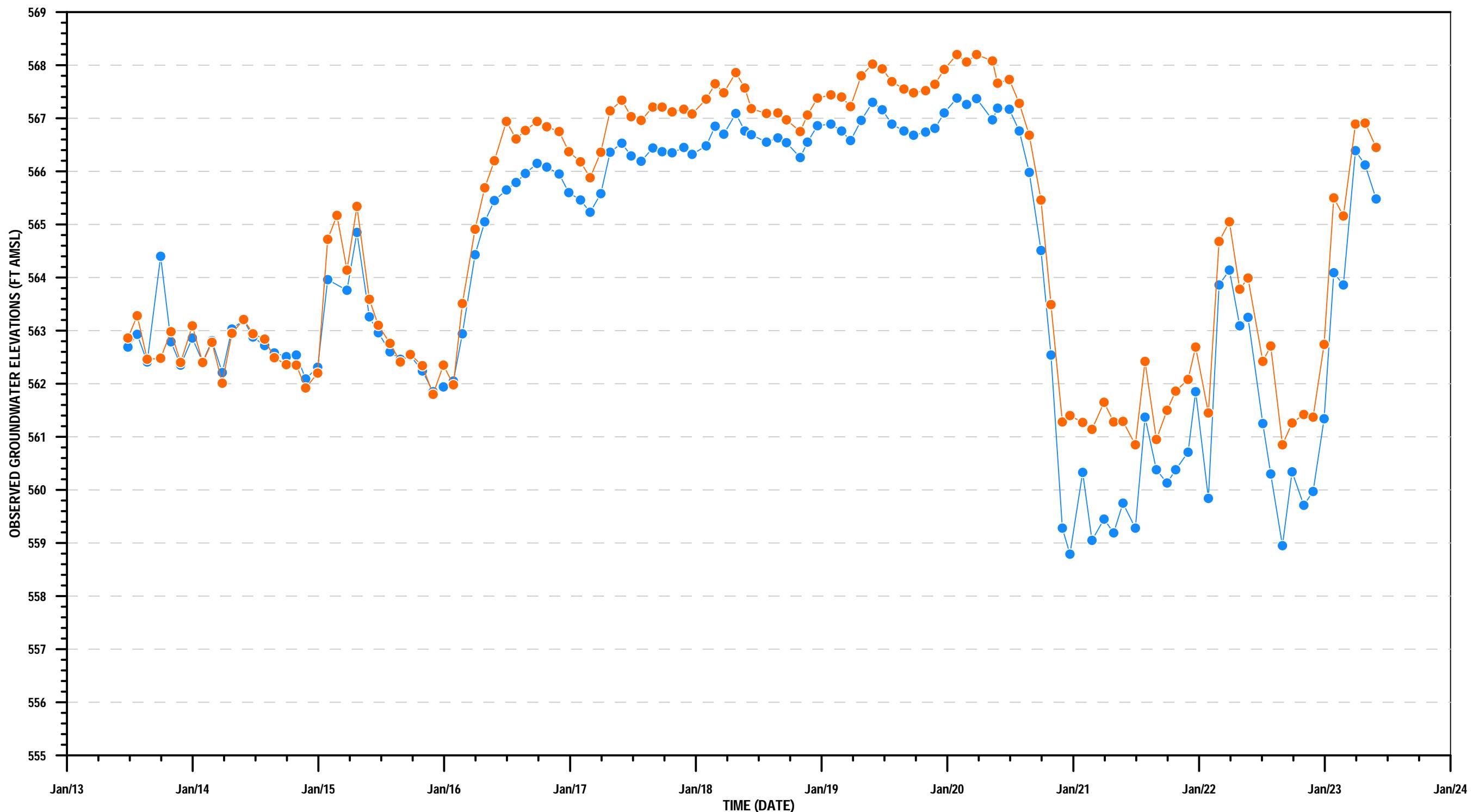
Project No. 007987  
Date June 2023



OBSERVED GROUNDWATER ELEVATION  
VS TIME AT MH12 AND RIVER SOUTH

**FIGURE B.4**





#### LEGEND

—●— MH8

—●— MW 7

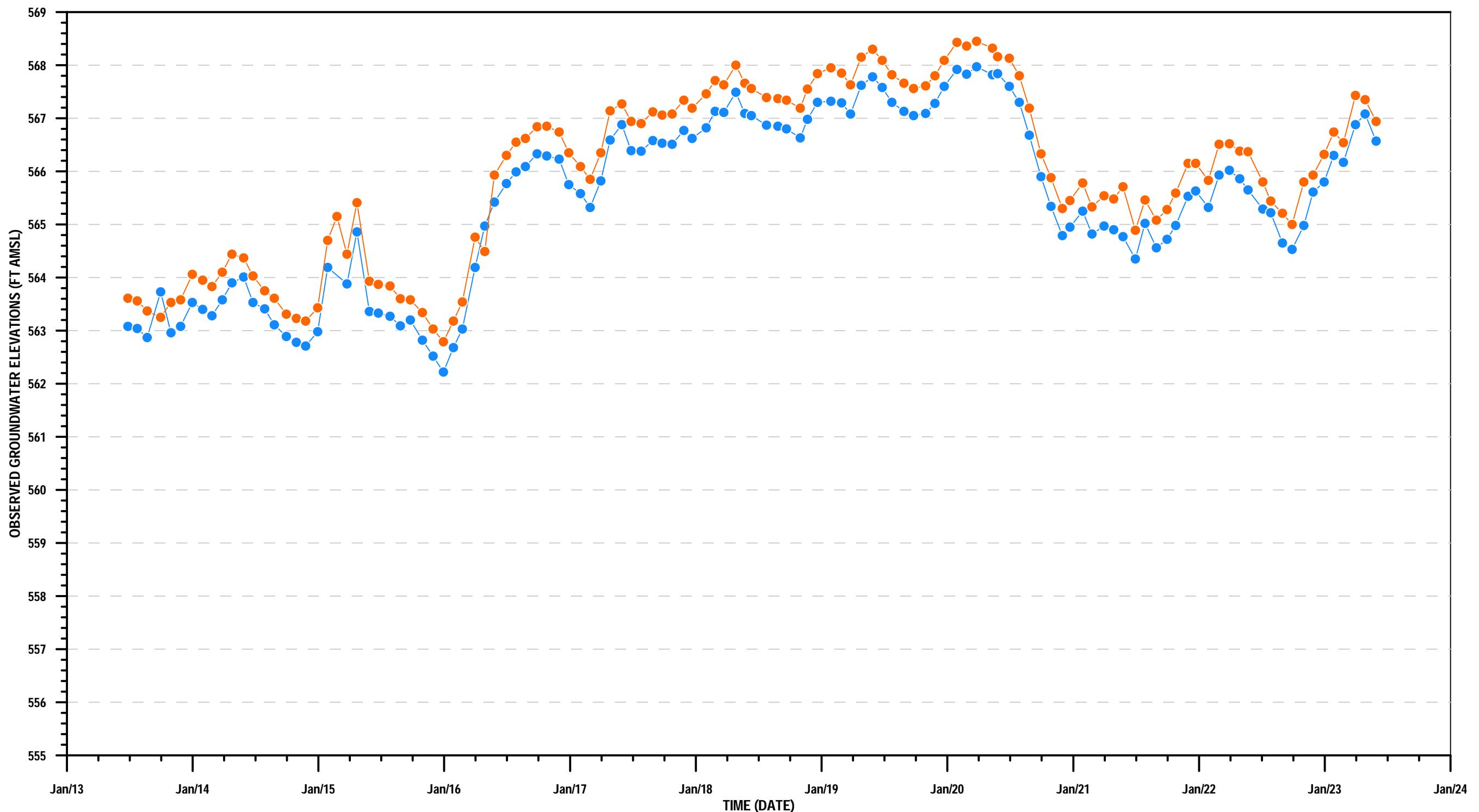
Gratwick Riverside Park  
North Tonawanda, New York

Project No. 007987  
Date June 2023



OBSERVED GROUNDWATER ELEVATION  
VS TIME AT MH8 AND MW-7

FIGURE B.6



LEGEND

—●— MH11

—●— MW 8

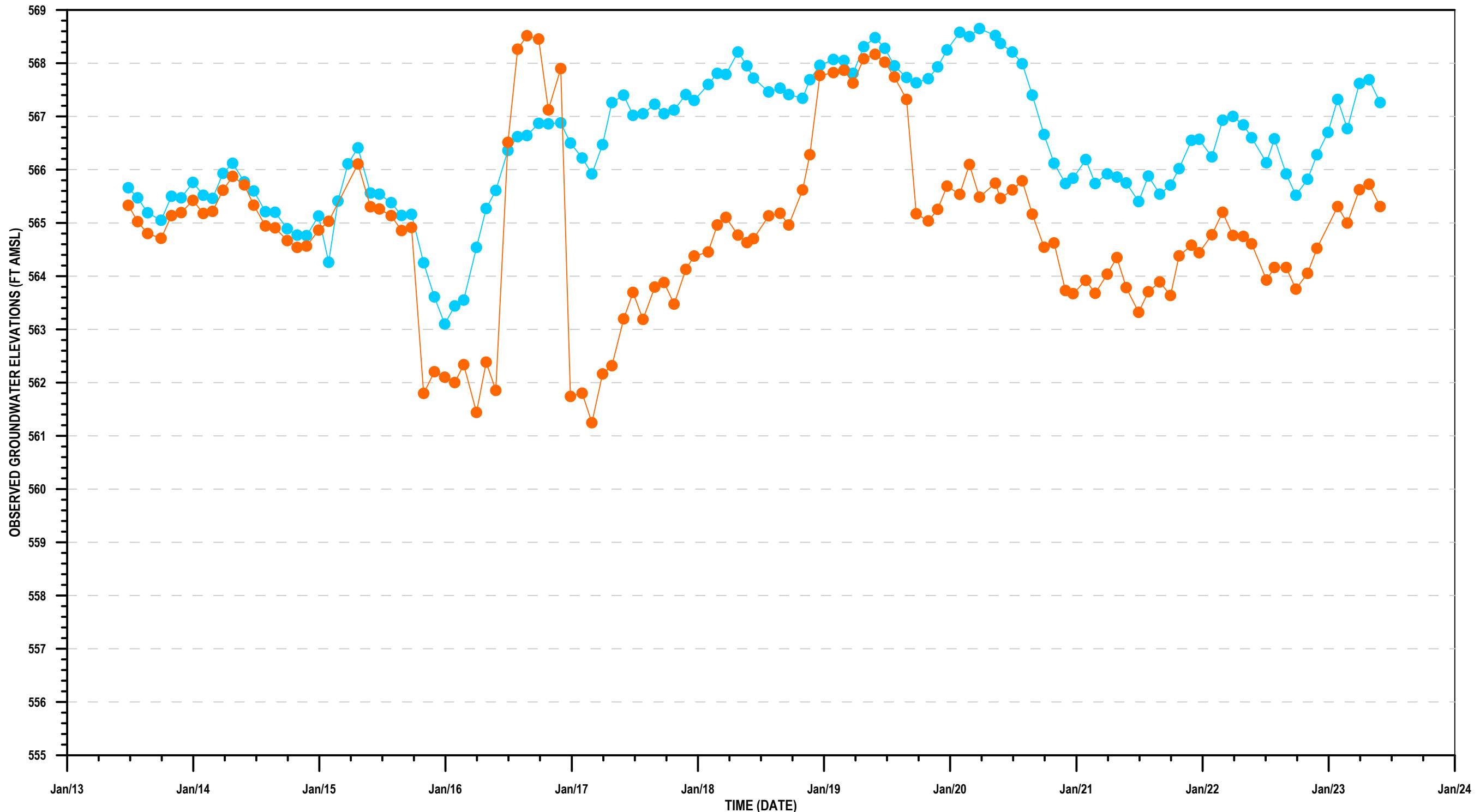
Gratwick Riverside Park  
North Tonawanda, New York

Project No. 007987  
Date June 2023



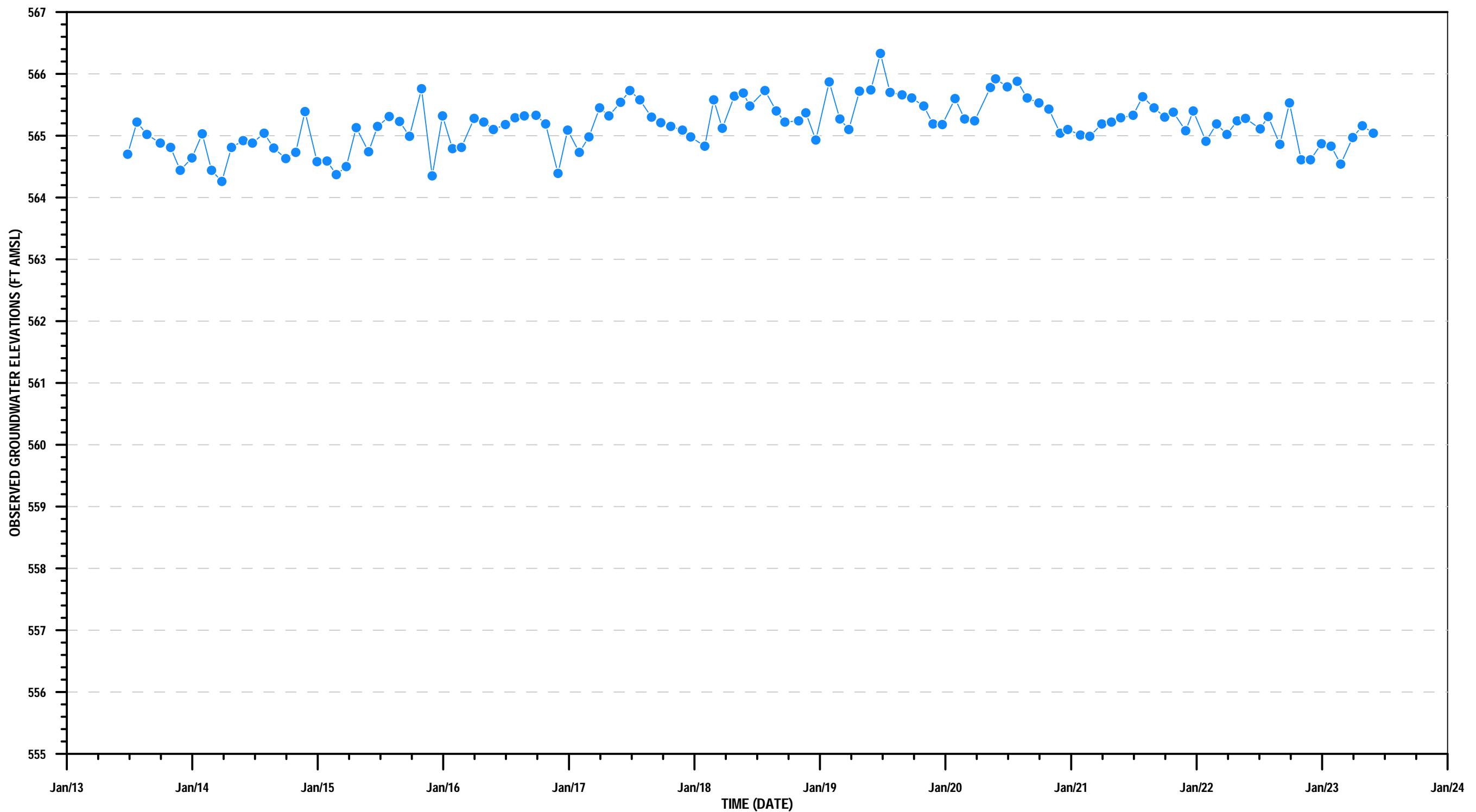
OBSERVED GROUNDWATER ELEVATION  
VS TIME AT MH11 AND MW-8

FIGURE B.7



NOTE: PLOTTED VALUES FOR MH14 AND MH15 ARE A WEIGHTED AVERAGE, WEIGHTED 2/3 AND 1/3, RESPECTIVELY.





#### LEGEND

● OGC 1

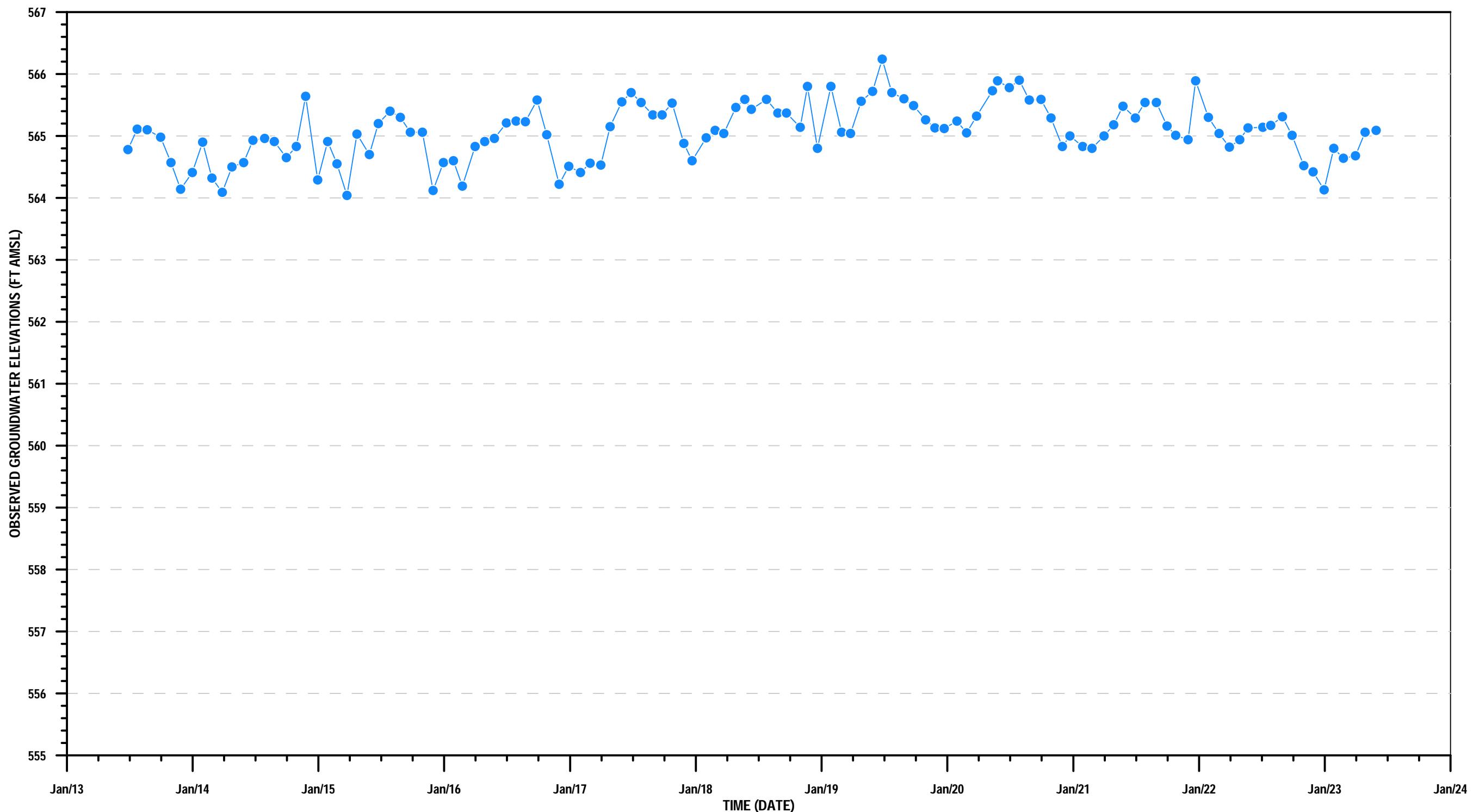
Gratwick Riverside Park  
North Tonawanda, New York

Project No. 007987  
Date June 2023



OBSERVED GROUNDWATER ELEVATION  
VS TIME AT OGC-1

FIGURE B.9



#### LEGEND

● OGC 5

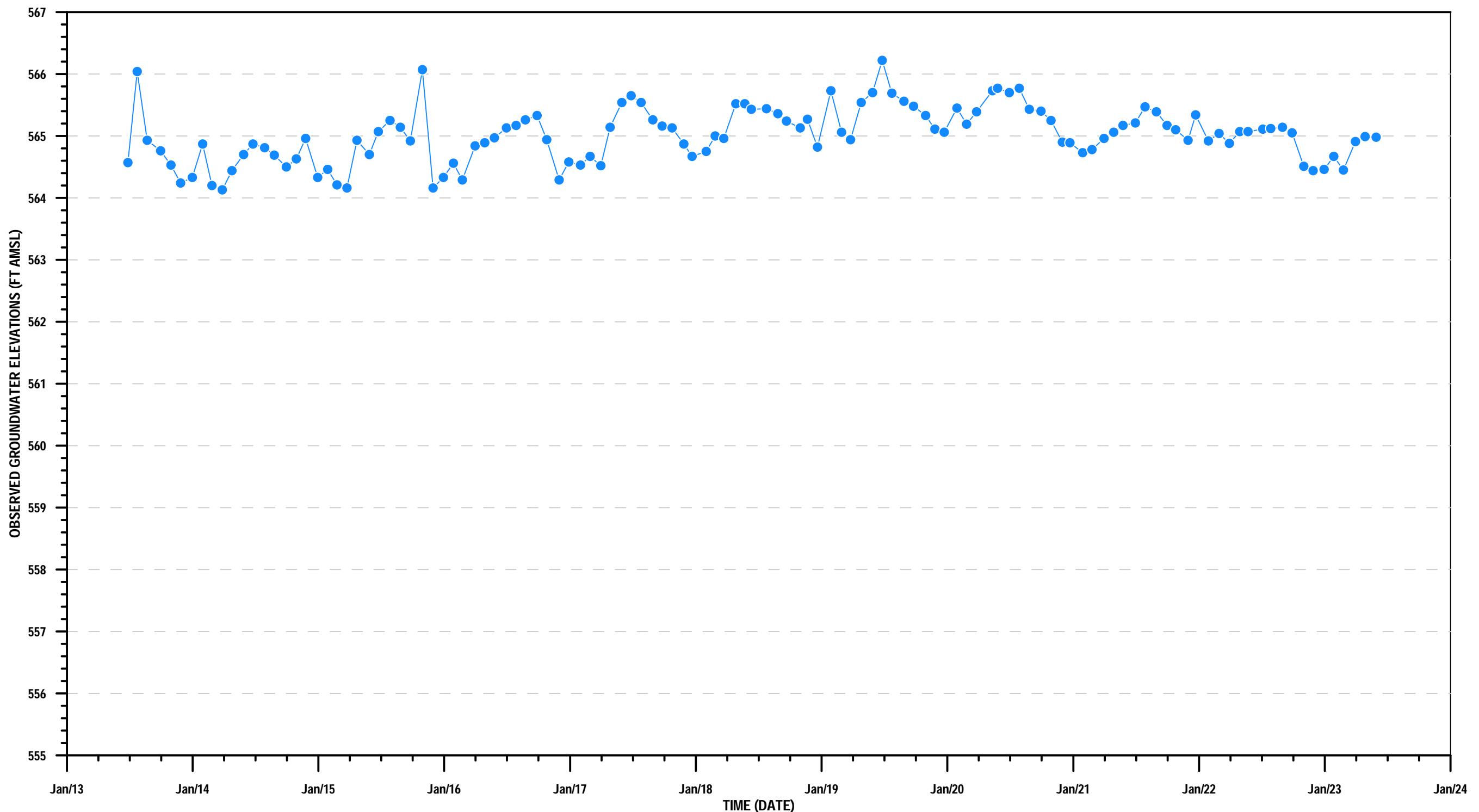
Gatwick Riverside Park  
North Tonawanda, New York

Project No. 007987  
Date June 2023



OBSERVED GROUNDWATER ELEVATION  
VS TIME AT OGC-5

FIGURE B.10



#### LEGEND

● OGC 6

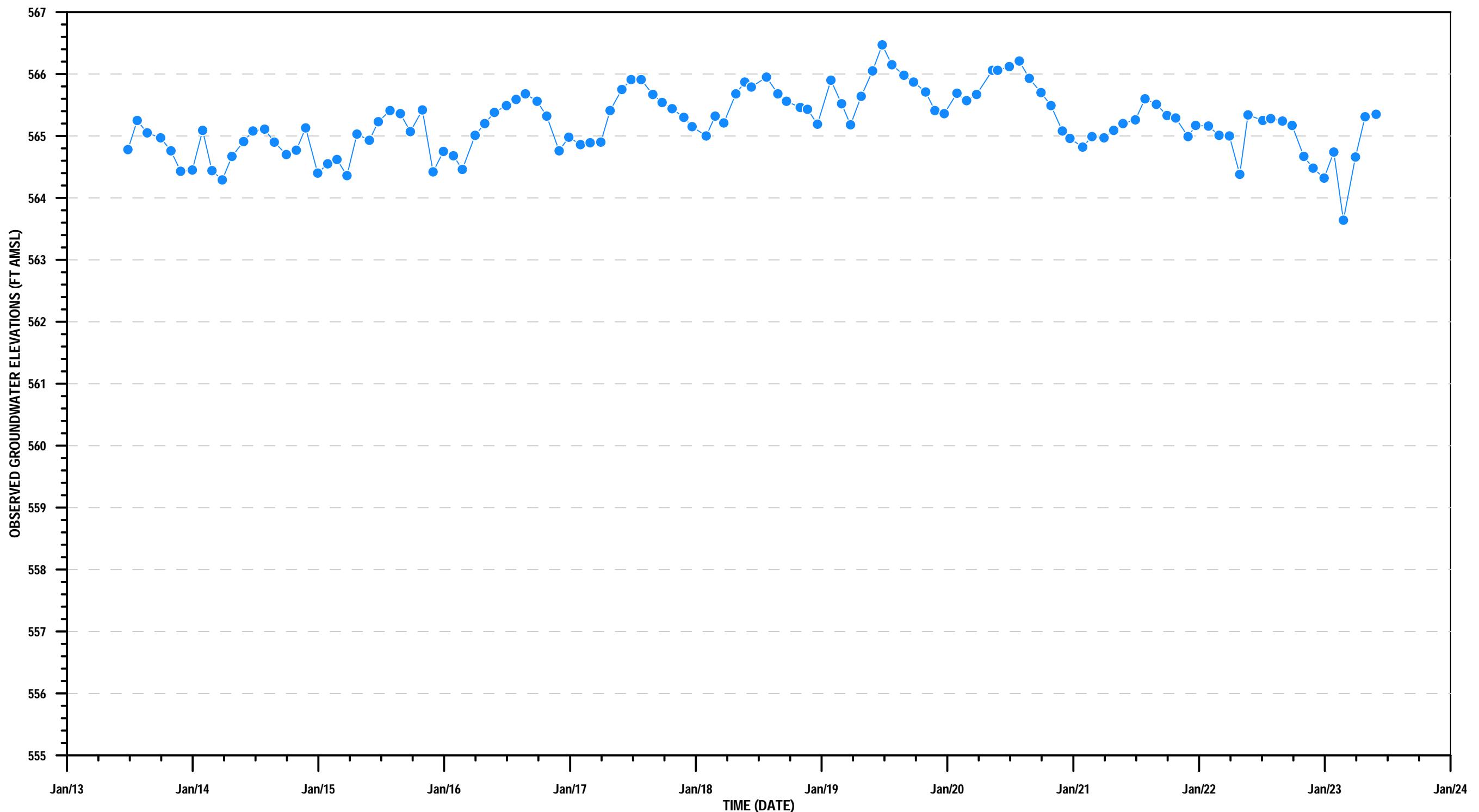
Gratwick Riverside Park  
North Tonawanda, New York

Project No. 007987  
Date June 2023



OBSERVED GROUNDWATER ELEVATION  
VS TIME AT OGC-6

FIGURE B.11



#### LEGEND

● OGC 2

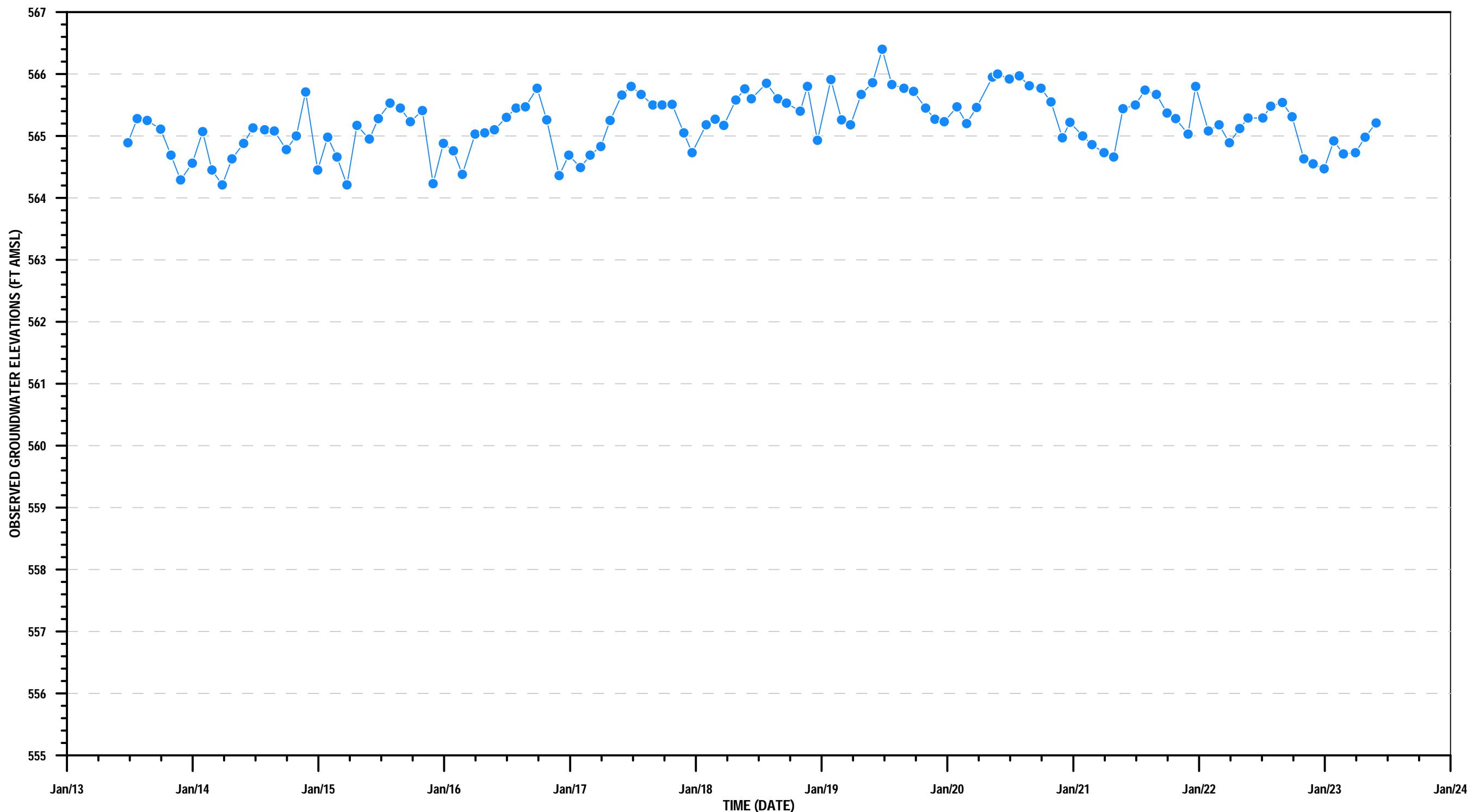
Gratwick Riverside Park  
North Tonawanda, New York

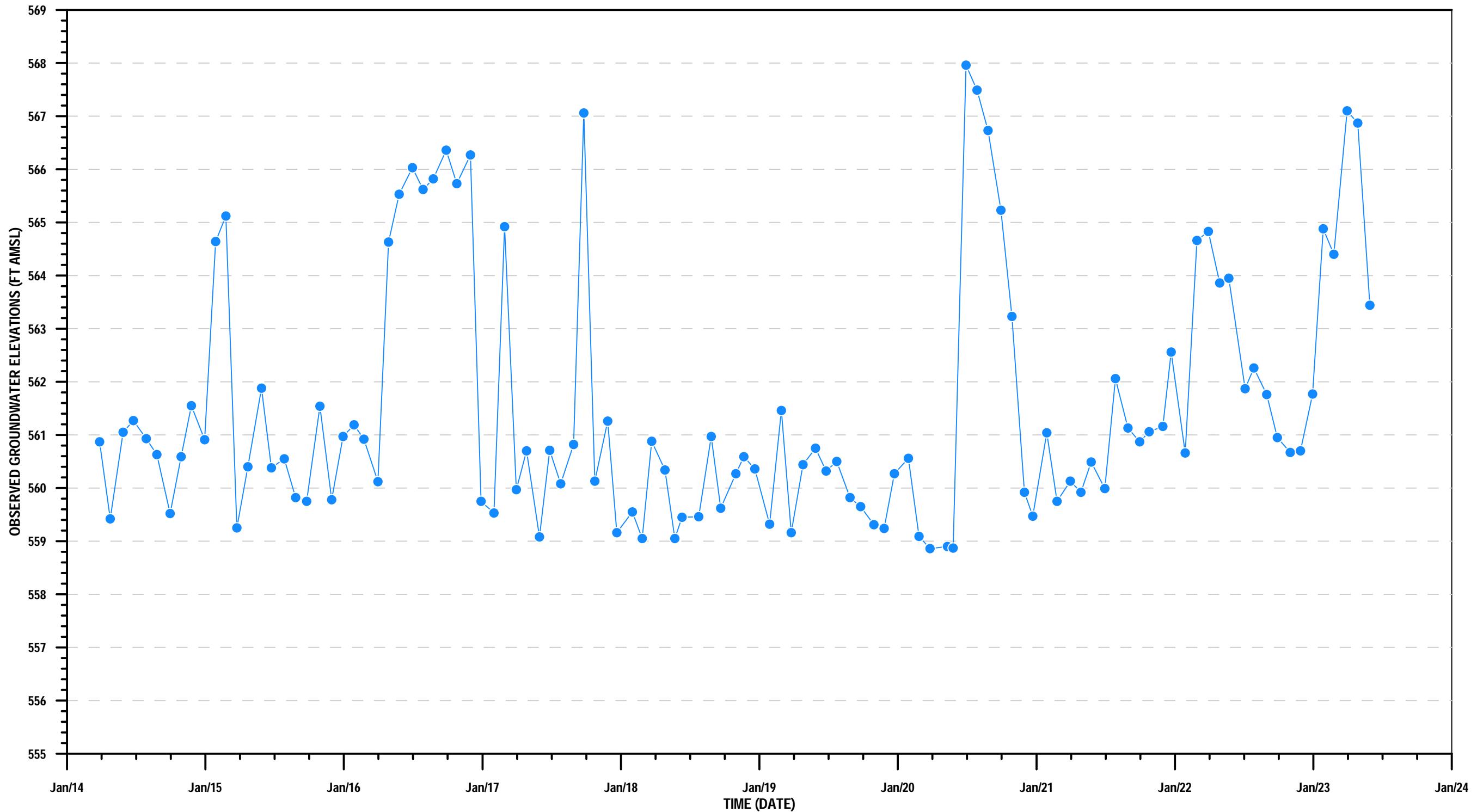
Project No. 007987  
Date June 2023



OBSERVED GROUNDWATER ELEVATION  
VS TIME AT OGC-2

FIGURE B.12





#### LEGEND

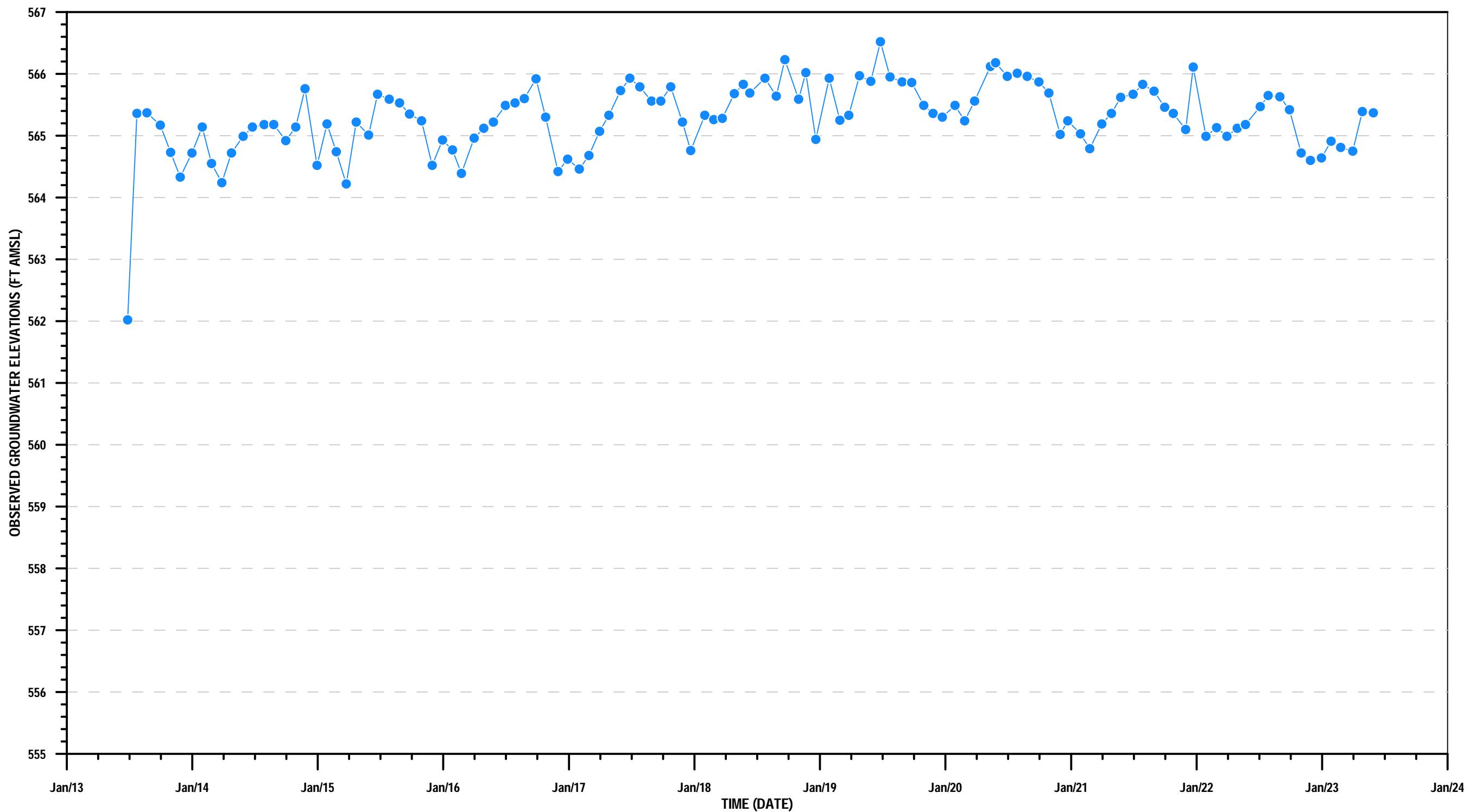
—●— MH9

Gatwick Riverside Park  
North Tonawanda, New York

Project No. 007987  
Date June 2023

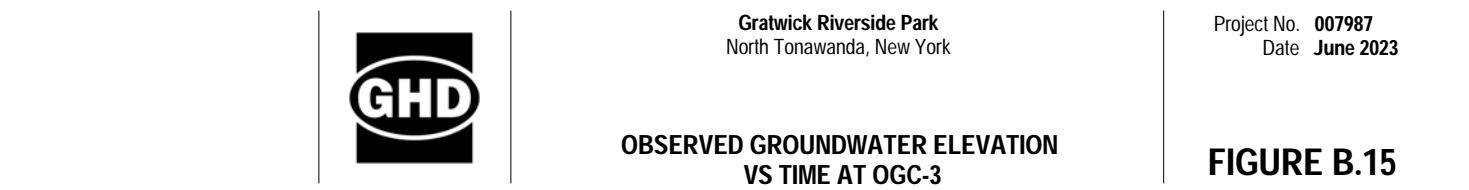
OBSERVED GROUNDWATER ELEVATION  
VS TIME AT MH9

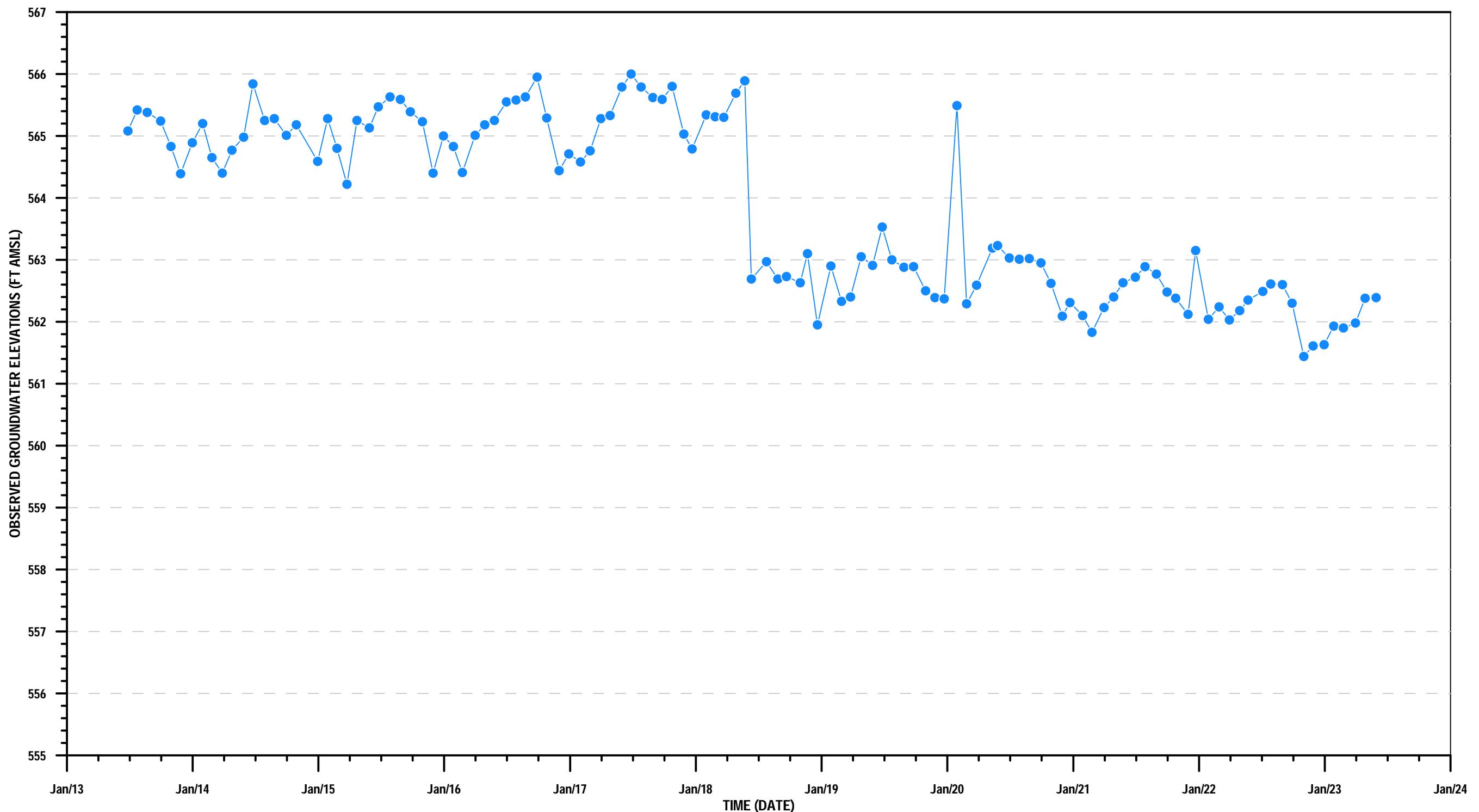
FIGURE B.14



#### LEGEND

● OGC 3





LEGEND

● OGC 8

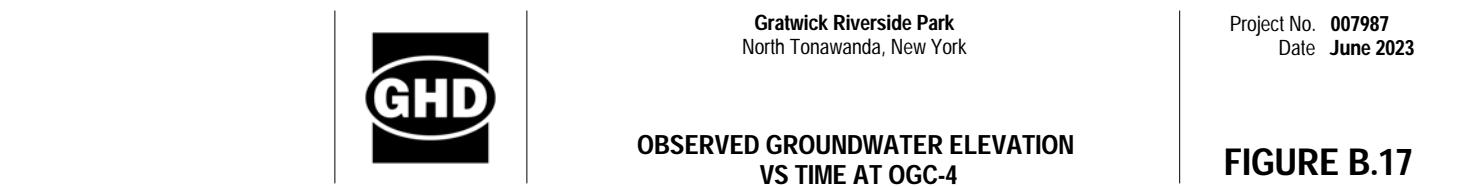
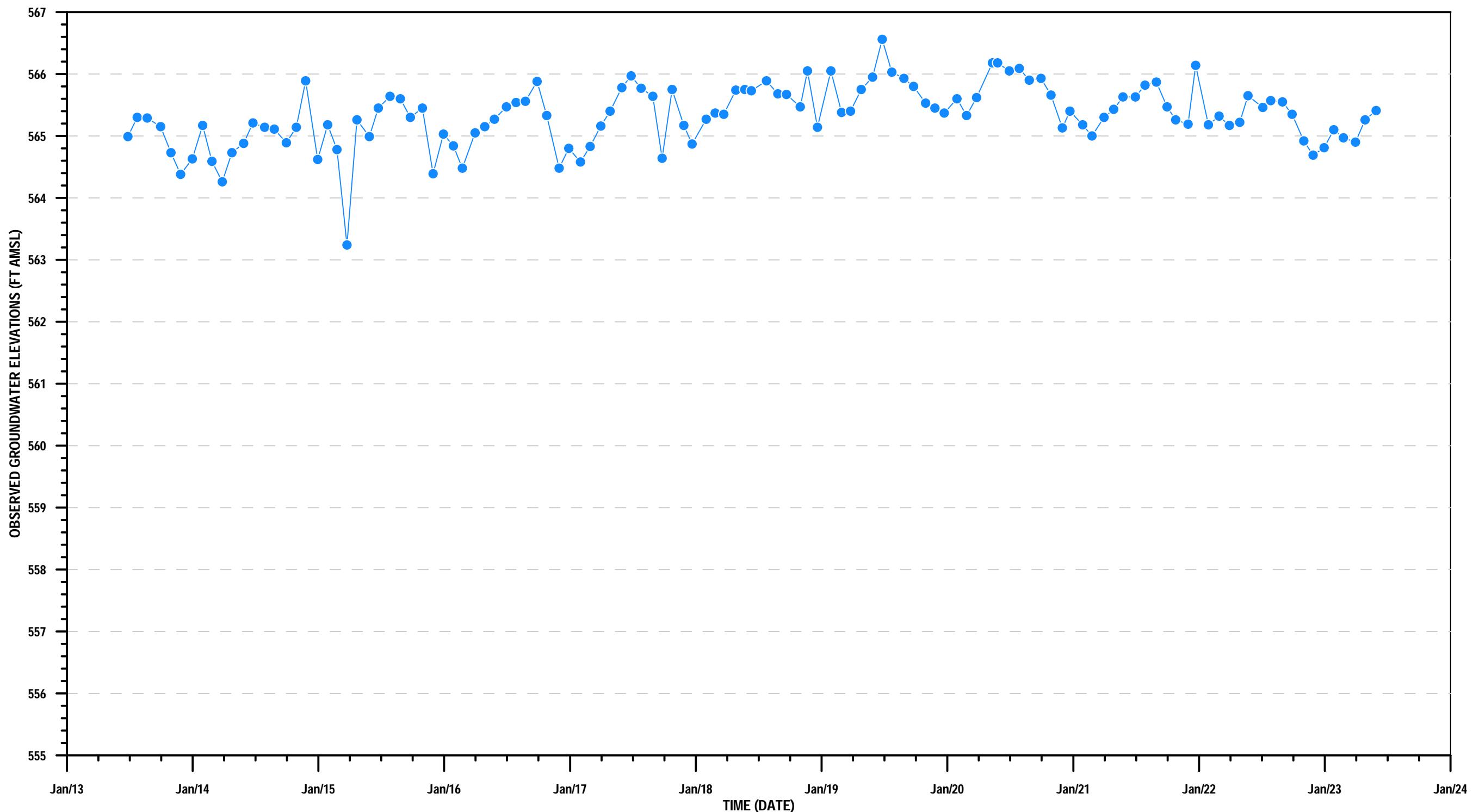


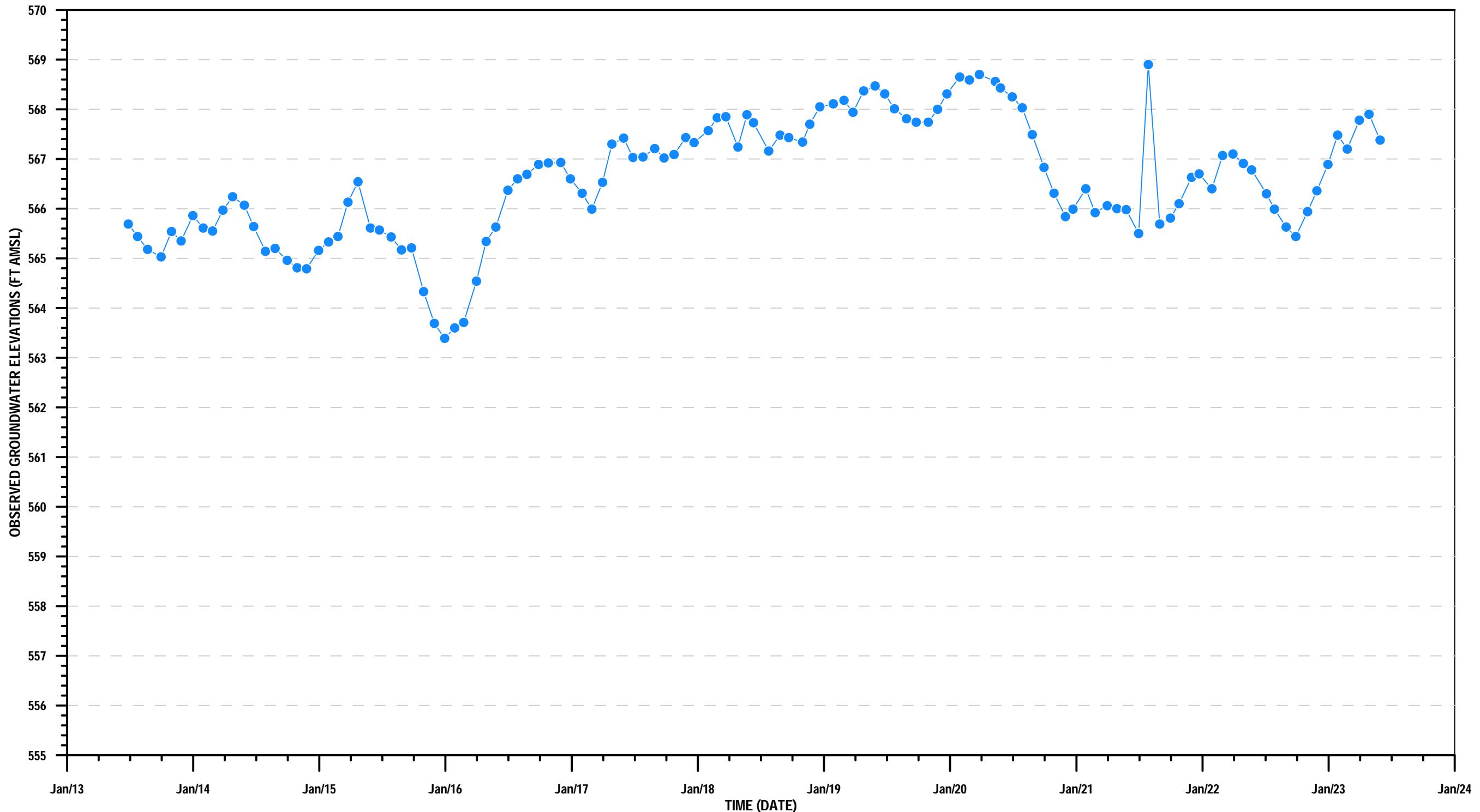
Gratwick Riverside Park  
North Tonawanda, New York

Project No. 007987  
Date June 2023

OBSERVED GROUNDWATER ELEVATION  
VS TIME AT OGC-8

FIGURE B.16





LEGEND

—●— MH16

Gatwick Riverside Park  
North Tonawanda, New York

Project No. 007987  
Date June 2023

OBSERVED GROUNDWATER ELEVATION  
VS TIME AT MH16

FIGURE B.18

# **Appendix C**

## **Purge Logs**

## GRATWICK RIVERSIDE PARK

## MW-6

Date: 4/28/2023 Job #: 7987  
 Crew: KM/JK  
 Well Condition: Good  
 Well Depth: 2" 0-28.33  
 Initial Water Level: 8.32

$$\text{Volume Calculation: } 28.33 - 8.32 = 20.01 \times .16 = 3.2 \text{ Gal}$$

## Purge Record

Time	Volume	pH	Cond.	Temp.	Quality
11:48	3.2	11.44	2.10	11.61	Clear
11:57	6.4	11.47	2.13	11.65	Clear
12:04	9.6	11.64	2.23	11.45	Clear

Purge Method: Dedicated teflon bailer  
 Initial Water Quality: Clear and colorless  
 Final Water Quality: Clear and colorless  
 Final Water Level: 8.55

## SAMPLE RECORD

Date: 4/28/2023 Volume: 3x40mL 2x250mL  
 Time: 12:10 Analysis: VOC's/SVOC's  
 Crew: KM/JK Chain of Custody #: 60070  
 Method: Ded. Teflon Bailer Sample Type: Water  
 Sample ID: WG-7987-042823-KM-007  
 Water Quality: Clear colorless Water Lever Tape #: \_\_\_\_\_  
 pH: 11.63 Horiba: NFO 9029  
 Conductivity: 2.22  
 Temperature: 11.65

Comments: \_\_\_\_\_  
 \_\_\_\_\_

Signature M. L.

## GRATWICK RIVERSIDE PARK

## MW-6

Date: 6/16/2023 Job #: 7987  
 Crew: K. Miller  
 Well Condition: Good  
 Well Depth: 2" 0-28.33  
 Initial Water Level: 8.91

$$\text{Volume Calculation: } 28.33 - 8.91 = 19.42 \times .16 = 3.1 \text{ Gal}$$

## Purge Record

Time	Volume	pH	Cond.	Temp.	Quality
0927	3.1	10.74	2.23	11.9	Cloudy light gray
0933	6.2	11.32	2.35	11.3	Clear colorless
0938	9.3	11.40	2.35	11.2	Clear and colorless

Purge Method: Dedicated teflon bailer  
 Initial Water Quality: clear and colorless  
 Final Water Quality: clear and colorless  
 Final Water Level: clear and colorless KM 9.07

## SAMPLE RECORD

Date: 6/16/2023 Volume: 2x 250 mLs  
 Time: 09:40 Analysis: VOC's/SVOC's Resample SVOCs  
 Crew: KM Chain of Custody #: 61100  
 Method: Ded. Teflon Bailer Sample Type: Water  
 Sample ID: WG-7987-061623-KM-008  
 Water Quality: clear and colorless Water Lever Tape #: 08844  
 pH: 11.46 Horiba: YSI: NFO 6212  
 Conductivity: 2.42  
 Temperature: 11.4

Comments: Resample MW-6 SVOCs

Signature Kar

## GRATWICK RIVERSIDE PARK

MW-8

DUP  
=

Date: 4/28/2023

Job #:

7987

Crew: KM/JK

Well Condition: Good

Well Depth: 2" 0-24.00

Initial Water Level: 7.00

Volume Calculation:  $24-7 = 17 \times .16 = 2.7 \text{ Gal}$ 

## Purge Record

Time	Volume	pH	Cond.	Temp.	Quality
955	2.7	12.05	2.86	11.93	Clear
1003	5.4	12.03	2.90	12.02	Clear
1009	8.1	12.07	2.95	11.74	Clear

Purge Method: Dedicated teflon bailer

Initial Water Quality: 7.00

Final Water Quality: clear colorless

Final Water Level: 7.00

## SAMPLE RECORD

Date: 4/28/23

Volume: 6x40ml 4x250ml

Time: KM/JK 1015

Analysis: VOC's/SVOC's

Crew: KM/JK

Chain of Custody #: 600570

Method: Ded. Teflon Bailer

Sample Type: water

Sample ID: W6-7987-042823-KM-003

Water Quality: clear colorless

Water Lever Tape #:

pH: 12.07

Horiba: NFO 9029

Conductivity: 2.92

Temperature: 12.41

Comments: Blind Duplicate = W6-7987-042823-KM-004 Time: 10:15

Signature

Kas

## GRATWICK RIVERSIDE PARK

**MW-9**

Date: 4/28/2023 Job #: 7987  
 Crew: KM/JK  
 Well Condition: Good  
 Well Depth: 2" 0-22.33  
 Initial Water Level: 8.45

$$\text{Volume Calculation: } 22.33 - 8.45 = 13.88 \times .16 = 2.2 \text{ Gal}$$

**Purge Record**

Time	Volume	pH	Cond.	Temp.	Quality
8:35	2.2	10.88	2.31	11.39	clear
8:39	4.4	11.68	2.31	11.14	clear
8:45	6.6	11.83	2.39	11.37	clear

Purge Method: Dedicated teflon bailer  
 Initial Water Quality: Clear colorless  
 Final Water Quality: Clear colorless  
 Final Water Level: 8.61

**SAMPLE RECORD**

Date: 4/28/23 Volume: 3x40ml 2x250mL  
 Time: 0850 Analysis: VOC's/SVOC's  
 Crew: KM/JK Chain of Custody #: 600700w  
 Method: Ded. Teflon Bailer Sample Type: Water  
 Sample ID: W6-7987-042823-141-01  
 Water Quality: clear colorless Water Lever Tape #: 08844  
 pH: 11.96 Horiba: NFO 9029  
 Conductivity: 2.39  
 Temperature: 10.91

Comments: \_\_\_\_\_

Signature Ku

## GRATWICK RIVERSIDE PARK

## OGC-3

MS/MSD

Date: 4/28/2023 Job #: 7987  
 Crew: KN/JK  
 Well Condition: Good  
 Well Depth: 2' 0-24  
 Initial Water Level: 8.21

$$\text{Volume Calculation: } 24 - 8.21 = 15.79 \times .16 = 2.5 \text{ Gal}$$

## Purge Record

Time	Volume	pH	Cond.	Temp.	Quality
<u>9:12</u>	<u>2.5</u>	<u>12.04</u>	<u>2.19</u>	<u>11.75</u>	<u>Clear</u>
<u>9:17</u>	<u>5</u>	<u>12.12</u>	<u>2.38</u>	<u>11.25</u>	<u>Clear</u>
<u>9:23</u>	<u>7.5</u>	<u>12.13</u>	<u>2.48</u>	<u>11.45</u>	<u>Clear</u>

Purge Method: Dedicated teflon bailer  
 Initial Water Quality: Clear colorless  
 Final Water Quality: Clear colorless  
 Final Water Level: 8.25

## SAMPLE RECORD

Date: 4/28/23 Volume: 8x40mL 6x250mL  
 Time: 9:30 Analysis: VOC's/SVOC's  
 Crew: KN/JK Chain of Custody #: 60070  
 Method: Ded. Teflon Bailer Sample Type: water  
 Sample ID: WG-7987-642823-KN-002  
 Water Quality: Clear colorless Water Lever Tape #: 08844  
 pH: 12.11 Horiba: NF09029  
 Conductivity: 2.38  
 Temperature: 11.62

Comments: MS/MSD Taken here

Signature K.2

## GRATWICK RIVERSIDE PARK

## OGC-6

Date: 4/28/2023

Job #:

7987Crew: KM/JKWell Condition: GoodWell Depth: 2" 0-23.59Initial Water Level: 11.72

$$\text{Volume Calculation: } 23.59 - 11.72 = 11.87 \times .16 = 1.9 \text{ Gal}$$

## Purge Record

Time	Volume	pH	Cond.	Temp.	Quality
11:10	1.9	10.42	1.08	11.79	clear
11:16	3.8	11.06	1.12	11.50	clear
11:21	5.7	11.55	1.26	11.15	clear

Purge Method: Dedicated teflon bailer

Initial Water Quality: clear and colorlessFinal Water Quality: clear and colorlessFinal Water Level: 11.85

## SAMPLE RECORD

Date: 4/28/23Volume: 3x40mL 2x250mLTime: 11:30

Analysis: VOC's/SVOC's

Crew: KM/JKChain of Custody #: 66070

Method: Ded. Teflon Bailer

Sample Type: waterSample ID: WG-7987-042823-KM-006Water Lever Tape #: 08844Water Quality: Clear colorlessHoriba: NFO 9029pH: 11.55Conductivity: 1.26Temperature: 11.41

Comments:

Signature

Kev

## GRATWICK RIVERSIDE PARK

## OGC-7

Date: 4/28/2023 Job #: 7987  
 Crew: KM/JK  
 Well Condition: Good  
 Well Depth: 2" 0-22.5  
 Initial Water Level: 7.43

$$\text{Volume Calculation: } 22.5 - 7.43 = 15.07 \times .16 = 2.4 \text{ Gal}$$

## Purge Record

Time	Volume	pH	Cond.	Temp.	Quality
10:33	2.4	11.54	1.20	11.90	clear
10:38	4.8	11.59	1.09	10.90	clear
10:43	7.2	11.47	1.10	10.50	clear

Purge Method: Dedicated teflon bailer  
 Initial Water Quality: Clear colorless  
 Final Water Quality: clear colorless  
 Final Water Level: 7.43

## SAMPLE RECORD

Date: 4/28/23 Volume: 3x40mL 2x250mL  
 Time: 1050 Analysis: VOC's/SVOC's  
 Crew: KM/JK Chain of Custody #: 60070  
 Method: Ded. Teflon Bailer Sample Type: water  
 Sample ID: WG-7987-042823-KM-05  
 Water Quality: Clear colorless Water Lever Tape #: 08844  
 pH: 11.52 Horiba: NF09029  
 Conductivity: 1.09  
 Temperature: 10.60

Comments:

---



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Signature KZ

# **Appendix D**

## **Laboratory Reports**

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ms. Sue Scrocchi  
GHD Services Inc.  
2055 Niagara Falls Blvd., Suite 3  
Niagara Falls, New York 14304

Generated 5/9/2023 5:32:14 AM

## JOB DESCRIPTION

7987, Gratwick Riverside Park

## JOB NUMBER

480-208361-1

# Eurofins Buffalo

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

## Authorization



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Authorized for release by  
Denise Heckler, Project Manager II  
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# Definitions/Glossary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: GHD Services Inc.  
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

## Job ID: 480-208361-1

### Laboratory: Eurofins Buffalo

#### Narrative

#### Job Narrative 480-208361-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 4/28/2023 12:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 8.6° C. The temperature is accepted as the samples arrived direct from the site.

#### GC/MS VOA

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-668038 recovered above the upper control limit for 2-Butanone (MEK) and Tetrachloroethene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WG-7987-042823-KM-001 (480-208361-2), WG-7987-042823-KM-003 (480-208361-4), WG-7987-042823-KM-004 (480-208361-5) and WG-7987-042823-KM-005 (480-208361-6).

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-668038 recovered above the upper control limit for 2-Butanone (MEK). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: WG-7987-042823-KM-006 (480-208361-7) and WG-7987-042823-KM-007 (480-208361-8).

Method 8260C: The continuing calibration verification (CCV) analyzed in 480-668038 was outside the method criteria for the following analyte(s): Tetrachloroethene. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: WG-7987-042823-KM-001 (480-208361-2), WG-7987-042823-KM-003 (480-208361-4), WG-7987-042823-KM-004 (480-208361-5), WG-7987-042823-KM-006 (480-208361-7) and WG-7987-042823-KM-007 (480-208361-8). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

Method 8270D: The following sample was diluted due to the nature of the sample matrix: WG-7987-042823-KM-001 (480-208361-2). Elevated reporting limits (RLs) are provided.

Method 8270D: The following samples were diluted due to the nature of the sample matrix: WG-7987-042823-KM-005 (480-208361-6) and WG-7987-042823-KM-006 (480-208361-7). Elevated reporting limits (RLs) are provided.

Method 8270D: The following samples were diluted to bring the concentration of target analytes within the calibration range: WG-7987-042823-KM-003 (480-208361-4), WG-7987-042823-KM-004 (480-208361-5) and WG-7987-042823-KM-006 (480-208361-7). Elevated reporting limits (RLs) are provided.

Method 8270D: The following sample was diluted due to the abundance of target analytes: WG-7987-042823-KM-006 (480-208361-7). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Detection Summary

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: TB-7987-042823-KM**

**Lab Sample ID: 480-208361-1**

No Detections.

**Client Sample ID: WG-7987-042823-KM-001**

**Lab Sample ID: 480-208361-2**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	7.6		4.0	3.0	ug/L	4		8260C	Total/NA
Toluene	3.4	J	4.0	2.0	ug/L	4		8260C	Total/NA
2,4-Dimethylphenol	41	J	100	5.0	ug/L	10		8270D	Total/NA
2-Methylphenol	7.4	J	100	4.0	ug/L	10		8270D	Total/NA
4-Methylphenol	120		100	3.6	ug/L	10		8270D	Total/NA
Phenol	12	J	100	3.9	ug/L	10		8270D	Total/NA

**Client Sample ID: WG-7987-042823-KM-002**

**Lab Sample ID: 480-208361-3**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.9	J	5.0	3.0	ug/L	1		8260C	Total/NA
Benzene	0.43	J	0.70	0.41	ug/L	1		8260C	Total/NA
Toluene	0.53	J	1.0	0.51	ug/L	1		8260C	Total/NA
Trichloroethene	0.81	J	1.0	0.46	ug/L	1		8260C	Total/NA
2,4-Dimethylphenol	4.3	J	10	0.50	ug/L	1		8270D	Total/NA
2-Methylphenol	13		10	0.40	ug/L	1		8270D	Total/NA
4-Methylphenol	8.3	J	10	0.36	ug/L	1		8270D	Total/NA
Phenol	28		10	0.39	ug/L	1		8270D	Total/NA

**Client Sample ID: WG-7987-042823-KM-003**

**Lab Sample ID: 480-208361-4**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.4		2.8	1.6	ug/L	4		8260C	Total/NA
Chlorobenzene	8.2		4.0	3.0	ug/L	4		8260C	Total/NA
Ethylbenzene	3.9	J	4.0	3.0	ug/L	4		8260C	Total/NA
Toluene	2.2	J	4.0	2.0	ug/L	4		8260C	Total/NA
Trichloroethene	3.2	J	4.0	1.8	ug/L	4		8260C	Total/NA
Vinyl chloride	6.9		4.0	3.6	ug/L	4		8260C	Total/NA
1,2-Dichlorobenzene	1.8	J	10	0.40	ug/L	1		8270D	Total/NA
1,4-Dichlorobenzene	75	E	10	0.46	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	19		10	0.50	ug/L	1		8270D	Total/NA
2-Methylphenol	16		10	0.40	ug/L	1		8270D	Total/NA
4-Methylphenol	13		10	0.36	ug/L	1		8270D	Total/NA
Naphthalene	0.93	J	10	0.76	ug/L	1		8270D	Total/NA
1,4-Dichlorobenzene - DL	75		50	2.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol - DL	17	J	50	2.5	ug/L	5		8270D	Total/NA
2-Methylphenol - DL	15	J	50	2.0	ug/L	5		8270D	Total/NA
4-Methylphenol - DL	11	J	50	1.8	ug/L	5		8270D	Total/NA

**Client Sample ID: WG-7987-042823-KM-004**

**Lab Sample ID: 480-208361-5**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.2	J	3.5	2.1	ug/L	5		8260C	Total/NA
Chlorobenzene	7.9		5.0	3.8	ug/L	5		8260C	Total/NA
Ethylbenzene	3.7	J	5.0	3.7	ug/L	5		8260C	Total/NA
Trichloroethene	3.0	J	5.0	2.3	ug/L	5		8260C	Total/NA
Vinyl chloride	6.1		5.0	4.5	ug/L	5		8260C	Total/NA
1,2-Dichlorobenzene	1.5	J	10	0.40	ug/L	1		8270D	Total/NA
1,4-Dichlorobenzene	70	E	10	0.46	ug/L	1		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Buffalo

# Detection Summary

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

## Client Sample ID: WG-7987-042823-KM-004 (Continued)

## Lab Sample ID: 480-208361-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2,4-Dimethylphenol	17		10	0.50	ug/L	1		8270D	Total/NA
2-Methylphenol	15		10	0.40	ug/L	1		8270D	Total/NA
4-Methylphenol	12		10	0.36	ug/L	1		8270D	Total/NA
Phenol	0.87 J		10	0.39	ug/L	1		8270D	Total/NA
1,4-Dichlorobenzene - DL	71		50	2.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol - DL	16 J		50	2.5	ug/L	5		8270D	Total/NA
2-Methylphenol - DL	14 J		50	2.0	ug/L	5		8270D	Total/NA
4-Methylphenol - DL	11 J		50	1.8	ug/L	5		8270D	Total/NA

## Client Sample ID: WG-7987-042823-KM-005

## Lab Sample ID: 480-208361-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	1.3		1.0	0.51	ug/L	1		8260C	Total/NA
trans-1,2-Dichloroethene	1.2		1.0	0.90	ug/L	1		8260C	Total/NA
Trichloroethene	3.4		1.0	0.46	ug/L	1		8260C	Total/NA
Vinyl chloride	3.0		1.0	0.90	ug/L	1		8260C	Total/NA
Xylenes, Total	0.86 J		2.0	0.66	ug/L	1		8260C	Total/NA

## Client Sample ID: WG-7987-042823-KM-006

## Lab Sample ID: 480-208361-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	8.6		5.0	3.8	ug/L	5		8260C	Total/NA
Tetrachloroethene	9.5		5.0	1.8	ug/L	5		8260C	Total/NA
Toluene	13		5.0	2.6	ug/L	5		8260C	Total/NA
Trichloroethene	20		5.0	2.3	ug/L	5		8260C	Total/NA
1,2-Dichlorobenzene	4.3 J		50	2.0	ug/L	5		8270D	Total/NA
1,4-Dichlorobenzene	97		50	2.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	21 J		50	2.5	ug/L	5		8270D	Total/NA
2-Methylphenol	16 J		50	2.0	ug/L	5		8270D	Total/NA
4-Methylphenol	41 J		50	1.8	ug/L	5		8270D	Total/NA
Phenol	1500 E		50	2.0	ug/L	5		8270D	Total/NA
1,4-Dichlorobenzene - DL	100 J		1000	46	ug/L	100		8270D	Total/NA
4-Methylphenol - DL	39 J		1000	36	ug/L	100		8270D	Total/NA
Phenol - DL	1500		1000	39	ug/L	100		8270D	Total/NA

## Client Sample ID: WG-7987-042823-KM-007

## Lab Sample ID: 480-208361-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	16		2.0	0.72	ug/L	2		8260C	Total/NA
Toluene	1.8 J		2.0	1.0	ug/L	2		8260C	Total/NA
trans-1,2-Dichloroethene	18		2.0	1.8	ug/L	2		8260C	Total/NA
Trichloroethene	25		2.0	0.92	ug/L	2		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Buffalo

# Client Sample Results

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

**Client Sample ID: TB-7987-042823-KM**

Date Collected: 04/28/23 00:00

Date Received: 04/28/23 12:45

**Lab Sample ID: 480-208361-1**

Matrix: Water

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/02/23 00:28	1
Acetone	ND		5.0	3.0	ug/L			05/02/23 00:28	1
Benzene	ND		0.70	0.41	ug/L			05/02/23 00:28	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/02/23 00:28	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/02/23 00:28	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/02/23 00:28	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/02/23 00:28	1
Toluene	ND		1.0	0.51	ug/L			05/02/23 00:28	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/02/23 00:28	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/02/23 00:28	1
Trichloroethene	ND		1.0	0.46	ug/L			05/02/23 00:28	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/02/23 00:28	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/02/23 00:28	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	97		77 - 120					05/02/23 00:28	1
4-Bromofluorobenzene (Surr)	95		73 - 120					05/02/23 00:28	1
Toluene-d8 (Surr)	98		80 - 120					05/02/23 00:28	1

**Client Sample ID: WG-7987-042823-KM-001**

**Lab Sample ID: 480-208361-2**

Matrix: Water

Date Collected: 04/28/23 08:50

Date Received: 04/28/23 12:45

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		20	5.3	ug/L			05/04/23 01:11	4
Acetone	ND		20	12	ug/L			05/04/23 01:11	4
Benzene	ND		2.8	1.6	ug/L			05/04/23 01:11	4
<b>Chlorobenzene</b>	<b>7.6</b>		4.0	3.0	ug/L			05/04/23 01:11	4
Ethylbenzene	ND		4.0	3.0	ug/L			05/04/23 01:11	4
Methylene Chloride	ND		4.0	1.8	ug/L			05/04/23 01:11	4
Tetrachloroethene	ND		4.0	1.4	ug/L			05/04/23 01:11	4
<b>Toluene</b>	<b>3.4 J</b>		4.0	2.0	ug/L			05/04/23 01:11	4
1,1-Dichloroethane	ND		4.0	1.5	ug/L			05/04/23 01:11	4
trans-1,2-Dichloroethene	ND		4.0	3.6	ug/L			05/04/23 01:11	4
Trichloroethene	ND		4.0	1.8	ug/L			05/04/23 01:11	4
Vinyl chloride	ND		4.0	3.6	ug/L			05/04/23 01:11	4
Xylenes, Total	ND		8.0	2.6	ug/L			05/04/23 01:11	4
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	95		77 - 120					05/04/23 01:11	4
4-Bromofluorobenzene (Surr)	96		73 - 120					05/04/23 01:11	4
Toluene-d8 (Surr)	96		80 - 120					05/04/23 01:11	4

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		100	4.0	ug/L			05/02/23 09:35	10
1,4-Dichlorobenzene	ND		100	4.6	ug/L			05/02/23 09:35	10
<b>2,4-Dimethylphenol</b>	<b>41 J</b>		100	5.0	ug/L			05/02/23 09:35	10
<b>2-Methylphenol</b>	<b>7.4 J</b>		100	4.0	ug/L			05/02/23 09:35	10
<b>4-Methylphenol</b>	<b>120</b>		100	3.6	ug/L			05/02/23 09:35	10

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# Client Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: WG-7987-042823-KM-001**

**Lab Sample ID: 480-208361-2**

**Matrix: Water**

Date Collected: 04/28/23 08:50

Date Received: 04/28/23 12:45

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	ND		100	4.7	ug/L		05/02/23 09:35	05/03/23 20:49	10
Naphthalene	ND		100	7.6	ug/L		05/02/23 09:35	05/03/23 20:49	10
<b>Phenol</b>	<b>12</b>	<b>J</b>	100	3.9	ug/L		05/02/23 09:35	05/03/23 20:49	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	71		46 - 120				05/02/23 09:35	05/03/23 20:49	10
2-Fluorobiphenyl	87		48 - 120				05/02/23 09:35	05/03/23 20:49	10
p-Terphenyl-d14	96		60 - 148				05/02/23 09:35	05/03/23 20:49	10
Phenol-d5	39		22 - 120				05/02/23 09:35	05/03/23 20:49	10
2-Fluorophenol	64		35 - 120				05/02/23 09:35	05/03/23 20:49	10
2,4,6-Tribromophenol	69		41 - 120				05/02/23 09:35	05/03/23 20:49	10

**Client Sample ID: WG-7987-042823-KM-002**

**Lab Sample ID: 480-208361-3**

**Matrix: Water**

Date Collected: 04/28/23 09:30

Date Received: 04/28/23 12:45

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L		05/04/23 12:17		1
<b>Acetone</b>	<b>3.9</b>	<b>J</b>	5.0	3.0	ug/L		05/04/23 12:17		1
<b>Benzene</b>	<b>0.43</b>	<b>J</b>	0.70	0.41	ug/L		05/04/23 12:17		1
Chlorobenzene	ND		1.0	0.75	ug/L		05/04/23 12:17		1
Ethylbenzene	ND		1.0	0.74	ug/L		05/04/23 12:17		1
Methylene Chloride	ND		1.0	0.44	ug/L		05/04/23 12:17		1
Tetrachloroethene	ND		1.0	0.36	ug/L		05/04/23 12:17		1
<b>Toluene</b>	<b>0.53</b>	<b>J</b>	1.0	0.51	ug/L		05/04/23 12:17		1
1,1-Dichloroethane	ND		1.0	0.38	ug/L		05/04/23 12:17		1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L		05/04/23 12:17		1
<b>Trichloroethene</b>	<b>0.81</b>	<b>J</b>	1.0	0.46	ug/L		05/04/23 12:17		1
Vinyl chloride	ND		1.0	0.90	ug/L		05/04/23 12:17		1
Xylenes, Total	ND		2.0	0.66	ug/L		05/04/23 12:17		1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120				05/04/23 12:17		1
4-Bromofluorobenzene (Surr)	102		73 - 120				05/04/23 12:17		1
Toluene-d8 (Surr)	97		80 - 120				05/04/23 12:17		1

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		05/02/23 09:35	05/03/23 17:06	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/02/23 09:35	05/03/23 17:06	1
<b>2,4-Dimethylphenol</b>	<b>4.3</b>	<b>J</b>	10	0.50	ug/L		05/02/23 09:35	05/03/23 17:06	1
<b>2-Methylphenol</b>	<b>13</b>		10	0.40	ug/L		05/02/23 09:35	05/03/23 17:06	1
<b>4-Methylphenol</b>	<b>8.3</b>	<b>J</b>	10	0.36	ug/L		05/02/23 09:35	05/03/23 17:06	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		05/02/23 09:35	05/03/23 17:06	1
Naphthalene	ND		10	0.76	ug/L		05/02/23 09:35	05/03/23 17:06	1
<b>Phenol</b>	<b>28</b>		10	0.39	ug/L		05/02/23 09:35	05/03/23 17:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	74		46 - 120				05/02/23 09:35	05/03/23 17:06	1
2-Fluorobiphenyl	88		48 - 120				05/02/23 09:35	05/03/23 17:06	1

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# Client Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: WG-7987-042823-KM-002**

**Lab Sample ID: 480-208361-3**

Matrix: Water

Date Collected: 04/28/23 09:30

Date Received: 04/28/23 12:45

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl-d14	103		60 - 148	05/02/23 09:35	05/03/23 17:06	1
Phenol-d5	43		22 - 120	05/02/23 09:35	05/03/23 17:06	1
2-Fluorophenol	62		35 - 120	05/02/23 09:35	05/03/23 17:06	1
2,4,6-Tribromophenol	100		41 - 120	05/02/23 09:35	05/03/23 17:06	1

**Client Sample ID: WG-7987-042823-KM-003**

**Lab Sample ID: 480-208361-4**

Matrix: Water

Date Collected: 04/28/23 10:15

Date Received: 04/28/23 12:45

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		20	5.3	ug/L			05/04/23 01:55	4
Acetone	ND		20	12	ug/L			05/04/23 01:55	4
Benzene	3.4		2.8	1.6	ug/L			05/04/23 01:55	4
Chlorobenzene	8.2		4.0	3.0	ug/L			05/04/23 01:55	4
Ethylbenzene	3.9 J		4.0	3.0	ug/L			05/04/23 01:55	4
Methylene Chloride	ND		4.0	1.8	ug/L			05/04/23 01:55	4
Tetrachloroethene	ND		4.0	1.4	ug/L			05/04/23 01:55	4
Toluene	2.2 J		4.0	2.0	ug/L			05/04/23 01:55	4
1,1-Dichloroethane	ND		4.0	1.5	ug/L			05/04/23 01:55	4
trans-1,2-Dichloroethene	ND		4.0	3.6	ug/L			05/04/23 01:55	4
Trichloroethene	3.2 J		4.0	1.8	ug/L			05/04/23 01:55	4
Vinyl chloride	6.9		4.0	3.6	ug/L			05/04/23 01:55	4
Xylenes, Total	ND		8.0	2.6	ug/L			05/04/23 01:55	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		77 - 120		05/04/23 01:55	4
4-Bromofluorobenzene (Surr)	96		73 - 120		05/04/23 01:55	4
Toluene-d8 (Surr)	97		80 - 120		05/04/23 01:55	4

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.8 J		10	0.40	ug/L		05/02/23 09:35	05/03/23 21:17	1
1,4-Dichlorobenzene	75 E		10	0.46	ug/L		05/02/23 09:35	05/03/23 21:17	1
2,4-Dimethylphenol	19		10	0.50	ug/L		05/02/23 09:35	05/03/23 21:17	1
2-Methylphenol	16		10	0.40	ug/L		05/02/23 09:35	05/03/23 21:17	1
4-Methylphenol	13		10	0.36	ug/L		05/02/23 09:35	05/03/23 21:17	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		05/02/23 09:35	05/03/23 21:17	1
Naphthalene	0.93 J		10	0.76	ug/L		05/02/23 09:35	05/03/23 21:17	1
Phenol	ND		10	0.39	ug/L		05/02/23 09:35	05/03/23 21:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	84		46 - 120		05/02/23 09:35	05/03/23 21:17
2-Fluorobiphenyl	96		48 - 120		05/02/23 09:35	05/03/23 21:17
p-Terphenyl-d14	108		60 - 148		05/02/23 09:35	05/03/23 21:17
Phenol-d5	46		22 - 120		05/02/23 09:35	05/03/23 21:17
2-Fluorophenol	67		35 - 120		05/02/23 09:35	05/03/23 21:17
2,4,6-Tribromophenol	106		41 - 120		05/02/23 09:35	05/03/23 21:17

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# Client Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: WG-7987-042823-KM-003**

**Lab Sample ID: 480-208361-4**

Matrix: Water

Date Collected: 04/28/23 10:15

Date Received: 04/28/23 12:45

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		50	2.0	ug/L		05/02/23 09:35	05/05/23 02:52	5
<b>1,4-Dichlorobenzene</b>	<b>75</b>		50	2.3	ug/L		05/02/23 09:35	05/05/23 02:52	5
<b>2,4-Dimethylphenol</b>	<b>17 J</b>		50	2.5	ug/L		05/02/23 09:35	05/05/23 02:52	5
<b>2-Methylphenol</b>	<b>15 J</b>		50	2.0	ug/L		05/02/23 09:35	05/05/23 02:52	5
<b>4-Methylphenol</b>	<b>11 J</b>		50	1.8	ug/L		05/02/23 09:35	05/05/23 02:52	5
Di-n-octyl phthalate	ND		50	2.4	ug/L		05/02/23 09:35	05/05/23 02:52	5
Naphthalene	ND		50	3.8	ug/L		05/02/23 09:35	05/05/23 02:52	5
Phenol	ND		50	2.0	ug/L		05/02/23 09:35	05/05/23 02:52	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>		<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Nitrobenzene-d5	74			46 - 120			05/02/23 09:35	05/05/23 02:52	5
2-Fluorobiphenyl	88			48 - 120			05/02/23 09:35	05/05/23 02:52	5
p-Terphenyl-d14	95			60 - 148			05/02/23 09:35	05/05/23 02:52	5
Phenol-d5	42			22 - 120			05/02/23 09:35	05/05/23 02:52	5
2-Fluorophenol	67			35 - 120			05/02/23 09:35	05/05/23 02:52	5
2,4,6-Tribromophenol	94			41 - 120			05/02/23 09:35	05/05/23 02:52	5

**Client Sample ID: WG-7987-042823-KM-004**

**Lab Sample ID: 480-208361-5**

Matrix: Water

Date Collected: 04/28/23 10:15

Date Received: 04/28/23 12:45

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		25	6.6	ug/L		05/04/23 02:17	05/04/23 02:17	5
Acetone	ND		25	15	ug/L		05/04/23 02:17	05/04/23 02:17	5
<b>Benzene</b>	<b>3.2 J</b>		3.5	2.1	ug/L		05/04/23 02:17	05/04/23 02:17	5
<b>Chlorobenzene</b>	<b>7.9</b>		5.0	3.8	ug/L		05/04/23 02:17	05/04/23 02:17	5
<b>Ethylbenzene</b>	<b>3.7 J</b>		5.0	3.7	ug/L		05/04/23 02:17	05/04/23 02:17	5
Methylene Chloride	ND		5.0	2.2	ug/L		05/04/23 02:17	05/04/23 02:17	5
Tetrachloroethene	ND		5.0	1.8	ug/L		05/04/23 02:17	05/04/23 02:17	5
Toluene	ND		5.0	2.6	ug/L		05/04/23 02:17	05/04/23 02:17	5
1,1-Dichloroethane	ND		5.0	1.9	ug/L		05/04/23 02:17	05/04/23 02:17	5
trans-1,2-Dichloroethene	ND		5.0	4.5	ug/L		05/04/23 02:17	05/04/23 02:17	5
<b>Trichloroethene</b>	<b>3.0 J</b>		5.0	2.3	ug/L		05/04/23 02:17	05/04/23 02:17	5
<b>Vinyl chloride</b>	<b>6.1</b>		5.0	4.5	ug/L		05/04/23 02:17	05/04/23 02:17	5
Xylenes, Total	ND		10	3.3	ug/L		05/04/23 02:17	05/04/23 02:17	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>		<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	94			77 - 120			05/04/23 02:17	05/04/23 02:17	5
4-Bromofluorobenzene (Surr)	95			73 - 120			05/04/23 02:17	05/04/23 02:17	5
Toluene-d8 (Surr)	95			80 - 120			05/04/23 02:17	05/04/23 02:17	5

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,2-Dichlorobenzene</b>	<b>1.5 J</b>		10	0.40	ug/L		05/02/23 09:35	05/03/23 21:44	1
<b>1,4-Dichlorobenzene</b>	<b>70 E</b>		10	0.46	ug/L		05/02/23 09:35	05/03/23 21:44	1
<b>2,4-Dimethylphenol</b>	<b>17</b>		10	0.50	ug/L		05/02/23 09:35	05/03/23 21:44	1
<b>2-Methylphenol</b>	<b>15</b>		10	0.40	ug/L		05/02/23 09:35	05/03/23 21:44	1
<b>4-Methylphenol</b>	<b>12</b>		10	0.36	ug/L		05/02/23 09:35	05/03/23 21:44	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		05/02/23 09:35	05/03/23 21:44	1
Naphthalene	ND		10	0.76	ug/L		05/02/23 09:35	05/03/23 21:44	1

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# Client Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: WG-7987-042823-KM-004**

**Lab Sample ID: 480-208361-5**

Matrix: Water

Date Collected: 04/28/23 10:15

Date Received: 04/28/23 12:45

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.87	J	10	0.39	ug/L	D	05/02/23 09:35	05/03/23 21:44	1
<b>Surrogate</b>									
Nitrobenzene-d5	77		46 - 120				05/02/23 09:35	05/03/23 21:44	1
2-Fluorobiphenyl	88		48 - 120				05/02/23 09:35	05/03/23 21:44	1
p-Terphenyl-d14	98		60 - 148				05/02/23 09:35	05/03/23 21:44	1
Phenol-d5	42		22 - 120				05/02/23 09:35	05/03/23 21:44	1
2-Fluorophenol	62		35 - 120				05/02/23 09:35	05/03/23 21:44	1
2,4,6-Tribromophenol	100		41 - 120				05/02/23 09:35	05/03/23 21:44	1

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		50	2.0	ug/L	D	05/02/23 09:35	05/05/23 03:20	5
1,4-Dichlorobenzene	71		50	2.3	ug/L		05/02/23 09:35	05/05/23 03:20	5
2,4-Dimethylphenol	16	J	50	2.5	ug/L		05/02/23 09:35	05/05/23 03:20	5
2-Methylphenol	14	J	50	2.0	ug/L		05/02/23 09:35	05/05/23 03:20	5
4-Methylphenol	11	J	50	1.8	ug/L		05/02/23 09:35	05/05/23 03:20	5
Di-n-octyl phthalate	ND		50	2.4	ug/L		05/02/23 09:35	05/05/23 03:20	5
Naphthalene	ND		50	3.8	ug/L		05/02/23 09:35	05/05/23 03:20	5
Phenol	ND		50	2.0	ug/L		05/02/23 09:35	05/05/23 03:20	5
<b>Surrogate</b>									
Nitrobenzene-d5	71		46 - 120				05/02/23 09:35	05/05/23 03:20	5
2-Fluorobiphenyl	88		48 - 120				05/02/23 09:35	05/05/23 03:20	5
p-Terphenyl-d14	92		60 - 148				05/02/23 09:35	05/05/23 03:20	5
Phenol-d5	41		22 - 120				05/02/23 09:35	05/05/23 03:20	5
2-Fluorophenol	64		35 - 120				05/02/23 09:35	05/05/23 03:20	5
2,4,6-Tribromophenol	88		41 - 120				05/02/23 09:35	05/05/23 03:20	5

**Client Sample ID: WG-7987-042823-KM-005**

**Lab Sample ID: 480-208361-6**

Matrix: Water

Date Collected: 04/28/23 10:50

Date Received: 04/28/23 12:45

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L	D	05/04/23 02:39		1
Acetone	ND		5.0	3.0	ug/L		05/04/23 02:39		1
Benzene	ND		0.70	0.41	ug/L		05/04/23 02:39		1
Chlorobenzene	ND		1.0	0.75	ug/L		05/04/23 02:39		1
Ethylbenzene	ND		1.0	0.74	ug/L		05/04/23 02:39		1
Methylene Chloride	ND		1.0	0.44	ug/L		05/04/23 02:39		1
Tetrachloroethene	ND		1.0	0.36	ug/L		05/04/23 02:39		1
Toluene	1.3		1.0	0.51	ug/L		05/04/23 02:39		1
1,1-Dichloroethane	ND		1.0	0.38	ug/L		05/04/23 02:39		1
trans-1,2-Dichloroethene	1.2		1.0	0.90	ug/L		05/04/23 02:39		1
Trichloroethene	3.4		1.0	0.46	ug/L		05/04/23 02:39		1
Vinyl chloride	3.0		1.0	0.90	ug/L		05/04/23 02:39		1
Xylenes, Total	0.86	J	2.0	0.66	ug/L		05/04/23 02:39		1
<b>Surrogate</b>									
1,2-Dichloroethane-d4 (Surr)	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		77 - 120				05/04/23 02:39		1

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# Client Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: WG-7987-042823-KM-005**

**Lab Sample ID: 480-208361-6**

Matrix: Water

Date Collected: 04/28/23 10:50

Date Received: 04/28/23 12:45

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		73 - 120		05/04/23 02:39	1
Toluene-d8 (Surr)	95		80 - 120		05/04/23 02:39	1

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		50	2.0	ug/L	05/02/23 09:35	05/04/23 00:03	5	8
1,4-Dichlorobenzene	ND		50	2.3	ug/L	05/02/23 09:35	05/04/23 00:03	5	9
2,4-Dimethylphenol	ND		50	2.5	ug/L	05/02/23 09:35	05/04/23 00:03	5	10
2-Methylphenol	ND		50	2.0	ug/L	05/02/23 09:35	05/04/23 00:03	5	11
4-Methylphenol	ND		50	1.8	ug/L	05/02/23 09:35	05/04/23 00:03	5	12
Di-n-octyl phthalate	ND		50	2.4	ug/L	05/02/23 09:35	05/04/23 00:03	5	13
Naphthalene	ND		50	3.8	ug/L	05/02/23 09:35	05/04/23 00:03	5	14
Phenol	ND		50	2.0	ug/L	05/02/23 09:35	05/04/23 00:03	5	15

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	74		46 - 120	05/02/23 09:35	05/04/23 00:03	5
2-Fluorobiphenyl	91		48 - 120	05/02/23 09:35	05/04/23 00:03	5
p-Terphenyl-d14	92		60 - 148	05/02/23 09:35	05/04/23 00:03	5
Phenol-d5	37		22 - 120	05/02/23 09:35	05/04/23 00:03	5
2-Fluorophenol	61		35 - 120	05/02/23 09:35	05/04/23 00:03	5
2,4,6-Tribromophenol	60		41 - 120	05/02/23 09:35	05/04/23 00:03	5

**Client Sample ID: WG-7987-042823-KM-006**

**Lab Sample ID: 480-208361-7**

Matrix: Water

Date Collected: 04/28/23 11:30

Date Received: 04/28/23 12:45

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		25	6.6	ug/L		05/04/23 03:01	5	
Acetone	ND		25	15	ug/L		05/04/23 03:01	5	
Benzene	ND		3.5	2.1	ug/L		05/04/23 03:01	5	
Chlorobenzene	8.6		5.0	3.8	ug/L		05/04/23 03:01	5	
Ethylbenzene	ND		5.0	3.7	ug/L		05/04/23 03:01	5	
Methylene Chloride	ND		5.0	2.2	ug/L		05/04/23 03:01	5	
Tetrachloroethene	9.5		5.0	1.8	ug/L		05/04/23 03:01	5	
Toluene	13		5.0	2.6	ug/L		05/04/23 03:01	5	
1,1-Dichloroethane	ND		5.0	1.9	ug/L		05/04/23 03:01	5	
trans-1,2-Dichloroethene	ND		5.0	4.5	ug/L		05/04/23 03:01	5	
Trichloroethene	20		5.0	2.3	ug/L		05/04/23 03:01	5	
Vinyl chloride	ND		5.0	4.5	ug/L		05/04/23 03:01	5	
Xylenes, Total	ND		10	3.3	ug/L		05/04/23 03:01	5	

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		77 - 120		05/04/23 03:01	5
4-Bromofluorobenzene (Surr)	94		73 - 120		05/04/23 03:01	5
Toluene-d8 (Surr)	95		80 - 120		05/04/23 03:01	5

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	4.3	J	50	2.0	ug/L	05/02/23 09:35	05/04/23 00:31	5	

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# Client Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: WG-7987-042823-KM-006**

**Lab Sample ID: 480-208361-7**

**Matrix: Water**

Date Collected: 04/28/23 11:30

Date Received: 04/28/23 12:45

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	97		50	2.3	ug/L	05/02/23 09:35	05/04/23 00:31		5
2,4-Dimethylphenol	21 J		50	2.5	ug/L	05/02/23 09:35	05/04/23 00:31		5
2-Methylphenol	16 J		50	2.0	ug/L	05/02/23 09:35	05/04/23 00:31		5
4-Methylphenol	41 J		50	1.8	ug/L	05/02/23 09:35	05/04/23 00:31		5
Di-n-octyl phthalate	ND		50	2.4	ug/L	05/02/23 09:35	05/04/23 00:31		5
Naphthalene	ND		50	3.8	ug/L	05/02/23 09:35	05/04/23 00:31		5
Phenol	1500 E		50	2.0	ug/L	05/02/23 09:35	05/04/23 00:31		5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	74		46 - 120	05/02/23 09:35	05/04/23 00:31	5
2-Fluorobiphenyl	97		48 - 120	05/02/23 09:35	05/04/23 00:31	5
p-Terphenyl-d14	85		60 - 148	05/02/23 09:35	05/04/23 00:31	5
Phenol-d5	52		22 - 120	05/02/23 09:35	05/04/23 00:31	5
2-Fluorophenol	66		35 - 120	05/02/23 09:35	05/04/23 00:31	5
2,4,6-Tribromophenol	103		41 - 120	05/02/23 09:35	05/04/23 00:31	5

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		1000	40	ug/L	05/02/23 09:35	05/05/23 03:48		100
<b>1,4-Dichlorobenzene</b>	<b>100 J</b>		1000	46	ug/L	05/02/23 09:35	05/05/23 03:48		100
2,4-Dimethylphenol	ND		1000	50	ug/L	05/02/23 09:35	05/05/23 03:48		100
2-Methylphenol	ND		1000	40	ug/L	05/02/23 09:35	05/05/23 03:48		100
<b>4-Methylphenol</b>	<b>39 J</b>		1000	36	ug/L	05/02/23 09:35	05/05/23 03:48		100
Di-n-octyl phthalate	ND		1000	47	ug/L	05/02/23 09:35	05/05/23 03:48		100
Naphthalene	ND		1000	76	ug/L	05/02/23 09:35	05/05/23 03:48		100
Phenol	1500		1000	39	ug/L	05/02/23 09:35	05/05/23 03:48		100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	73		46 - 120	05/02/23 09:35	05/05/23 03:48	100
2-Fluorobiphenyl	101		48 - 120	05/02/23 09:35	05/05/23 03:48	100
p-Terphenyl-d14	88		60 - 148	05/02/23 09:35	05/05/23 03:48	100
Phenol-d5	73		22 - 120	05/02/23 09:35	05/05/23 03:48	100
2-Fluorophenol	152 S1+		35 - 120	05/02/23 09:35	05/05/23 03:48	100
2,4,6-Tribromophenol	0 S1-		41 - 120	05/02/23 09:35	05/05/23 03:48	100

**Client Sample ID: WG-7987-042823-KM-007**

**Lab Sample ID: 480-208361-8**

**Matrix: Water**

Date Collected: 04/28/23 12:10

Date Received: 04/28/23 12:45

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		10	2.6	ug/L			05/04/23 03:22	2
Acetone	ND		10	6.0	ug/L			05/04/23 03:22	2
Benzene	ND		1.4	0.82	ug/L			05/04/23 03:22	2
Chlorobenzene	ND		2.0	1.5	ug/L			05/04/23 03:22	2
Ethylbenzene	ND		2.0	1.5	ug/L			05/04/23 03:22	2
Methylene Chloride	ND		2.0	0.88	ug/L			05/04/23 03:22	2
<b>Tetrachloroethene</b>	<b>16</b>		2.0	0.72	ug/L			05/04/23 03:22	2
<b>Toluene</b>	<b>1.8 J</b>		2.0	1.0	ug/L			05/04/23 03:22	2
1,1-Dichloroethane	ND		2.0	0.76	ug/L			05/04/23 03:22	2
<b>trans-1,2-Dichloroethene</b>	<b>18</b>		2.0	1.8	ug/L			05/04/23 03:22	2

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# Client Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: WG-7987-042823-KM-007**

**Lab Sample ID: 480-208361-8**

**Matrix: Water**

Date Collected: 04/28/23 12:10

Date Received: 04/28/23 12:45

## Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	25		2.0	0.92	ug/L			05/04/23 03:22	2
Vinyl chloride	ND		2.0	1.8	ug/L			05/04/23 03:22	2
Xylenes, Total	ND		4.0	1.3	ug/L			05/04/23 03:22	2
<i>Surrogate</i>									
Surrogate		%Recovery	Qualifier	Limits		Prepared		Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)		96		77 - 120				05/04/23 03:22	2
4-Bromofluorobenzene (Surr)		94		73 - 120				05/04/23 03:22	2
Toluene-d8 (Surr)		96		80 - 120				05/04/23 03:22	2

# Surrogate Summary

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

## Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DCA (77-120)	BFB (73-120)	TOL (80-120)
480-208361-1	TB-7987-042823-KM	97	95	98
480-208361-2	WG-7987-042823-KM-001	95	96	96
480-208361-3	WG-7987-042823-KM-002	98	102	97
480-208361-3 MS	WG-7987-042823-KM-002	95	103	97
480-208361-3 MSD	WG-7987-042823-KM-002	94	102	97
480-208361-4	WG-7987-042823-KM-003	94	96	97
480-208361-5	WG-7987-042823-KM-004	94	95	95
480-208361-6	WG-7987-042823-KM-005	96	95	95
480-208361-7	WG-7987-042823-KM-006	94	94	95
480-208361-8	WG-7987-042823-KM-007	96	94	96
LCS 480-667700/4	Lab Control Sample	98	98	100
LCS 480-668038/6	Lab Control Sample	92	99	98
LCS 480-668098/5	Lab Control Sample	100	98	98
MB 480-667700/6	Method Blank	96	93	101
MB 480-668038/8	Method Blank	94	95	97
MB 480-668098/7	Method Blank	98	101	95

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		NBZ (46-120)	FBP (48-120)	TPHd14 (60-148)	PHL (22-120)	2FP (35-120)	TBP (41-120)
480-208361-2	WG-7987-042823-KM-001	71	87	96	39	64	69
480-208361-3	WG-7987-042823-KM-002	74	88	103	43	62	100
480-208361-3 MS	WG-7987-042823-KM-002	78	92	96	52	67	100
480-208361-3 MSD	WG-7987-042823-KM-002	70	85	94	49	60	101
480-208361-4	WG-7987-042823-KM-003	84	96	108	46	67	106
480-208361-4 - DL	WG-7987-042823-KM-003	74	88	95	42	67	94
480-208361-5	WG-7987-042823-KM-004	77	88	98	42	62	100
480-208361-5 - DL	WG-7987-042823-KM-004	71	88	92	41	64	88
480-208361-6	WG-7987-042823-KM-005	74	91	92	37	61	60
480-208361-7	WG-7987-042823-KM-006	74	97	85	52	66	103
480-208361-7 - DL	WG-7987-042823-KM-006	73	101	88	73	152 S1+	0 S1-
LCS 480-667747/2-A	Lab Control Sample	80	91	104	59	72	105
LCSD 480-667747/3-A	Lab Control Sample Dup	77	89	102	56	71	100
MB 480-667747/1-A	Method Blank	73	84	98	38	56	67

### Surrogate Legend

NBZ = Nitrobenzene-d5

FBP = 2-Fluorobiphenyl

TPHd14 = p-Terphenyl-d14

PHL = Phenol-d5

2FP = 2-Fluorophenol

TBP = 2,4,6-Tribromophenol

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# QC Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID:** MB 480-667700/6

**Matrix:** Water

**Analysis Batch:** 667700

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/02/23 00:05	1
Acetone	ND		5.0	3.0	ug/L			05/02/23 00:05	1
Benzene	ND		0.70	0.41	ug/L			05/02/23 00:05	1
Chlorobenzene	ND		1.0	0.75	ug/L			05/02/23 00:05	1
Ethylbenzene	ND		1.0	0.74	ug/L			05/02/23 00:05	1
Methylene Chloride	ND		1.0	0.44	ug/L			05/02/23 00:05	1
Tetrachloroethene	ND		1.0	0.36	ug/L			05/02/23 00:05	1
Toluene	ND		1.0	0.51	ug/L			05/02/23 00:05	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			05/02/23 00:05	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			05/02/23 00:05	1
Trichloroethene	ND		1.0	0.46	ug/L			05/02/23 00:05	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/02/23 00:05	1
Xylenes, Total	ND		2.0	0.66	ug/L			05/02/23 00:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		77 - 120		05/02/23 00:05	1
4-Bromofluorobenzene (Surr)	93		73 - 120		05/02/23 00:05	1
Toluene-d8 (Surr)	101		80 - 120		05/02/23 00:05	1

**Lab Sample ID:** LCS 480-667700/4

**Client Sample ID:** Lab Control Sample

**Matrix:** Water

**Analysis Batch:** 667700

**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	125	130		ug/L		104	57 - 140
Acetone	125	127		ug/L		101	56 - 142
Benzene	25.0	25.3		ug/L		101	71 - 124
Chlorobenzene	25.0	24.5		ug/L		98	80 - 120
Ethylbenzene	25.0	24.1		ug/L		96	77 - 123
Methylene Chloride	25.0	26.4		ug/L		106	75 - 124
Tetrachloroethene	25.0	24.1		ug/L		97	74 - 122
Toluene	25.0	24.3		ug/L		97	80 - 122
1,1-Dichloroethane	25.0	24.5		ug/L		98	77 - 120
trans-1,2-Dichloroethene	25.0	25.6		ug/L		102	73 - 127
Trichloroethene	25.0	25.2		ug/L		101	74 - 123
Vinyl chloride	25.0	22.8		ug/L		91	65 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		77 - 120
4-Bromofluorobenzene (Surr)	98		73 - 120
Toluene-d8 (Surr)	100		80 - 120

**Lab Sample ID:** MB 480-668038/8

**Client Sample ID:** Method Blank

**Matrix:** Water

**Analysis Batch:** 668038

**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	1.3	ug/L			05/04/23 00:49	1

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# QC Sample Results

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID:** MB 480-668038/8

**Matrix:** Water

**Analysis Batch:** 668038

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND				5.0	3.0	ug/L			05/04/23 00:49	1
Benzene	ND				0.70	0.41	ug/L			05/04/23 00:49	1
Chlorobenzene	ND				1.0	0.75	ug/L			05/04/23 00:49	1
Ethylbenzene	ND				1.0	0.74	ug/L			05/04/23 00:49	1
Methylene Chloride	ND				1.0	0.44	ug/L			05/04/23 00:49	1
Tetrachloroethene	ND				1.0	0.36	ug/L			05/04/23 00:49	1
Toluene	ND				1.0	0.51	ug/L			05/04/23 00:49	1
1,1-Dichloroethane	ND				1.0	0.38	ug/L			05/04/23 00:49	1
trans-1,2-Dichloroethene	ND				1.0	0.90	ug/L			05/04/23 00:49	1
Trichloroethene	ND				1.0	0.46	ug/L			05/04/23 00:49	1
Vinyl chloride	ND				1.0	0.90	ug/L			05/04/23 00:49	1
Xylenes, Total	ND				2.0	0.66	ug/L			05/04/23 00:49	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		77 - 120				05/04/23 00:49	1
4-Bromofluorobenzene (Surr)	95		73 - 120				05/04/23 00:49	1
Toluene-d8 (Surr)	97		80 - 120				05/04/23 00:49	1

**Lab Sample ID:** LCS 480-668038/6

**Matrix:** Water

**Analysis Batch:** 668038

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	%Rec
2-Butanone (MEK)	125	156		125		ug/L		125	57 - 140	
Acetone	125	177		125		ug/L		141	56 - 142	
Benzene	25.0	27.6		25.0		ug/L		110	71 - 124	
Chlorobenzene	25.0	26.9		25.0		ug/L		108	80 - 120	
Ethylbenzene	25.0	27.2		25.0		ug/L		109	77 - 123	
Methylene Chloride	25.0	27.4		25.0		ug/L		110	75 - 124	
Tetrachloroethene	25.0	28.8		25.0		ug/L		115	74 - 122	
Toluene	25.0	27.3		25.0		ug/L		109	80 - 122	
1,1-Dichloroethane	25.0	26.6		25.0		ug/L		106	77 - 120	
trans-1,2-Dichloroethene	25.0	27.9		25.0		ug/L		112	73 - 127	
Trichloroethene	25.0	27.0		25.0		ug/L		108	74 - 123	
Vinyl chloride	25.0	25.1		25.0		ug/L		100	65 - 133	

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		77 - 120		
4-Bromofluorobenzene (Surr)	99		73 - 120		
Toluene-d8 (Surr)	98		80 - 120		

**Lab Sample ID:** MB 480-668098/7

**Matrix:** Water

**Analysis Batch:** 668098

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		ND		5.0	1.3	ug/L			05/04/23 10:36	1
Acetone	ND		ND		5.0	3.0	ug/L			05/04/23 10:36	1

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# QC Sample Results

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID:** MB 480-668098/7

**Matrix:** Water

**Analysis Batch:** 668098

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND				0.70	0.41	ug/L			05/04/23 10:36	1
Chlorobenzene	ND				1.0	0.75	ug/L			05/04/23 10:36	1
Ethylbenzene	ND				1.0	0.74	ug/L			05/04/23 10:36	1
Methylene Chloride	ND				1.0	0.44	ug/L			05/04/23 10:36	1
Tetrachloroethene	ND				1.0	0.36	ug/L			05/04/23 10:36	1
Toluene	ND				1.0	0.51	ug/L			05/04/23 10:36	1
1,1-Dichloroethane	ND				1.0	0.38	ug/L			05/04/23 10:36	1
trans-1,2-Dichloroethene	ND				1.0	0.90	ug/L			05/04/23 10:36	1
Trichloroethene	ND				1.0	0.46	ug/L			05/04/23 10:36	1
Vinyl chloride	ND				1.0	0.90	ug/L			05/04/23 10:36	1
Xylenes, Total	ND				2.0	0.66	ug/L			05/04/23 10:36	1
<hr/>											
Surrogate	MB	MB	%Recovery	Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120							05/04/23 10:36	1
4-Bromofluorobenzene (Surr)	101		73 - 120							05/04/23 10:36	1
Toluene-d8 (Surr)	95		80 - 120							05/04/23 10:36	1

**Lab Sample ID:** LCS 480-668098/5

**Matrix:** Water

**Analysis Batch:** 668098

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spikes	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	
	Added	Result	Qualifier							
2-Butanone (MEK)	125	130				ug/L		104	57 - 140	
Acetone	125	140				ug/L		112	56 - 142	
Benzene	25.0	25.2				ug/L		101	71 - 124	
Chlorobenzene	25.0	24.3				ug/L		97	80 - 120	
Ethylbenzene	25.0	25.1				ug/L		100	77 - 123	
Methylene Chloride	25.0	24.3				ug/L		97	75 - 124	
Tetrachloroethene	25.0	26.2				ug/L		105	74 - 122	
Toluene	25.0	26.0				ug/L		104	80 - 122	
1,1-Dichloroethane	25.0	25.1				ug/L		100	77 - 120	
trans-1,2-Dichloroethene	25.0	24.0				ug/L		96	73 - 127	
Trichloroethene	25.0	25.9				ug/L		104	74 - 123	
Vinyl chloride	25.0	25.8				ug/L		103	65 - 133	
<hr/>										
Surrogate	LCS	LCS	%Recovery	Qualifier	Limits			%Rec	Limits	
1,2-Dichloroethane-d4 (Surr)	100	77 - 120								
4-Bromofluorobenzene (Surr)	98	73 - 120								
Toluene-d8 (Surr)	98	80 - 120								

**Lab Sample ID:** 480-208361-3 MS

**Matrix:** Water

**Analysis Batch:** 668098

**Client Sample ID:** WG-7987-042823-KM-002  
**Prep Type:** Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Result	Qualifier	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier						
2-Butanone (MEK)	ND		125	145				ug/L		116	57 - 140
Acetone	3.9	J	125	145				ug/L		113	56 - 142
Benzene	0.43	J	25.0	26.9				ug/L		106	71 - 124

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# QC Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 480-208361-3 MS**

**Client Sample ID: WG-7987-042823-KM-002**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 668098**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Chlorobenzene	ND		25.0	26.6		ug/L		107	80 - 120
Ethylbenzene	ND		25.0	27.5		ug/L		110	77 - 123
Methylene Chloride	ND		25.0	23.5		ug/L		94	75 - 124
Tetrachloroethene	ND		25.0	28.7		ug/L		115	74 - 122
Toluene	0.53	J	25.0	28.5		ug/L		112	80 - 122
1,1-Dichloroethane	ND		25.0	26.0		ug/L		104	77 - 120
trans-1,2-Dichloroethene	ND		25.0	23.9		ug/L		96	73 - 127
Trichloroethene	0.81	J	25.0	28.2		ug/L		109	74 - 123
Vinyl chloride	ND		25.0	27.8		ug/L		111	65 - 133
<b>Surrogate</b>		<b>MS Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>					
1,2-Dichloroethane-d4 (Surr)	95			77 - 120					
4-Bromofluorobenzene (Surr)	103			73 - 120					
Toluene-d8 (Surr)	97			80 - 120					

**Lab Sample ID: 480-208361-3 MSD**

**Client Sample ID: WG-7987-042823-KM-002**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 668098**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
2-Butanone (MEK)	ND		125	154		ug/L		123	57 - 140	6	20
Acetone	3.9	J	125	163		ug/L		127	56 - 142	11	15
Benzene	0.43	J	25.0	27.0		ug/L		106	71 - 124	0	13
Chlorobenzene	ND		25.0	25.9		ug/L		104	80 - 120	3	25
Ethylbenzene	ND		25.0	27.7		ug/L		111	77 - 123	1	15
Methylene Chloride	ND		25.0	24.2		ug/L		97	75 - 124	3	15
Tetrachloroethene	ND		25.0	28.5		ug/L		114	74 - 122	1	20
Toluene	0.53	J	25.0	27.9		ug/L		110	80 - 122	2	15
1,1-Dichloroethane	ND		25.0	26.2		ug/L		105	77 - 120	1	20
trans-1,2-Dichloroethene	ND		25.0	25.2		ug/L		101	73 - 127	5	20
Trichloroethene	0.81	J	25.0	28.6		ug/L		111	74 - 123	2	16
Vinyl chloride	ND		25.0	28.1		ug/L		113	65 - 133	1	15
<b>Surrogate</b>		<b>MSD Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>							
1,2-Dichloroethane-d4 (Surr)	94			77 - 120							
4-Bromofluorobenzene (Surr)	102			73 - 120							
Toluene-d8 (Surr)	97			80 - 120							

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 480-667747/1-A**

**Client Sample ID: Method Blank**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 667939**

**Prep Batch: 667747**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10	0.40	ug/L		05/02/23 09:35	05/03/23 14:47	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/02/23 09:35	05/03/23 14:47	1
2,4-Dimethylphenol	ND		10	0.50	ug/L		05/02/23 09:35	05/03/23 14:47	1

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# QC Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** MB 480-667747/1-A

**Matrix:** Water

**Analysis Batch:** 667939

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 667747

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	ND		10	0.40	ug/L		05/02/23 09:35	05/03/23 14:47	1
4-Methylphenol	ND		10	0.36	ug/L		05/02/23 09:35	05/03/23 14:47	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		05/02/23 09:35	05/03/23 14:47	1
Naphthalene	ND		10	0.76	ug/L		05/02/23 09:35	05/03/23 14:47	1
Phenol	ND		10	0.39	ug/L		05/02/23 09:35	05/03/23 14:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	73		46 - 120	05/02/23 09:35	05/03/23 14:47	1
2-Fluorobiphenyl	84		48 - 120	05/02/23 09:35	05/03/23 14:47	1
p-Terphenyl-d14	98		60 - 148	05/02/23 09:35	05/03/23 14:47	1
Phenol-d5	38		22 - 120	05/02/23 09:35	05/03/23 14:47	1
2-Fluorophenol	56		35 - 120	05/02/23 09:35	05/03/23 14:47	1
2,4,6-Tribromophenol	67		41 - 120	05/02/23 09:35	05/03/23 14:47	1

**Lab Sample ID:** LCS 480-667747/2-A

**Matrix:** Water

**Analysis Batch:** 667939

**Client Sample ID:** Lab Control Sample

**Prep Type:** Total/NA

**Prep Batch:** 667747

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichlorobenzene	32.0	27.7		ug/L		86	45 - 120
1,4-Dichlorobenzene	32.0	27.4		ug/L		86	42 - 120
2,4-Dimethylphenol	32.0	27.0		ug/L		85	47 - 120
2-Methylphenol	32.0	29.6		ug/L		93	39 - 120
4-Methylphenol	32.0	28.6		ug/L		90	29 - 131
Di-n-octyl phthalate	32.0	30.9		ug/L		97	63 - 140
Naphthalene	32.0	29.1		ug/L		91	57 - 120
Phenol	32.0	21.8		ug/L		68	17 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	80		46 - 120
2-Fluorobiphenyl	91		48 - 120
p-Terphenyl-d14	104		60 - 148
Phenol-d5	59		22 - 120
2-Fluorophenol	72		35 - 120
2,4,6-Tribromophenol	105		41 - 120

**Lab Sample ID:** LCSD 480-667747/3-A

**Matrix:** Water

**Analysis Batch:** 667939

**Client Sample ID:** Lab Control Sample Dup

**Prep Type:** Total/NA

**Prep Batch:** 667747

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichlorobenzene	32.0	27.4		ug/L		85	45 - 120	1	29
1,4-Dichlorobenzene	32.0	26.7		ug/L		83	42 - 120	3	36
2,4-Dimethylphenol	32.0	26.7		ug/L		84	47 - 120	1	42
2-Methylphenol	32.0	28.4		ug/L		89	39 - 120	4	27
4-Methylphenol	32.0	26.8		ug/L		84	29 - 131	7	24
Di-n-octyl phthalate	32.0	30.8		ug/L		96	63 - 140	0	16
Naphthalene	32.0	28.9		ug/L		90	57 - 120	1	29

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# QC Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 480-667747/3-A**

**Matrix: Water**

**Analysis Batch: 667939**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 667747**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit ug/L	D	%Rec Limits	RPD RPD	RPD Limit
Phenol	32.0	21.3			67	17 - 120	2	34
<b>Surrogate</b>								
Surrogate	%Recovery	LCSD Qualifier	LCSD Limits					
Nitrobenzene-d5	77		46 - 120					
2-Fluorobiphenyl	89		48 - 120					
p-Terphenyl-d14	102		60 - 148					
Phenol-d5	56		22 - 120					
2-Fluorophenol	71		35 - 120					
2,4,6-Tribromophenol	100		41 - 120					

**Lab Sample ID: 480-208361-3 MS**

**Matrix: Water**

**Analysis Batch: 667939**

**Client Sample ID: WG-7987-042823-KM-002**

**Prep Type: Total/NA**

**Prep Batch: 667747**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit ug/L	D	%Rec Limits	
1,2-Dichlorobenzene	ND		32.0	26.9			84	48 - 120	
1,4-Dichlorobenzene	ND		32.0	27.3			85	32 - 150	
2,4-Dimethylphenol	4.3 J		32.0	32.0			87	39 - 130	
2-Methylphenol	13		32.0	42.5			91	46 - 120	
4-Methylphenol	8.3 J		32.0	36.2			87	36 - 120	
Di-n-octyl phthalate	ND		32.0	29.6			93	16 - 150	
Naphthalene	ND		32.0	29.1			91	45 - 120	
Phenol	28		32.0	51.4			73	16 - 120	
<b>Surrogate</b>									
Surrogate	%Recovery	MS Qualifier	MS Limits						
Nitrobenzene-d5	78		46 - 120						
2-Fluorobiphenyl	92		48 - 120						
p-Terphenyl-d14	96		60 - 148						
Phenol-d5	52		22 - 120						
2-Fluorophenol	67		35 - 120						
2,4,6-Tribromophenol	100		41 - 120						

**Lab Sample ID: 480-208361-3 MSD**

**Matrix: Water**

**Analysis Batch: 667939**

**Client Sample ID: WG-7987-042823-KM-002**

**Prep Type: Total/NA**

**Prep Batch: 667747**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit ug/L	D	%Rec Limits		
1,2-Dichlorobenzene	ND		32.0	24.2			76	48 - 120	11	29
1,4-Dichlorobenzene	ND		32.0	23.2			72	32 - 150	16	36
2,4-Dimethylphenol	4.3 J		32.0	30.5			82	39 - 130	5	42
2-Methylphenol	13		32.0	39.8			82	46 - 120	6	27
4-Methylphenol	8.3 J		32.0	34.3			81	36 - 120	5	24
Di-n-octyl phthalate	ND		32.0	29.5			92	16 - 150	0	16
Naphthalene	ND		32.0	25.8			81	45 - 120	12	29
Phenol	28		32.0	49.9			68	16 - 120	3	34
<b>Surrogate</b>										
Surrogate	%Recovery	MSD Qualifier	MSD Limits							
Nitrobenzene-d5	70		46 - 120							

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# QC Sample Results

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 480-208361-3 MSD

Client Sample ID: WG-7987-042823-KM-002

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 667939

Prep Batch: 667747

Surrogate	MSD	MSD	
	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	85		48 - 120
p-Terphenyl-d14	94		60 - 148
Phenol-d5	49		22 - 120
2-Fluorophenol	60		35 - 120
2,4,6-Tribromophenol	101		41 - 120

# QC Association Summary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

## GC/MS VOA

### Analysis Batch: 667700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208361-1	TB-7987-042823-KM	Total/NA	Water	8260C	
MB 480-667700/6	Method Blank	Total/NA	Water	8260C	
LCS 480-667700/4	Lab Control Sample	Total/NA	Water	8260C	

### Analysis Batch: 668038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208361-2	WG-7987-042823-KM-001	Total/NA	Water	8260C	
480-208361-4	WG-7987-042823-KM-003	Total/NA	Water	8260C	
480-208361-5	WG-7987-042823-KM-004	Total/NA	Water	8260C	
480-208361-6	WG-7987-042823-KM-005	Total/NA	Water	8260C	
480-208361-7	WG-7987-042823-KM-006	Total/NA	Water	8260C	
480-208361-8	WG-7987-042823-KM-007	Total/NA	Water	8260C	
MB 480-668038/8	Method Blank	Total/NA	Water	8260C	
LCS 480-668038/6	Lab Control Sample	Total/NA	Water	8260C	

### Analysis Batch: 668098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208361-3	WG-7987-042823-KM-002	Total/NA	Water	8260C	
MB 480-668098/7	Method Blank	Total/NA	Water	8260C	
LCS 480-668098/5	Lab Control Sample	Total/NA	Water	8260C	
480-208361-3 MS	WG-7987-042823-KM-002	Total/NA	Water	8260C	
480-208361-3 MSD	WG-7987-042823-KM-002	Total/NA	Water	8260C	

## GC/MS Semi VOA

### Prep Batch: 667747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208361-2	WG-7987-042823-KM-001	Total/NA	Water	3510C	
480-208361-3	WG-7987-042823-KM-002	Total/NA	Water	3510C	
480-208361-4 - DL	WG-7987-042823-KM-003	Total/NA	Water	3510C	
480-208361-4	WG-7987-042823-KM-003	Total/NA	Water	3510C	
480-208361-5 - DL	WG-7987-042823-KM-004	Total/NA	Water	3510C	
480-208361-5	WG-7987-042823-KM-004	Total/NA	Water	3510C	
480-208361-6	WG-7987-042823-KM-005	Total/NA	Water	3510C	
480-208361-7 - DL	WG-7987-042823-KM-006	Total/NA	Water	3510C	
480-208361-7	WG-7987-042823-KM-006	Total/NA	Water	3510C	
MB 480-667747/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-667747/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 480-667747/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
480-208361-3 MS	WG-7987-042823-KM-002	Total/NA	Water	3510C	
480-208361-3 MSD	WG-7987-042823-KM-002	Total/NA	Water	3510C	

### Analysis Batch: 667939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208361-2	WG-7987-042823-KM-001	Total/NA	Water	8270D	667747
480-208361-3	WG-7987-042823-KM-002	Total/NA	Water	8270D	667747
480-208361-4	WG-7987-042823-KM-003	Total/NA	Water	8270D	667747
480-208361-5	WG-7987-042823-KM-004	Total/NA	Water	8270D	667747
MB 480-667747/1-A	Method Blank	Total/NA	Water	8270D	667747
LCS 480-667747/2-A	Lab Control Sample	Total/NA	Water	8270D	667747
LCSD 480-667747/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	667747

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# QC Association Summary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

## GC/MS Semi VOA (Continued)

### Analysis Batch: 667939 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208361-3 MS	WG-7987-042823-KM-002	Total/NA	Water	8270D	667747
480-208361-3 MSD	WG-7987-042823-KM-002	Total/NA	Water	8270D	667747

### Analysis Batch: 667943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208361-6	WG-7987-042823-KM-005	Total/NA	Water	8270D	667747
480-208361-7	WG-7987-042823-KM-006	Total/NA	Water	8270D	667747

### Analysis Batch: 668184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208361-4 - DL	WG-7987-042823-KM-003	Total/NA	Water	8270D	667747
480-208361-5 - DL	WG-7987-042823-KM-004	Total/NA	Water	8270D	667747
480-208361-7 - DL	WG-7987-042823-KM-006	Total/NA	Water	8270D	667747

# Lab Chronicle

Client: GHD Services Inc.  
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

**Client Sample ID: TB-7987-042823-KM**  
Date Collected: 04/28/23 00:00  
Date Received: 04/28/23 12:45

**Lab Sample ID: 480-208361-1**  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	667700	CR	EET BUF	05/02/23 00:28

**Client Sample ID: WG-7987-042823-KM-001**  
Date Collected: 04/28/23 08:50  
Date Received: 04/28/23 12:45

**Lab Sample ID: 480-208361-2**  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		4	668038	AXK	EET BUF	05/04/23 01:11
Total/NA	Prep	3510C			667747	JMP	EET BUF	05/02/23 09:35
Total/NA	Analysis	8270D		10	667939	JMM	EET BUF	05/03/23 20:49

**Client Sample ID: WG-7987-042823-KM-002**  
Date Collected: 04/28/23 09:30  
Date Received: 04/28/23 12:45

**Lab Sample ID: 480-208361-3**  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	668098	CR	EET BUF	05/04/23 12:17
Total/NA	Prep	3510C			667747	JMP	EET BUF	05/02/23 09:35
Total/NA	Analysis	8270D		1	667939	JMM	EET BUF	05/03/23 17:06

**Client Sample ID: WG-7987-042823-KM-003**  
Date Collected: 04/28/23 10:15  
Date Received: 04/28/23 12:45

**Lab Sample ID: 480-208361-4**  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		4	668038	AXK	EET BUF	05/04/23 01:55
Total/NA	Prep	3510C			667747	JMP	EET BUF	05/02/23 09:35
Total/NA	Analysis	8270D		1	667939	JMM	EET BUF	05/03/23 21:17
Total/NA	Prep	3510C	DL		667747	JMP	EET BUF	05/02/23 09:35
Total/NA	Analysis	8270D	DL	5	668184	JMM	EET BUF	05/05/23 02:52

**Client Sample ID: WG-7987-042823-KM-004**  
Date Collected: 04/28/23 10:15  
Date Received: 04/28/23 12:45

**Lab Sample ID: 480-208361-5**  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		5	668038	AXK	EET BUF	05/04/23 02:17
Total/NA	Prep	3510C			667747	JMP	EET BUF	05/02/23 09:35
Total/NA	Analysis	8270D		1	667939	JMM	EET BUF	05/03/23 21:44
Total/NA	Prep	3510C	DL		667747	JMP	EET BUF	05/02/23 09:35
Total/NA	Analysis	8270D	DL	5	668184	JMM	EET BUF	05/05/23 03:20

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# Lab Chronicle

Client: GHD Services Inc.

Job ID: 480-208361-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: WG-7987-042823-KM-005**

**Lab Sample ID: 480-208361-6**

**Matrix: Water**

Date Collected: 04/28/23 10:50

Date Received: 04/28/23 12:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	668038	AXK	EET BUF	05/04/23 02:39
Total/NA	Prep	3510C			667747	JMP	EET BUF	05/02/23 09:35
Total/NA	Analysis	8270D		5	667943	JMM	EET BUF	05/04/23 00:03

**Client Sample ID: WG-7987-042823-KM-006**

**Lab Sample ID: 480-208361-7**

**Matrix: Water**

Date Collected: 04/28/23 11:30

Date Received: 04/28/23 12:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		5	668038	AXK	EET BUF	05/04/23 03:01
Total/NA	Prep	3510C			667747	JMP	EET BUF	05/02/23 09:35
Total/NA	Analysis	8270D		5	667943	JMM	EET BUF	05/04/23 00:31
Total/NA	Prep	3510C	DL		667747	JMP	EET BUF	05/02/23 09:35
Total/NA	Analysis	8270D	DL	100	668184	JMM	EET BUF	05/05/23 03:48

**Client Sample ID: WG-7987-042823-KM-007**

**Lab Sample ID: 480-208361-8**

**Matrix: Water**

Date Collected: 04/28/23 12:10

Date Received: 04/28/23 12:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		2	668038	AXK	EET BUF	05/04/23 03:22

**Laboratory References:**

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Eurofins Buffalo

# Accreditation/Certification Summary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

## Laboratory: Eurofins Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-24

1

2

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## Method Summary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	EET BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET BUF
5030C	Purge and Trap	SW846	EET BUF

### Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Sample Summary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-208361-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-208361-1	TB-7987-042823-KM	Water	04/28/23 00:00	04/28/23 12:45
480-208361-2	WG-7987-042823-KM-001	Water	04/28/23 08:50	04/28/23 12:45
480-208361-3	WG-7987-042823-KM-002	Water	04/28/23 09:30	04/28/23 12:45
480-208361-4	WG-7987-042823-KM-003	Water	04/28/23 10:15	04/28/23 12:45
480-208361-5	WG-7987-042823-KM-004	Water	04/28/23 10:15	04/28/23 12:45
480-208361-6	WG-7987-042823-KM-005	Water	04/28/23 10:50	04/28/23 12:45
480-208361-7	WG-7987-042823-KM-006	Water	04/28/23 11:30	04/28/23 12:45
480-208361-8	WG-7987-042823-KM-007	Water	04/28/23 12:10	04/28/23 12:45



## Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 480-208361-1

**Login Number: 208361**

**List Source: Eurofins Buffalo**

**List Number: 1**

**Creator: Yeager, Brian A**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GHD
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Ms. Sue Scrocchi  
GHD Services Inc.  
2055 Niagara Falls Blvd., Suite 3  
Niagara Falls, New York 14304

Generated 6/25/2023 6:40:50 AM

## JOB DESCRIPTION

7987, Gratwick Riverside Park

## JOB NUMBER

480-210025-1

# Eurofins Buffalo

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

## Authorization



Generated  
6/25/2023 6:40:50 AM

Authorized for release by  
Denise Heckler, Project Manager II  
[Denise.Heckler@et.eurofinsus.com](mailto:Denise.Heckler@et.eurofinsus.com)  
(330)966-9477

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# Definitions/Glossary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-210025-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
D	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: GHD Services Inc.  
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-210025-1

**Job ID: 480-210025-1**

**Laboratory: Eurofins Buffalo**

## Narrative

**Job Narrative  
480-210025-1**

## Comments

No additional comments.

## Receipt

The sample was received on 6/16/2023 11:00 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 7.8° C.

## GC/MS Semi VOA

Method 8270D: The following sample required a dilution due to the abundance of target analytes: WG-7987-061623-KM-008 (480-210025-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Organic Prep

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 480-673780.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-210025-1

**Client Sample ID: WG-7987-061623-KM-008**

**Lab Sample ID: 480-210025-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	2.7	J	10	0.40	ug/L	1		8270D	Total/NA
1,4-Dichlorobenzene	51		10	0.46	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	10		10	0.50	ug/L	1		8270D	Total/NA
2-Methylphenol	11		10	0.40	ug/L	1		8270D	Total/NA
4-Methylphenol	28		10	0.36	ug/L	1		8270D	Total/NA
Phenol	470	E	10	0.39	ug/L	1		8270D	Total/NA
1,4-Dichlorobenzene - DL	46	J	200	9.2	ug/L	20		8270D	Total/NA
2,4-Dimethylphenol - DL	11	J	200	10	ug/L	20		8270D	Total/NA
2-Methylphenol - DL	8.9	J	200	8.0	ug/L	20		8270D	Total/NA
4-Methylphenol - DL	21	J	200	7.2	ug/L	20		8270D	Total/NA
Phenol - DL	610		200	7.8	ug/L	20		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Buffalo

# Client Sample Results

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-210025-1

**Client Sample ID: WG-7987-061623-KM-008**

**Lab Sample ID: 480-210025-1**

**Matrix: Water**

Date Collected: 06/16/23 09:40

Date Received: 06/16/23 11:00

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	2.7	J	10	0.40	ug/L		06/20/23 16:09	06/21/23 15:32	1
1,4-Dichlorobenzene	51		10	0.46	ug/L		06/20/23 16:09	06/21/23 15:32	1
2,4-Dimethylphenol	10		10	0.50	ug/L		06/20/23 16:09	06/21/23 15:32	1
2-Methylphenol	11		10	0.40	ug/L		06/20/23 16:09	06/21/23 15:32	1
4-Methylphenol	28		10	0.36	ug/L		06/20/23 16:09	06/21/23 15:32	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		06/20/23 16:09	06/21/23 15:32	1
Naphthalene	ND		10	0.76	ug/L		06/20/23 16:09	06/21/23 15:32	1
Phenol	470	E	10	0.39	ug/L		06/20/23 16:09	06/21/23 15:32	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Nitrobenzene-d5	56		46 - 120				06/20/23 16:09	06/21/23 15:32	1
2-Fluorobiphenyl	84		48 - 120				06/20/23 16:09	06/21/23 15:32	1
p-Terphenyl-d14	84		60 - 148				06/20/23 16:09	06/21/23 15:32	1
Phenol-d5	43		22 - 120				06/20/23 16:09	06/21/23 15:32	1
2-Fluorophenol	61		35 - 120				06/20/23 16:09	06/21/23 15:32	1
2,4,6-Tribromophenol	87		41 - 120				06/20/23 16:09	06/21/23 15:32	1

## Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		200	8.0	ug/L		06/20/23 16:09	06/22/23 15:13	20
1,4-Dichlorobenzene	46	J	200	9.2	ug/L		06/20/23 16:09	06/22/23 15:13	20
2,4-Dimethylphenol	11	J	200	10	ug/L		06/20/23 16:09	06/22/23 15:13	20
2-Methylphenol	8.9	J	200	8.0	ug/L		06/20/23 16:09	06/22/23 15:13	20
4-Methylphenol	21	J	200	7.2	ug/L		06/20/23 16:09	06/22/23 15:13	20
Di-n-octyl phthalate	ND		200	9.4	ug/L		06/20/23 16:09	06/22/23 15:13	20
Naphthalene	ND		200	15	ug/L		06/20/23 16:09	06/22/23 15:13	20
Phenol	610		200	7.8	ug/L		06/20/23 16:09	06/22/23 15:13	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Nitrobenzene-d5	64		46 - 120				06/20/23 16:09	06/22/23 15:13	20
2-Fluorobiphenyl	74		48 - 120				06/20/23 16:09	06/22/23 15:13	20
p-Terphenyl-d14	74		60 - 148				06/20/23 16:09	06/22/23 15:13	20
Phenol-d5	40		22 - 120				06/20/23 16:09	06/22/23 15:13	20
2-Fluorophenol	50		35 - 120				06/20/23 16:09	06/22/23 15:13	20
2,4,6-Tribromophenol	95		41 - 120				06/20/23 16:09	06/22/23 15:13	20

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# Surrogate Summary

Client: GHD Services Inc.

Job ID: 480-210025-1

Project/Site: 7987, Gratwick Riverside Park

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	NBZ (46-120)	FBP (48-120)	TPHd14 (60-148)	PHL (22-120)	2FP (35-120)	TBP (41-120)		
480-210025-1	WG-7987-061623-KM-008	56	84	84	43	61	87		
480-210025-1 - DL	WG-7987-061623-KM-008	64	74	74	40	50	95		
LCS 480-673780/2-A	Lab Control Sample	62	62	72	41	50	68		
LCSD 480-673780/3-A	Lab Control Sample Dup	62	64	73	38	48	70		
MB 480-673780/1-A	Method Blank	69	76	85	42	57	59		

### Surrogate Legend

NBZ = Nitrobenzene-d5

FBP = 2-Fluorobiphenyl

TPHd14 = p-Terphenyl-d14

PHL = Phenol-d5

2FP = 2-Fluorophenol

TBP = 2,4,6-Tribromophenol

# QC Sample Results

Client: GHD Services Inc.

Job ID: 480-210025-1

Project/Site: 7987, Gratwick Riverside Park

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 480-673780/1-A**

**Matrix: Water**

**Analysis Batch: 673814**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 673780**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2-Dichlorobenzene	ND		10	0.40	ug/L		06/20/23 16:09	06/21/23 12:46	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		06/20/23 16:09	06/21/23 12:46	1
2,4-Dimethylphenol	ND		10	0.50	ug/L		06/20/23 16:09	06/21/23 12:46	1
2-Methylphenol	ND		10	0.40	ug/L		06/20/23 16:09	06/21/23 12:46	1
4-Methylphenol	ND		10	0.36	ug/L		06/20/23 16:09	06/21/23 12:46	1
Di-n-octyl phthalate	ND		10	0.47	ug/L		06/20/23 16:09	06/21/23 12:46	1
Naphthalene	ND		10	0.76	ug/L		06/20/23 16:09	06/21/23 12:46	1
Phenol	ND		10	0.39	ug/L		06/20/23 16:09	06/21/23 12:46	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5	69		46 - 120	06/20/23 16:09	06/21/23 12:46	1
2-Fluorobiphenyl	76		48 - 120	06/20/23 16:09	06/21/23 12:46	1
p-Terphenyl-d14	85		60 - 148	06/20/23 16:09	06/21/23 12:46	1
Phenol-d5	42		22 - 120	06/20/23 16:09	06/21/23 12:46	1
2-Fluorophenol	57		35 - 120	06/20/23 16:09	06/21/23 12:46	1
2,4,6-Tribromophenol	59		41 - 120	06/20/23 16:09	06/21/23 12:46	1

**Lab Sample ID: LCS 480-673780/2-A**

**Matrix: Water**

**Analysis Batch: 673814**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 673780**

Analyte	Spike	LCS	LCS	D	%Rec	%Rec
	Added	Result	Qualifier			
1,2-Dichlorobenzene	32.0	19.7		ug/L	62	45 - 120
1,4-Dichlorobenzene	32.0	19.2		ug/L	60	42 - 120
2,4-Dimethylphenol	32.0	19.6		ug/L	61	47 - 120
2-Methylphenol	32.0	22.5		ug/L	70	39 - 120
4-Methylphenol	32.0	22.1		ug/L	69	29 - 131
Di-n-octyl phthalate	32.0	28.8		ug/L	90	63 - 140
Naphthalene	32.0	20.8		ug/L	65	57 - 120
Phenol	32.0	15.5		ug/L	48	17 - 120

Surrogate	LCS	LCS	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5	62		46 - 120	06/20/23 16:09	06/21/23 12:46	1
2-Fluorobiphenyl	62		48 - 120	06/20/23 16:09	06/21/23 12:46	1
p-Terphenyl-d14	72		60 - 148	06/20/23 16:09	06/21/23 12:46	1
Phenol-d5	41		22 - 120	06/20/23 16:09	06/21/23 12:46	1
2-Fluorophenol	50		35 - 120	06/20/23 16:09	06/21/23 12:46	1
2,4,6-Tribromophenol	68		41 - 120	06/20/23 16:09	06/21/23 12:46	1

**Lab Sample ID: LCSD 480-673780/3-A**

**Matrix: Water**

**Analysis Batch: 673814**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 673780**

Analyte	Spike	LCSD	LCSD	D	%Rec	%Rec	RPD	
	Added	Result	Qualifier					
1,2-Dichlorobenzene	32.0	19.0		ug/L	59	45 - 120	4	29
1,4-Dichlorobenzene	32.0	18.8		ug/L	59	42 - 120	2	36
2,4-Dimethylphenol	32.0	20.2		ug/L	63	47 - 120	3	42
2-Methylphenol	32.0	21.7		ug/L	68	39 - 120	3	27

Eurofins Buffalo

# QC Sample Results

Client: GHD Services Inc.

Job ID: 480-210025-1

Project/Site: 7987, Gratwick Riverside Park

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** LCSD 480-673780/3-A

**Client Sample ID:** Lab Control Sample Dup

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 673814

**Prep Batch:** 673780

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
4-Methylphenol	32.0	21.6		ug/L		67	29 - 131	2	24
Di-n-octyl phthalate	32.0	28.9		ug/L		90	63 - 140	0	16
Naphthalene	32.0	20.9		ug/L		65	57 - 120	1	29
Phenol	32.0	14.7		ug/L		46	17 - 120	5	34

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>Nitrobenzene-d5</i>	62		46 - 120
<i>2-Fluorobiphenyl</i>	64		48 - 120
<i>p-Terphenyl-d14</i>	73		60 - 148
<i>Phenol-d5</i>	38		22 - 120
<i>2-Fluorophenol</i>	48		35 - 120
<i>2,4,6-Tribromophenol</i>	70		41 - 120

# QC Association Summary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-210025-1

## GC/MS Semi VOA

### Prep Batch: 673780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-210025-1	WG-7987-061623-KM-008	Total/NA	Water	3510C	
480-210025-1 - DL	WG-7987-061623-KM-008	Total/NA	Water	3510C	
MB 480-673780/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-673780/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 480-673780/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 673814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-210025-1	WG-7987-061623-KM-008	Total/NA	Water	8270D	673780
MB 480-673780/1-A	Method Blank	Total/NA	Water	8270D	673780
LCS 480-673780/2-A	Lab Control Sample	Total/NA	Water	8270D	673780
LCSD 480-673780/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	673780

### Analysis Batch: 674000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-210025-1 - DL	WG-7987-061623-KM-008	Total/NA	Water	8270D	673780

# Lab Chronicle

Client: GHD Services Inc.

Job ID: 480-210025-1

Project/Site: 7987, Gratwick Riverside Park

**Client Sample ID: WG-7987-061623-KM-008**

**Lab Sample ID: 480-210025-1**

**Matrix: Water**

**Date Collected: 06/16/23 09:40**

**Date Received: 06/16/23 11:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			673780	SJM	EET BUF	06/20/23 16:09
Total/NA	Analysis	8270D		1	673814	JMM	EET BUF	06/21/23 15:32
Total/NA	Prep	3510C	DL		673780	SJM	EET BUF	06/20/23 16:09
Total/NA	Analysis	8270D	DL	20	674000	JMM	EET BUF	06/22/23 15:13

**Laboratory References:**

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Accreditation/Certification Summary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-210025-1

## Laboratory: Eurofins Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-24

1

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Eurofins Buffalo

## Method Summary

Client: GHD Services Inc.

Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-210025-1

Method	Method Description	Protocol	Laboratory
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET BUF

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

## Sample Summary

Client: GHD Services Inc.  
Project/Site: 7987, Gratwick Riverside Park

Job ID: 480-210025-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-210025-1	WG-7987-061623-KM-008	Water	06/16/23 09:40	06/16/23 11:00

1

2

3

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11

12

13

14

15

# CHAIN OF CUSTODY RECORD

Address: 205 Niagara Falls Blvd  
Phone: 716 297-0150

COC NO.: 6111  
PAGE 1 OF

Fax:

Project No/Phase/Task Code:	007187		Laboratory Name:	Eurofins Test America	Lab Location:	Amherst NY
Project Name:	Griffick Park Annual Gwl Sampling		Lab Contact:		Carrier:	Hand Delivered
Project Location:	River Rd. N., Tonawanda		SAMPLE TYPE	ANALYSIS REQUESTED (See Back of COC for Definitions)		
GHD Chemistry Contact:	Sue Scroch;		SAMPLE ID	Matrix Code (see back of COC)	Grab (g) or Comp (c)	Filterd (Y/N)
Sampler(s):	K. Miller		DATE (mm/dd/yy)	TIME (hh:mm)		
PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)						
1	WIC-7987-000723-KM-008		6/16/23	0940	WIC	NX
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
TAT Required in business days (use separate COCs for different TATs):						
<input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> Other:						
RELINQUISHED BY		COMPANY	DATE	TIME	RECEIVED BY	COMPANY
1. <u>K2-</u>		<u>GHD</u>	<u>6/16/23</u>	<u>0955</u>	1. <u>Millow</u>	<u>TJ</u>
2.					2.	
3.					3.	

TAT Required in business days (use separate COCs for different TATs):

1 Day    2 Days    3 Days    1 Week    2 Week    Other:

Notes/ Special Requirements:

Temp 7.8 # LTC

TIME	DATE	COMPANY
<u>6/16/23 1146</u>		

Distribution: WHITE – Fully Executed Copy (CRA)      YELLOW – Receiving Laboratory Copy  
PINK – Shipper

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

## Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 480-210025-1

**Login Number: 210025**

**List Source: Eurofins Buffalo**

**List Number: 1**

**Creator: Yeager, Brian A**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GHD
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Michael W Gibbons  
N Tonawanda Water Works  
830 River Road  
North Tonawanda New York 14120

Generated 11/18/2022 10:03:33 AM

## JOB DESCRIPTION

North Tonawanda - WWTP (GRP)  
North Tonawanda WWTP (1,3,9)

## JOB NUMBER

480-203434-1

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## Definitions/Glossary

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

### Qualifiers

#### Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
%R	Listed under the "D" column to designate that the result is reported on a dry weight basis
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Job ID: 480-203434-1

### Laboratory: Eurofins Buffalo

#### Narrative

#### Job Narrative 480-203434-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/2/2022 10:32 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.3° C.

#### GC/MS VOA

Method 624.1: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: GRP-GRAB (480-203434-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### HPLC/IC

Method 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: GRP -COMP (480-203434-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### General Chemistry

Method SM 2320B: The method blank for 480-648901 contained total alkalinity above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method SM 2320B: The method blank for analytical batch 480-648901 contained total alkalinity above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Methods 335.4, 9012B: The continuing calibration blank (CCB) and method blank (MB) for analytical batch 480-649468 contained Cyanide, Total above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed: GRP-GRAB (480-203434-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Detection Summary

Client: N Tonawanda Water Works

Job ID: 480-203434-1

Project/Site: North Tonawanda - WWTP (GRP)

## **Client Sample ID: GRP -COMP**

## **Lab Sample ID: 480-203434-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	12		10		ug/L		1	625.1	Total/NA
2,4-Dimethylphenol	6.6		5.0		ug/L		1	625.1	Total/NA
Aluminum	0.20		0.20		mg/L		1	200.7 Rev 4.4	Total/NA
Barium	0.080		0.0020		mg/L		1	200.7 Rev 4.4	Total/NA
Iron	0.056		0.050		mg/L		1	200.7 Rev 4.4	Total/NA
Magnesium	1.7		0.20		mg/L		1	200.7 Rev 4.4	Total/NA
Manganese	0.0044		0.0030		mg/L		1	200.7 Rev 4.4	Total/NA
Sodium	229		1.0		mg/L		1	200.7 Rev 4.4	Total/NA
Chloride	358		1.4		mg/L		5	300.0	Total/NA
Sulfate	180		2.0		mg/L		5	300.0	Total/NA
Alkalinity, Total	63.5		5.0		mg/L		1	SM 2320B	Total/NA
Hardness as calcium carbonate	224		2.0		mg/L		1	SM 2340C	Total/NA
Total Dissolved Solids	924		10.0		mg/L		1	SM 2540C	Total/NA
Sulfide	2.8		1.0		mg/L		1	SM 4500 S2 F	Total/NA

## **Client Sample ID: GRP-GRAB**

## **Lab Sample ID: 480-203434-2**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	13		5.0		ug/L		4	624.1	Total/NA
Trichloroethene	17		5.0		ug/L		4	624.1	Total/NA
Xylenes, Total	19		10		ug/L		4	624.1	Total/NA
Total Kjeldahl Nitrogen	4.5		0.20		mg/L		1	351.2	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Buffalo

# Client Sample Results

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Client Sample ID: GRP -COMP

Date Collected: 11/02/22 08:00

Date Received: 11/02/22 10:32

## Lab Sample ID: 480-203434-1

Matrix: Water

### Method: 40CFR136A 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10		ug/L		11/08/22 08:34	11/09/22 13:54	1
<b>1,4-Dichlorobenzene</b>	<b>12</b>		10		ug/L		11/08/22 08:34	11/09/22 13:54	1
<b>2,4-Dimethylphenol</b>	<b>6.6</b>		5.0		ug/L		11/08/22 08:34	11/09/22 13:54	1
2-Methylphenol	ND		5.0		ug/L		11/08/22 08:34	11/09/22 13:54	1
4-Methylphenol	ND		5.0		ug/L		11/08/22 08:34	11/09/22 13:54	1
Di-n-octyl phthalate	ND		5.0		ug/L		11/08/22 08:34	11/09/22 13:54	1
Naphthalene	ND		5.0		ug/L		11/08/22 08:34	11/09/22 13:54	1
Phenol	ND		5.0		ug/L		11/08/22 08:34	11/09/22 13:54	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
2,4,6-Tribromophenol	106		52 - 151				11/08/22 08:34	11/09/22 13:54	1
2-Fluorobiphenyl	96		44 - 120				11/08/22 08:34	11/09/22 13:54	1
2-Fluorophenol	51		17 - 120				11/08/22 08:34	11/09/22 13:54	1
Nitrobenzene-d5	94		15 - 314				11/08/22 08:34	11/09/22 13:54	1
p-Terphenyl-d14	99		22 - 125				11/08/22 08:34	11/09/22 13:54	1
Phenol-d5	35		8 - 424				11/08/22 08:34	11/09/22 13:54	1

### Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Aluminum</b>	<b>0.20</b>		0.20		mg/L		11/07/22 10:02	11/09/22 22:46	1
Antimony	ND		0.020		mg/L		11/07/22 10:02	11/09/22 22:46	1
Arsenic	ND		0.015		mg/L		11/07/22 10:02	11/09/22 22:46	1
<b>Barium</b>	<b>0.080</b>		0.0020		mg/L		11/07/22 10:02	11/09/22 22:46	1
Beryllium	ND		0.0020		mg/L		11/07/22 10:02	11/09/22 22:46	1
Cadmium	ND		0.0020		mg/L		11/07/22 10:02	11/09/22 22:46	1
Chromium	ND		0.0040		mg/L		11/07/22 10:02	11/09/22 22:46	1
Copper	ND		0.010		mg/L		11/07/22 10:02	11/09/22 22:46	1
<b>Iron</b>	<b>0.056</b>		0.050		mg/L		11/07/22 10:02	11/09/22 22:46	1
Lead	ND		0.010		mg/L		11/07/22 10:02	11/09/22 22:46	1
<b>Magnesium</b>	<b>1.7</b>		0.20		mg/L		11/07/22 10:02	11/09/22 22:46	1
<b>Manganese</b>	<b>0.0044</b>		0.0030		mg/L		11/07/22 10:02	11/09/22 22:46	1
Nickel	ND		0.010		mg/L		11/07/22 10:02	11/09/22 22:46	1
Selenium	ND		0.025		mg/L		11/07/22 10:02	11/09/22 22:46	1
Silver	ND		0.0060		mg/L		11/07/22 10:02	11/09/22 22:46	1
<b>Sodium</b>	<b>229</b>		1.0		mg/L		11/07/22 10:02	11/09/22 22:46	1
Zinc	ND		0.010		mg/L		11/07/22 10:02	11/09/22 22:46	1

### Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		11/07/22 10:41	11/07/22 13:47	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride (MCAWW 300.0)</b>	<b>358</b>		1.4		mg/L			11/15/22 02:57	5
<b>Sulfate (MCAWW 300.0)</b>	<b>180</b>		2.0		mg/L			11/15/22 02:57	5
Nitrate as N (EPA 353.2)	ND		0.050		mg/L			11/02/22 21:12	1
<b>Alkalinity, Total (SM 2320B)</b>	<b>63.5</b>		5.0		mg/L			11/07/22 22:01	1
Alkalinity, Bicarbonate (SM 2320B)	ND		5.0		mg/L			11/07/22 22:01	1
<b>Hardness as calcium carbonate (SM 2340C)</b>	<b>224</b>		2.0		mg/L			11/17/22 12:05	1
<b>Total Dissolved Solids (SM 2540C)</b>	<b>924</b>		10.0		mg/L			11/09/22 11:40	1

Eurofins Buffalo

# Client Sample Results

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Client Sample ID: GRP -COMP

Date Collected: 11/02/22 08:00  
 Date Received: 11/02/22 10:32

Lab Sample ID: 480-203434-1

Matrix: Water

### General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SM 4500 S2 F)	2.8		1.0		mg/L			11/08/22 12:50	1

## Client Sample ID: GRP-GRAB

Date Collected: 11/02/22 08:05  
 Date Received: 11/02/22 10:32

Lab Sample ID: 480-203434-2

Matrix: Water

### Method: 40CFR136A 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			11/02/22 19:44	4
1,1-Dichloroethane	ND		5.0		ug/L			11/02/22 19:44	4
1,2-Dichloroethane	ND		5.0		ug/L			11/02/22 19:44	4
2-Butanone (MEK)	ND		25		ug/L			11/02/22 19:44	4
Acetone	ND		25		ug/L			11/02/22 19:44	4
Benzene	ND		5.0		ug/L			11/02/22 19:44	4
Chlorobenzene	ND		5.0		ug/L			11/02/22 19:44	4
Ethylbenzene	ND		5.0		ug/L			11/02/22 19:44	4
Methylene Chloride	ND		5.0		ug/L			11/02/22 19:44	4
Styrene	ND		5.0		ug/L			11/02/22 19:44	4
Tetrachloroethene	ND		5.0		ug/L			11/02/22 19:44	4
<b>Toluene</b>	<b>13</b>		5.0		ug/L			11/02/22 19:44	4
trans-1,2-Dichloroethene	ND		5.0		ug/L			11/02/22 19:44	4
<b>Trichloroethene</b>	<b>17</b>		5.0		ug/L			11/02/22 19:44	4
Vinyl chloride	ND		5.0		ug/L			11/02/22 19:44	4
<b>Xylenes, Total</b>	<b>19</b>		10		ug/L			11/02/22 19:44	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		68 - 130		11/02/22 19:44	4
4-Bromofluorobenzene (Surr)	101		76 - 123		11/02/22 19:44	4
Dibromofluoromethane (Surr)	101		75 - 123		11/02/22 19:44	4
Toluene-d8 (Surr)	96		77 - 120		11/02/22 19:44	4

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (MCAWW 335.4)	ND		0.010		mg/L			11/10/22 15:42	1
<b>Total Kjeldahl Nitrogen (MCAWW 351.2)</b>	<b>4.5</b>		0.20		mg/L		11/09/22 10:55	11/10/22 09:27	1

# Surrogate Summary

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (68-130)	BFB (76-123)	DBFM (75-123)	TOL (77-120)
480-203434-2	GRP-GRAB	102	101	101	96
LCS 480-648101/6	Lab Control Sample	106	100	100	98
MB 480-648101/8	Method Blank	101	101	99	96

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)  
 BFB = 4-Bromofluorobenzene (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 TOL = Toluene-d8 (Surr)

## Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (52-151)	FBP (44-120)	2FP (17-120)	NBZ (15-314)	TPHd14 (22-125)	PHL (8-424)
480-203434-1	GRP -COMP	106	96	51	94	99	35
LCS 480-648887/2-A	Lab Control Sample	107	97	53	91	113	39
LCSD 480-648887/3-A	Lab Control Sample Dup	108	99	53	94	105	38
MB 480-648887/1-A	Method Blank	79	103	59	101	116	42

### Surrogate Legend

TBP = 2,4,6-Tribromophenol  
 FBP = 2-Fluorobiphenyl  
 2FP = 2-Fluorophenol  
 NBZ = Nitrobenzene-d5  
 TPHd14 = p-Terphenyl-d14  
 PHL = Phenol-d5

# QC Sample Results

Client: N Tonawanda Water Works

Job ID: 480-203434-1

Project/Site: North Tonawanda - WWTP (GRP)

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID:** MB 480-648101/8

**Client Sample ID:** Method Blank

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 648101

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane			ND		5.0		ug/L			11/02/22 13:31	1
1,1-Dichloroethane			ND		5.0		ug/L			11/02/22 13:31	1
1,2-Dichloroethane			ND		5.0		ug/L			11/02/22 13:31	1
2-Butanone (MEK)			ND		25		ug/L			11/02/22 13:31	1
Acetone			ND		25		ug/L			11/02/22 13:31	1
Benzene			ND		5.0		ug/L			11/02/22 13:31	1
Chlorobenzene			ND		5.0		ug/L			11/02/22 13:31	1
Ethylbenzene			ND		5.0		ug/L			11/02/22 13:31	1
Methylene Chloride			ND		5.0		ug/L			11/02/22 13:31	1
Styrene			ND		5.0		ug/L			11/02/22 13:31	1
Tetrachloroethene			ND		5.0		ug/L			11/02/22 13:31	1
Toluene			ND		5.0		ug/L			11/02/22 13:31	1
trans-1,2-Dichloroethene			ND		5.0		ug/L			11/02/22 13:31	1
Trichloroethene			ND		5.0		ug/L			11/02/22 13:31	1
Vinyl chloride			ND		5.0		ug/L			11/02/22 13:31	1
Xylenes, Total			ND		10		ug/L			11/02/22 13:31	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			101		68 - 130			11/02/22 13:31	1
4-Bromofluorobenzene (Surr)			101		76 - 123			11/02/22 13:31	1
Dibromofluoromethane (Surr)			99		75 - 123			11/02/22 13:31	1
Toluene-d8 (Surr)			96		77 - 120			11/02/22 13:31	1

**Lab Sample ID:** LCS 480-648101/6

**Client Sample ID:** Lab Control Sample

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 648101

Analyte	Spike	LCS	LCS	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane				20.0	21.2		ug/L		106	52 - 162
1,1-Dichloroethane				20.0	20.5		ug/L		102	59 - 155
1,2-Dichloroethane				20.0	21.0		ug/L		105	49 - 155
Benzene				20.0	20.5		ug/L		102	37 - 151
Chlorobenzene				20.0	19.9		ug/L		100	37 - 160
Ethylbenzene				20.0	20.0		ug/L		100	37 - 162
Methylene Chloride				20.0	15.5		ug/L		77	1 - 221
Tetrachloroethene				20.0	20.3		ug/L		102	64 - 148
Toluene				20.0	20.1		ug/L		101	47 - 150
trans-1,2-Dichloroethene				20.0	20.5		ug/L		102	54 - 156
Trichloroethene				20.0	20.1		ug/L		101	71 - 157
Vinyl chloride				20.0	21.9		ug/L		110	1 - 251

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)			106		68 - 130
4-Bromofluorobenzene (Surr)			100		76 - 123
Dibromofluoromethane (Surr)			100		75 - 123
Toluene-d8 (Surr)			98		77 - 120

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# QC Sample Results

Client: N Tonawanda Water Works

Job ID: 480-203434-1

Project/Site: North Tonawanda - WWTP (GRP)

## Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID:** MB 480-648887/1-A

**Client Sample ID:** Method Blank

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 649099

**Prep Batch:** 648887

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND				10		ug/L		11/08/22 08:34	11/09/22 11:27	1
1,4-Dichlorobenzene	ND				10		ug/L		11/08/22 08:34	11/09/22 11:27	1
2,4-Dimethylphenol	ND				5.0		ug/L		11/08/22 08:34	11/09/22 11:27	1
2-Methylphenol	ND				5.0		ug/L		11/08/22 08:34	11/09/22 11:27	1
4-Methylphenol	ND				5.0		ug/L		11/08/22 08:34	11/09/22 11:27	1
Di-n-octyl phthalate	ND				5.0		ug/L		11/08/22 08:34	11/09/22 11:27	1
Naphthalene	ND				5.0		ug/L		11/08/22 08:34	11/09/22 11:27	1
Phenol	ND				5.0		ug/L		11/08/22 08:34	11/09/22 11:27	1
Surrogate	MB	MB	%Recovery	Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79				52 - 151				11/08/22 08:34	11/09/22 11:27	1
2-Fluorobiphenyl	103				44 - 120				11/08/22 08:34	11/09/22 11:27	1
2-Fluorophenol	59				17 - 120				11/08/22 08:34	11/09/22 11:27	1
Nitrobenzene-d5	101				15 - 314				11/08/22 08:34	11/09/22 11:27	1
p-Terphenyl-d14	116				22 - 125				11/08/22 08:34	11/09/22 11:27	1
Phenol-d5	42				8 - 424				11/08/22 08:34	11/09/22 11:27	1

**Lab Sample ID:** LCS 480-648887/2-A

**Client Sample ID:** Lab Control Sample

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 649099

**Prep Batch:** 648887

Analyte	Spikes	LCS	LCS	Result	Qualifier	Unit	D	%Rec	%Rec	
	Added	Result	Qualifier						Limits	Limits
1,2-Dichlorobenzene	50.0	29.5				ug/L		59	32 - 129	
1,4-Dichlorobenzene	50.0	27.4				ug/L		55	20 - 124	
2,4-Dimethylphenol	50.0	47.6				ug/L		95	32 - 120	
2-Methylphenol	50.0	42.3				ug/L		85	45 - 120	
4-Methylphenol	50.0	39.6				ug/L		79	48 - 120	
Di-n-octyl phthalate	50.0	52.1				ug/L		104	4 - 146	
Naphthalene	50.0	39.1				ug/L		78	21 - 133	
Phenol	50.0	21.8				ug/L		44	5 - 120	
Surrogate	LCS	LCS	Limits	%Recovery	Qualifier		D	%Rec		
	Result	Qualifier	Limits							
2,4,6-Tribromophenol	107		52 - 151							
2-Fluorobiphenyl	97		44 - 120							
2-Fluorophenol	53		17 - 120							
Nitrobenzene-d5	91		15 - 314							
p-Terphenyl-d14	113		22 - 125							
Phenol-d5	39		8 - 424							

**Lab Sample ID:** LCSD 480-648887/3-A

**Client Sample ID:** Lab Control Sample Dup

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 649099

**Prep Batch:** 648887

Analyte	Spike	LCSD	LCSD	Result	Qualifier	Unit	D	%Rec	%Rec	RPD
	Added	Result	Qualifier						Limits	RPD
1,2-Dichlorobenzene	50.0	29.8				ug/L		60	32 - 129	1
1,4-Dichlorobenzene	50.0	27.9				ug/L		56	20 - 124	2
2,4-Dimethylphenol	50.0	46.1				ug/L		92	32 - 120	3
2-Methylphenol	50.0	40.3				ug/L		81	45 - 120	5

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# QC Sample Results

Client: N Tonawanda Water Works

Job ID: 480-203434-1

Project/Site: North Tonawanda - WWTP (GRP)

## Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** LCSD 480-648887/3-A

**Client Sample ID:** Lab Control Sample Dup

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 649099

**Prep Batch:** 648887

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
4-Methylphenol	50.0	38.2		ug/L		76	48 - 120	4	30
Di-n-octyl phthalate	50.0	51.9		ug/L		104	4 - 146	0	15
Naphthalene	50.0	40.0		ug/L		80	21 - 133	2	31
Phenol	50.0	21.4		ug/L		43	5 - 120	2	36

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2,4,6-Tribromophenol	108		52 - 151
2-Fluorobiphenyl	99		44 - 120
2-Fluorophenol	53		17 - 120
Nitrobenzene-d5	94		15 - 314
p-Terphenyl-d14	105		22 - 125
Phenol-d5	38		8 - 424

## Method: 200.7 Rev 4.4 - Metals (ICP)

**Lab Sample ID:** MB 480-648571/1-A

**Client Sample ID:** Method Blank

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 649307

**Prep Batch:** 648571

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20		mg/L		11/07/22 10:02	11/09/22 22:38	1
Antimony	ND		0.020		mg/L		11/07/22 10:02	11/09/22 22:38	1
Arsenic	ND		0.015		mg/L		11/07/22 10:02	11/09/22 22:38	1
Barium	ND		0.0020		mg/L		11/07/22 10:02	11/09/22 22:38	1
Beryllium	ND		0.0020		mg/L		11/07/22 10:02	11/09/22 22:38	1
Cadmium	ND		0.0020		mg/L		11/07/22 10:02	11/09/22 22:38	1
Chromium	ND		0.0040		mg/L		11/07/22 10:02	11/09/22 22:38	1
Copper	ND		0.010		mg/L		11/07/22 10:02	11/09/22 22:38	1
Iron	ND		0.050		mg/L		11/07/22 10:02	11/09/22 22:38	1
Lead	ND		0.010		mg/L		11/07/22 10:02	11/09/22 22:38	1
Magnesium	ND		0.20		mg/L		11/07/22 10:02	11/09/22 22:38	1
Manganese	ND		0.0030		mg/L		11/07/22 10:02	11/09/22 22:38	1
Nickel	ND		0.010		mg/L		11/07/22 10:02	11/09/22 22:38	1
Selenium	ND		0.025		mg/L		11/07/22 10:02	11/09/22 22:38	1
Silver	ND		0.0060		mg/L		11/07/22 10:02	11/09/22 22:38	1
Sodium	ND		1.0		mg/L		11/07/22 10:02	11/09/22 22:38	1
Zinc	ND		0.010		mg/L		11/07/22 10:02	11/09/22 22:38	1

**Lab Sample ID:** LCS 480-648571/2-A

**Client Sample ID:** Lab Control Sample

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 649307

**Prep Batch:** 648571

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum	10.0	9.53		mg/L		95	85 - 115
Antimony	0.200	0.207		mg/L		104	85 - 115
Arsenic	0.201	0.205		mg/L		102	85 - 115
Barium	0.200	0.210		mg/L		105	85 - 115
Beryllium	0.200	0.207		mg/L		104	85 - 115
Cadmium	0.200	0.206		mg/L		103	85 - 115

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# QC Sample Results

Client: N Tonawanda Water Works

Job ID: 480-203434-1

Project/Site: North Tonawanda - WWTP (GRP)

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

**Lab Sample ID: LCS 480-648571/2-A**

**Matrix: Water**

**Analysis Batch: 649307**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 648571**

Analyte		Spike	LCS	LCS	Unit	D	%Rec	Limits	
		Added	Result	Qualifier					
Chromium		0.200	0.225		mg/L		113	85 - 115	
Copper		0.200	0.213		mg/L		106	85 - 115	
Iron		10.0	10.33		mg/L		103	85 - 115	
Lead		0.201	0.199		mg/L		99	85 - 115	
Magnesium		10.0	9.42		mg/L		94	85 - 115	
Manganese		0.200	0.216		mg/L		108	85 - 115	
Nickel		0.200	0.205		mg/L		103	85 - 115	
Selenium		0.200	0.209		mg/L		104	85 - 115	
Silver		0.0500	0.0506		mg/L		101	85 - 115	
Sodium		10.0	10.16		mg/L		102	85 - 115	
Zinc		0.200	0.199		mg/L		99	85 - 115	

**Lab Sample ID: 480-203434-1 MS**

**Matrix: Water**

**Analysis Batch: 649307**

**Client Sample ID: GRP -COMP**

**Prep Type: Total/NA**

**Prep Batch: 648571**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits	
	Result	Qualifier	Added	Result	Qualifier					
Aluminum	0.20		10.0	9.87		mg/L		97	70 - 130	
Antimony	ND		0.200	0.219		mg/L		109	70 - 130	
Arsenic	ND		0.201	0.224		mg/L		112	70 - 130	
Barium	0.080		0.200	0.287		mg/L		104	70 - 130	
Beryllium	ND		0.200	0.215		mg/L		107	70 - 130	
Cadmium	ND		0.200	0.216		mg/L		108	70 - 130	
Chromium	ND		0.200	0.234		mg/L		117	70 - 130	
Copper	ND		0.200	0.227		mg/L		112	70 - 130	
Iron	0.056		10.0	10.52		mg/L		104	70 - 130	
Lead	ND		0.201	0.212		mg/L		106	70 - 130	
Magnesium	1.7		10.0	11.11		mg/L		94	70 - 130	
Manganese	0.0044		0.200	0.227		mg/L		111	70 - 130	
Nickel	ND		0.200	0.221		mg/L		111	70 - 130	
Selenium	ND		0.200	0.210		mg/L		105	70 - 130	
Silver	ND		0.0500	0.0532		mg/L		106	70 - 130	
Sodium	229		10.0	237.7	4	mg/L		87	70 - 130	
Zinc	ND		0.200	0.209		mg/L		105	70 - 130	

**Lab Sample ID: 480-203434-1 MSD**

**Matrix: Water**

**Analysis Batch: 649307**

**Client Sample ID: GRP -COMP**

**Prep Type: Total/NA**

**Prep Batch: 648571**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Aluminum	0.20		10.0	10.03		mg/L		98	70 - 130	2	20
Antimony	ND		0.200	0.225		mg/L		112	70 - 130	3	20
Arsenic	ND		0.201	0.227		mg/L		113	70 - 130	1	20
Barium	0.080		0.200	0.288		mg/L		104	70 - 130	0	20
Beryllium	ND		0.200	0.219		mg/L		110	70 - 130	2	20
Cadmium	ND		0.200	0.219		mg/L		110	70 - 130	1	20
Chromium	ND		0.200	0.237		mg/L		119	70 - 130	1	20
Copper	ND		0.200	0.230		mg/L		114	70 - 130	1	20
Iron	0.056		10.0	10.72		mg/L		106	70 - 130	2	20

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# QC Sample Results

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

**Lab Sample ID: 480-203434-1 MSD**

**Matrix: Water**

**Analysis Batch: 649307**

**Client Sample ID: GRP -COMP**

**Prep Type: Total/NA**

**Prep Batch: 648571**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Lead	ND		0.201	0.213		mg/L	106	70 - 130	0	20	
Magnesium	1.7		10.0	11.23		mg/L	95	70 - 130	1	20	
Manganese	0.0044		0.200	0.228		mg/L	112	70 - 130	1	20	
Nickel	ND		0.200	0.222		mg/L	111	70 - 130	1	20	
Selenium	ND		0.200	0.207		mg/L	103	70 - 130	2	20	
Silver	ND		0.0500	0.0542		mg/L	108	70 - 130	2	20	
Sodium	229		10.0	240.2	4	mg/L	113	70 - 130	1	20	
Zinc	ND		0.200	0.210		mg/L	105	70 - 130	0	20	

## Method: 245.1 - Mercury (CVAA)

**Lab Sample ID: MB 480-648746/1-A**

**Client Sample ID: Method Blank**

**Matrix: Water**

**Analysis Batch: 648858**

**Prep Type: Total/NA**

**Prep Batch: 648746**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.00020		mg/L		11/07/22 10:41	11/07/22 13:43	1

**Lab Sample ID: LCS 480-648746/2-A**

**Client Sample ID: Lab Control Sample**

**Matrix: Water**

**Analysis Batch: 648858**

**Prep Type: Total/NA**

**Prep Batch: 648746**

Analyte	MB	MB	Spike	LCS	LCS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Mercury			0.00667	0.00667		mg/L		100	85 - 115

**Lab Sample ID: 480-203434-1 MS**

**Client Sample ID: GRP -COMP**

**Matrix: Water**

**Analysis Batch: 648858**

**Prep Type: Total/NA**

**Prep Batch: 648746**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Mercury	ND		0.00667	0.00652		mg/L		98	70 - 130

**Lab Sample ID: 480-203434-1 MSD**

**Client Sample ID: GRP -COMP**

**Matrix: Water**

**Analysis Batch: 648858**

**Prep Type: Total/NA**

**Prep Batch: 648746**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Mercury	ND		0.00667	0.00667		mg/L		100	70 - 130	2	20

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 480-649891/28**

**Client Sample ID: Method Blank**

**Matrix: Water**

**Analysis Batch: 649891**

**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50		mg/L				1
Sulfate	ND		2.0		mg/L				1

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# QC Sample Results

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 480-649891/29

Matrix: Water

Analysis Batch: 649891

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.1	49.95		mg/L	100	90 - 110	
Sulfate	50.0	48.59		mg/L	97	90 - 110	

## Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 480-649468/48

Matrix: Water

Analysis Batch: 649468

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0129		0.010		mg/L			11/10/22 15:27	1

Lab Sample ID: HLCS 480-649468/22

Matrix: Water

Analysis Batch: 649468

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.400	0.419		mg/L	105	90 - 110	

Lab Sample ID: LCS 480-649468/23

Matrix: Water

Analysis Batch: 649468

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.250	0.262		mg/L	105	90 - 110	

Lab Sample ID: LCS 480-649468/49

Matrix: Water

Analysis Batch: 649468

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.250	0.254		mg/L	102	90 - 110	

## Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 480-649167/1-A

Matrix: Water

Analysis Batch: 649357

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 649167

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		0.20		mg/L		11/09/22 10:55	11/10/22 07:50	1

Lab Sample ID: LCS 480-649167/2-A

Matrix: Water

Analysis Batch: 649357

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 649167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Kjeldahl Nitrogen	2.50	2.49		mg/L	100	90 - 110	

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# QC Sample Results

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Method: SM 2320B - Alkalinity

**Lab Sample ID:** MB 480-648901/28

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

**Matrix:** Water

**Analysis Batch:** 648901

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Alkalinity, Total	ND				5.0		mg/L			11/07/22 17:56	1
Alkalinity, Bicarbonate	ND				5.0		mg/L			11/07/22 17:56	1

**Lab Sample ID:** MB 480-648901/4

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

**Matrix:** Water

**Analysis Batch:** 648901

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Alkalinity, Total	ND				5.0		mg/L			11/07/22 14:41	1
Alkalinity, Bicarbonate	ND				5.0		mg/L			11/07/22 14:41	1

**Lab Sample ID:** MB 480-648901/52

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

**Matrix:** Water

**Analysis Batch:** 648901

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Alkalinity, Total	ND				5.0		mg/L			11/07/22 21:33	1
Alkalinity, Bicarbonate	ND				5.0		mg/L			11/07/22 21:33	1

**Lab Sample ID:** LCS 480-648901/29

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

**Matrix:** Water

**Analysis Batch:** 648901

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	%Rec
	Added	Result	Qualifier							
Alkalinity, Total	100	101.5				mg/L	102	90 - 110		

**Lab Sample ID:** LCS 480-648901/5

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

**Matrix:** Water

**Analysis Batch:** 648901

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	%Rec
	Added	Result	Qualifier							
Alkalinity, Total	100	103.3				mg/L	103	90 - 110		

**Lab Sample ID:** LCS 480-648901/53

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

**Matrix:** Water

**Analysis Batch:** 648901

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	%Rec
	Added	Result	Qualifier							
Alkalinity, Total	100	101.1				mg/L	101	90 - 110		

**Lab Sample ID:** 480-203434-1 DU

**Client Sample ID:** GRP -COMP  
**Prep Type:** Total/NA

**Matrix:** Water

**Analysis Batch:** 648901

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier						
Alkalinity, Total	63.5		63.84		mg/L		0.5	20
Alkalinity, Bicarbonate	ND		ND		mg/L		NC	20

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# QC Sample Results

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Method: SM 2340C - Hardness, Total (mg/l as CaCO<sub>3</sub>)

**Lab Sample ID:** MB 480-650571/27

**Matrix:** Water

**Analysis Batch:** 650571

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Hardness as calcium carbonate	ND				2.0		mg/L			11/17/22 12:05	1

**Lab Sample ID:** MB 480-650571/3

**Matrix:** Water

**Analysis Batch:** 650571

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Hardness as calcium carbonate	ND				2.0		mg/L			11/17/22 12:05	1

**Lab Sample ID:** LCS 480-650571/28

**Matrix:** Water

**Analysis Batch:** 650571

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	RPD
	Added	Result	Qualifier							
Hardness as calcium carbonate		277		288.0		mg/L		104	90 - 110	

**Lab Sample ID:** LCS 480-650571/4

**Matrix:** Water

**Analysis Batch:** 650571

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	RPD
	Added	Result	Qualifier							
Hardness as calcium carbonate		277		280.0		mg/L		101	90 - 110	

**Lab Sample ID:** 480-203434-1 DU

**Matrix:** Water

**Analysis Batch:** 650571

**Client Sample ID:** GRP -COMP  
**Prep Type:** Total/NA

Analyte	Sample	Sample	Result	Qualifier	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier								
Hardness as calcium carbonate	224		228.0				mg/L		2	15

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID:** MB 480-649172/1

**Matrix:** Water

**Analysis Batch:** 649172

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Total Dissolved Solids	ND				10.0		mg/L			11/09/22 11:40	1

**Lab Sample ID:** LCS 480-649172/2

**Matrix:** Water

**Analysis Batch:** 649172

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	RPD
	Added	Result	Qualifier							
Total Dissolved Solids		693		659.0		mg/L		95	85 - 115	

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# QC Sample Results

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID:** 480-203434-1 DU

**Matrix:** Water

**Analysis Batch:** 649172

**Client Sample ID:** GRP -COMP

**Prep Type:** Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD Limit
	Result	Qualifier	Result	Qualifier				
Total Dissolved Solids	924		923.0		mg/L		0.1	10

## Method: SM 4500 S2 F - Sulfide, Total

**Lab Sample ID:** MB 480-649023/3

**Client Sample ID:** Method Blank

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 649023

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Sulfide	ND		1.0		mg/L			11/08/22 12:50	1

**Lab Sample ID:** LCS 480-649023/4

**Client Sample ID:** Lab Control Sample

**Matrix:** Water

**Prep Type:** Total/NA

**Analysis Batch:** 649023

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits
	Added	Result	Qualifier				
Sulfide	4.20	4.00		mg/L	95	90 - 110	

# QC Association Summary

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## GC/MS VOA

### Analysis Batch: 648101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-2	GRP-GRAB	Total/NA	Water	624.1	
MB 480-648101/8	Method Blank	Total/NA	Water	624.1	
LCS 480-648101/6	Lab Control Sample	Total/NA	Water	624.1	

## GC/MS Semi VOA

### Prep Batch: 648887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	625	
MB 480-648887/1-A	Method Blank	Total/NA	Water	625	
LCS 480-648887/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 480-648887/3-A	Lab Control Sample Dup	Total/NA	Water	625	

### Analysis Batch: 649099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	625.1	
MB 480-648887/1-A	Method Blank	Total/NA	Water	625.1	
LCS 480-648887/2-A	Lab Control Sample	Total/NA	Water	625.1	
LCSD 480-648887/3-A	Lab Control Sample Dup	Total/NA	Water	625.1	

## Metals

### Prep Batch: 648571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	200.7	
MB 480-648571/1-A	Method Blank	Total/NA	Water	200.7	
LCS 480-648571/2-A	Lab Control Sample	Total/NA	Water	200.7	
480-203434-1 MS	GRP -COMP	Total/NA	Water	200.7	
480-203434-1 MSD	GRP -COMP	Total/NA	Water	200.7	

### Prep Batch: 648746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	245.1	
MB 480-648746/1-A	Method Blank	Total/NA	Water	245.1	
LCS 480-648746/2-A	Lab Control Sample	Total/NA	Water	245.1	
480-203434-1 MS	GRP -COMP	Total/NA	Water	245.1	
480-203434-1 MSD	GRP -COMP	Total/NA	Water	245.1	

### Analysis Batch: 648858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	245.1	
MB 480-648746/1-A	Method Blank	Total/NA	Water	245.1	
LCS 480-648746/2-A	Lab Control Sample	Total/NA	Water	245.1	
480-203434-1 MS	GRP -COMP	Total/NA	Water	245.1	
480-203434-1 MSD	GRP -COMP	Total/NA	Water	245.1	

### Analysis Batch: 649307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	200.7 Rev 4.4	
MB 480-648571/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	
LCS 480-648571/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
480-203434-1 MS	GRP -COMP	Total/NA	Water	200.7 Rev 4.4	

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# QC Association Summary

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Metals (Continued)

### Analysis Batch: 649307 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1 MSD	GRP -COMP	Total/NA	Water	200.7 Rev 4.4	648571

## General Chemistry

### Analysis Batch: 648256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	353.2	

### Analysis Batch: 648901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	SM 2320B	
MB 480-648901/28	Method Blank	Total/NA	Water	SM 2320B	
MB 480-648901/4	Method Blank	Total/NA	Water	SM 2320B	
MB 480-648901/52	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-648901/29	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-648901/5	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-648901/53	Lab Control Sample	Total/NA	Water	SM 2320B	
480-203434-1 DU	GRP -COMP	Total/NA	Water	SM 2320B	

### Analysis Batch: 649023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	SM 4500 S2 F	
MB 480-649023/3	Method Blank	Total/NA	Water	SM 4500 S2 F	
LCS 480-649023/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 F	

### Prep Batch: 649167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-2	GRP-GRAB	Total/NA	Water	351.2	
MB 480-649167/1-A	Method Blank	Total/NA	Water	351.2	
LCS 480-649167/2-A	Lab Control Sample	Total/NA	Water	351.2	

### Analysis Batch: 649172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	SM 2540C	
MB 480-649172/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-649172/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-203434-1 DU	GRP -COMP	Total/NA	Water	SM 2540C	

### Analysis Batch: 649357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-2	GRP-GRAB	Total/NA	Water	351.2	649167
MB 480-649167/1-A	Method Blank	Total/NA	Water	351.2	649167
LCS 480-649167/2-A	Lab Control Sample	Total/NA	Water	351.2	649167

### Analysis Batch: 649468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-2	GRP-GRAB	Total/NA	Water	335.4	
MB 480-649468/48	Method Blank	Total/NA	Water	335.4	
HLCS 480-649468/22	Lab Control Sample	Total/NA	Water	335.4	
LCS 480-649468/23	Lab Control Sample	Total/NA	Water	335.4	
LCS 480-649468/49	Lab Control Sample	Total/NA	Water	335.4	

# QC Association Summary

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## General Chemistry

### Analysis Batch: 649891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	300.0	
MB 480-649891/28	Method Blank	Total/NA	Water	300.0	
LCS 480-649891/29	Lab Control Sample	Total/NA	Water	300.0	

### Analysis Batch: 650571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-203434-1	GRP -COMP	Total/NA	Water	SM 2340C	
MB 480-650571/27	Method Blank	Total/NA	Water	SM 2340C	
MB 480-650571/3	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-650571/28	Lab Control Sample	Total/NA	Water	SM 2340C	
LCS 480-650571/4	Lab Control Sample	Total/NA	Water	SM 2340C	
480-203434-1 DU	GRP -COMP	Total/NA	Water	SM 2340C	

# Lab Chronicle

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

## Client Sample ID: GRP -COMP

Date Collected: 11/02/22 08:00

Date Received: 11/02/22 10:32

Lab Sample ID: 480-203434-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	625			648887	JMP	EET BUF	11/08/22 08:34
Total/NA	Analysis	625.1		1	649099	RJS	EET BUF	11/09/22 13:54
Total/NA	Prep	200.7			648571	NVK	EET BUF	11/07/22 10:02
Total/NA	Analysis	200.7 Rev 4.4		1	649307	LMH	EET BUF	11/09/22 22:46
Total/NA	Prep	245.1			648746	VAK	EET BUF	11/07/22 10:41
Total/NA	Analysis	245.1		1	648858	NVK	EET BUF	11/07/22 13:47
Total/NA	Analysis	300.0		5	649891	RJS	EET BUF	11/15/22 02:57
Total/NA	Analysis	353.2		1	648256	CSS	EET BUF	11/02/22 21:12
Total/NA	Analysis	SM 2320B		1	648901	ARR	EET BUF	11/07/22 22:01
Total/NA	Analysis	SM 2340C		1	650571	DLG	EET BUF	11/17/22 12:05
Total/NA	Analysis	SM 2540C		1	649172	SAK	EET BUF	11/09/22 11:40
Total/NA	Analysis	SM 4500 S2 F		1	649023	DLG	EET BUF	11/08/22 12:50

## Client Sample ID: GRP-GRAB

Date Collected: 11/02/22 08:05

Date Received: 11/02/22 10:32

Lab Sample ID: 480-203434-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	624.1		4	648101	ATG	EET BUF	11/02/22 19:44
Total/NA	Analysis	335.4		1	649468	CLT	EET BUF	11/10/22 15:42
Total/NA	Prep	351.2			649167	BSW	EET BUF	11/09/22 10:55
Total/NA	Analysis	351.2		1	649357	CLT	EET BUF	11/10/22 09:27

### Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

## Accreditation/Certification Summary

Client: N Tonawanda Water Works

Job ID: 480-203434-1

Project/Site: North Tonawanda - WWTP (GRP)

### Laboratory: Eurofins Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
624.1		Water	2-Butanone (MEK)
625.1	625	Water	1,2-Dichlorobenzene
625.1	625	Water	1,4-Dichlorobenzene
625.1	625	Water	2-Methylphenol

## Method Summary

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	EET BUF
625.1	Semivolatile Organic Compounds (GC/MS)	40CFR136A	EET BUF
200.7 Rev 4.4	Metals (ICP)	EPA	EET BUF
245.1	Mercury (CVAA)	EPA	EET BUF
300.0	Anions, Ion Chromatography	MCAWW	EET BUF
335.4	Cyanide, Total	MCAWW	EET BUF
351.2	Nitrogen, Total Kjeldahl	MCAWW	EET BUF
353.2	Nitrate	EPA	EET BUF
SM 2320B	Alkalinity	SM	EET BUF
SM 2340C	Hardness, Total (mg/l as CaCO <sub>3</sub> )	SM	EET BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET BUF
SM 4500 S2 F	Sulfide, Total	SM	EET BUF
200.7	Preparation, Total Metals	EPA	EET BUF
245.1	Preparation, Mercury	EPA	EET BUF
351.2	Nitrogen, Total Kjeldahl	MCAWW	EET BUF
625	Liquid-Liquid Extraction	40CFR136A	EET BUF

### Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

### Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

## Sample Summary

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-203434-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-203434-1	GRP -COMP	Water	11/02/22 08:00	11/02/22 10:32
480-203434-2	GRP-GRAB	Water	11/02/22 08:05	11/02/22 10:32

## Eurotins Buffalo

10 Hazelwood Drive  
Amherst, NY 14228-2298  
Phone: 716-691-2600 Fax: 716-691-7991

## Chain of Custody Record

eurofins | Environment Testing America

Client Information		Sampler:	Lab PM:	Hartmann, Steve	Carrier Tracking No(s):	COC No:	
Client Contact:	Michael Gibbons	Phone:	E-Mail:	Steve.Hartmann@et.eurofinsus.com	State of Origin:	480-178714-36377.1	
Company:	N Tonawanda Water Works	PWSID:			Page:	Page 1 of 1	
Address:	830 River Road	Due Date Requested:	TAT Requested (days):				
City:	North Tonawanda						
State, Zip:	NY, 142120	Compliance Project:	△ Yes ▲ No				
Phone:	716-695-8560(Tel)	PO #:	Purchase Order not required				
Email:	mwg208@live.com	WO #:					
Project Name:	WWTP - GRP	Project #:	48002903				
Site:	SSOWW						
Field Filtered Sample (Yes or No)							
Field Dissolved Solids							
Hardness as calcium carbonate							
240C-Calc - Total Dissolved Solids							
200T, 245.1							
2540C - Matrix (Water, Oil, Tissue, Air)							
200T, 245.1							
2320B - Alkalinity							
353.2 - Nitrite, Nitrate, Nitrite, Calc							
624.1 - PREC - VOA's							
300.0 - 28D - Cl, SO4							
335.4 - Cyanide							
351.2 - TKN							
I - Ice U - Acetone V - MCAA W - pH 4-5 Y - Trizma L - EDA Z - other (specify) Other:							
Total Number of containers							
480-20344 Chain of Custody							
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Special Instructions/Note:							
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## Login Sample Receipt Checklist

Client: N Tonawanda Water Works

Job Number: 480-203434-1

**Login Number:** 203434

**List Source:** Eurofins Buffalo

**List Number:** 1

**Creator:** Wallace, Cameron

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# Eurofins Buffalo

## Job Notes

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Michael W Gibbons  
N Tonawanda Water Works  
830 River Road  
North Tonawanda, New York 14120

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## JOB DESCRIPTION

North Tonawanda - WWTP (GRP)  
North Tonawanda WWTP (1,3,9)

## JOB NUMBER

480-208319-1

# Eurofins Buffalo

## Job Notes

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# Definitions/Glossary

Client: N Tonawanda Water Works

Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Glossary

### Abbreviation

These commonly used abbreviations may or may not be present in this report.

□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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# Case Narrative

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Job ID: 480-208319-1

### Laboratory: Eurofins Buffalo

#### Narrative

#### Job Narrative 480-208319-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 4/27/2023 2:38 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 5.8° C.

#### GC/MS VOA

Method 624.1: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: GRP (480-208319-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC/MS Semi VOA

Method 625.1: The following sample was diluted due to color, appearance, and viscosity: GRP (480-208319-1). Elevated reporting limits (RL) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### HPLC/IC

Method 300.0: The following sample was diluted to bring the concentration of target analytes within the calibration range: GRP (480-208319-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Organic Prep

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 480-667425.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: N Tonawanda Water Works

Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

**Client Sample ID: GRP**

**Lab Sample ID: 480-208319-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.064		0.0020		mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.60		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	9.8		0.20		mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.12		0.0030		mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	214		1.0		mg/L	1		200.7 Rev 4.4	Total/NA
Chloride	335		1.4		mg/L	5		300.0	Total/NA
Sulfate	196		2.0		mg/L	5		300.0	Total/NA
Total Kjeldahl Nitrogen	3.7		0.20		mg/L	1		351.2	Total/NA
Nitrate as N	0.089		0.050		mg/L	1	⊗	353.2	Total/NA
Alkalinity, Total	145		5.0		mg/L	1		SM 2320B	Total/NA
Alkalinity, Bicarbonate	145		5.0		mg/L	1		SM 2320B	Total/NA
Hardness as calcium carbonate	264		2.0		mg/L	1		SM 2340C	Total/NA
Total Dissolved Solids	898		10.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Client Sample ID: GRP

Date Collected: 04/27/23 07:45

Date Received: 04/27/23 14:38

## Lab Sample ID: 480-208319-1

Matrix: Water

### Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			04/27/23 23:31	4
1,1-Dichloroethane	ND		5.0		ug/L			04/27/23 23:31	4
1,2-Dichloroethane	ND		5.0		ug/L			04/27/23 23:31	4
2-Butanone (MEK)	ND		25		ug/L			04/27/23 23:31	4
Acetone	ND		25		ug/L			04/27/23 23:31	4
Benzene	ND		5.0		ug/L			04/27/23 23:31	4
Chlorobenzene	ND		5.0		ug/L			04/27/23 23:31	4
Ethylbenzene	ND		5.0		ug/L			04/27/23 23:31	4
Methylene Chloride	ND		5.0		ug/L			04/27/23 23:31	4
Styrene	ND		5.0		ug/L			04/27/23 23:31	4
Tetrachloroethene	ND		5.0		ug/L			04/27/23 23:31	4
Toluene	ND		5.0		ug/L			04/27/23 23:31	4
trans-1,2-Dichloroethene	ND		5.0		ug/L			04/27/23 23:31	4
Trichloroethene	ND		5.0		ug/L			04/27/23 23:31	4
Vinyl chloride	ND		5.0		ug/L			04/27/23 23:31	4
Xylenes, Total	ND		10		ug/L			04/27/23 23:31	4

### Surrogate

	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		68 - 130		04/27/23 23:31	4
4-Bromofluorobenzene (Surr)	92		76 - 123		04/27/23 23:31	4
Dibromofluoromethane (Surr)	108		75 - 123		04/27/23 23:31	4
Toluene-d8 (Surr)	89		77 - 120		04/27/23 23:31	4

### Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		10		ug/L			04/28/23 15:32	5
1,4-Dichlorobenzene	ND		10		ug/L			04/28/23 15:32	5
2,4-Dimethylphenol	ND		5.0		ug/L			04/28/23 15:32	5
2-Methylphenol	ND		5.0		ug/L			04/28/23 15:32	5
4-Methylphenol	ND		5.0		ug/L			04/28/23 15:32	5
Di-n-octyl phthalate	ND		5.0		ug/L			04/28/23 15:32	5
Naphthalene	ND		5.0		ug/L			04/28/23 15:32	5
Phenol	ND		5.0		ug/L			04/28/23 15:32	5

### Surrogate

	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	73		52 - 151		04/28/23 15:32	5
2-Fluorobiphenyl	85		44 - 120		04/28/23 15:32	5
2-Fluorophenol	42		17 - 120		04/28/23 15:32	5
Nitrobenzene-d5	65		15 - 314		04/28/23 15:32	5
p-Terphenyl-d14	55		22 - 125		04/28/23 15:32	5
Phenol-d5	28		8 - 424		04/28/23 15:32	5

### Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20		mg/L			05/01/23 08:36	1
Antimony	ND		0.020		mg/L			05/01/23 08:36	1
Arsenic	ND		0.015		mg/L			05/01/23 08:36	1
<b>Barium</b>	<b>0.064</b>		0.0020		mg/L			05/01/23 08:36	1
Beryllium	ND		0.0020		mg/L			05/01/23 08:36	1
Cadmium	ND		0.0020		mg/L			05/01/23 08:36	1

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# Client Sample Results

Client: N Tonawanda Water Works

Job ID: 480-208319-1

Project/Site: North Tonawanda - WWTP (GRP)

**Client Sample ID: GRP**

**Lab Sample ID: 480-208319-1**

**Matrix: Water**

Date Collected: 04/27/23 07:45

Date Received: 04/27/23 14:38

## Method: EPA 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0040		mg/L		05/01/23 08:36	05/05/23 18:01	1
Copper	ND		0.010		mg/L		05/01/23 08:36	05/04/23 15:38	1
Iron	0.60		0.050		mg/L		05/01/23 08:36	05/04/23 15:38	1
Lead	ND		0.010		mg/L		05/01/23 08:36	05/04/23 15:38	1
Magnesium	9.8		0.20		mg/L		05/01/23 08:36	05/05/23 18:01	1
Manganese	0.12		0.0030		mg/L		05/01/23 08:36	05/05/23 18:01	1
Nickel	ND		0.010		mg/L		05/01/23 08:36	05/04/23 15:38	1
Selenium	ND		0.025		mg/L		05/01/23 08:36	05/04/23 15:38	1
Silver	ND		0.0060		mg/L		05/01/23 08:36	05/05/23 18:01	1
Sodium	214		1.0		mg/L		05/01/23 08:36	05/04/23 15:38	1
Zinc	ND		0.010		mg/L		05/01/23 08:36	05/04/23 15:38	1

## Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		05/01/23 10:55	05/01/23 14:16	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	335		1.4		mg/L		05/01/23 21:54		5
Sulfate (EPA 300.0)	196		2.0		mg/L		05/01/23 21:54		5
Cyanide, Total (EPA 335.4)	ND		0.010		mg/L		05/11/23 13:57		1
Total Kjeldahl Nitrogen (EPA 351.2)	3.7		0.20		mg/L	05/17/23 09:15	05/18/23 06:01		1
Nitrate as N (EPA 353.2)	0.089		0.050		mg/L	...	04/27/23 21:06		1
Alkalinity, Total (SM 2320B)	145		5.0		mg/L		05/03/23 12:37		1
Alkalinity, Bicarbonate (SM 2320B)	145		5.0		mg/L		05/03/23 12:37		1
Hardness as calcium carbonate (SM 2340C)	264		2.0		mg/L		05/30/23 10:25		1
Total Dissolved Solids (SM 2540C)	898		10.0		mg/L		05/04/23 11:17		1
Sulfide (SM 4500 S2 F)	ND		1.0		mg/L		05/03/23 09:50		1

# Surrogate Summary

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (68-130)	BFB (76-123)	DBFM (75-123)	TOL (77-120)
480-208319-1	GRP	104	92	108	89
LCS 480-667192/6	Lab Control Sample	100	92	106	88
MB 480-667192/8	Method Blank	101	92	105	91

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

## Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (52-151)	FBP (44-120)	2FP (17-120)	NBZ (15-314)	TPHd14 (22-125)	PHL (8-424)
480-208319-1	GRP	73	85	42	65	55	28
LCS 480-667425/2-A	Lab Control Sample	93	93	53	84	98	37
LCSD 480-667425/3-A	Lab Control Sample Dup	95	91	51	84	97	38
MB 480-667425/1-A	Method Blank	69	88	51	81	95	35

### Surrogate Legend

TBP = 2,4,6-Tribromophenol

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

TPHd14 = p-Terphenyl-d14

PHL = Phenol-d5

# QC Sample Results

Client: N Tonawanda Water Works

Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 480-667192/8**

**Matrix: Water**

**Analysis Batch: 667192**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0		ug/L			04/27/23 18:01	1
1,1-Dichloroethane	ND		5.0		ug/L			04/27/23 18:01	1
1,2-Dichloroethane	ND		5.0		ug/L			04/27/23 18:01	1
2-Butanone (MEK)	ND		25		ug/L			04/27/23 18:01	1
Acetone	ND		25		ug/L			04/27/23 18:01	1
Benzene	ND		5.0		ug/L			04/27/23 18:01	1
Chlorobenzene	ND		5.0		ug/L			04/27/23 18:01	1
Ethylbenzene	ND		5.0		ug/L			04/27/23 18:01	1
Methylene Chloride	ND		5.0		ug/L			04/27/23 18:01	1
Styrene	ND		5.0		ug/L			04/27/23 18:01	1
Tetrachloroethene	ND		5.0		ug/L			04/27/23 18:01	1
Toluene	ND		5.0		ug/L			04/27/23 18:01	1
trans-1,2-Dichloroethene	ND		5.0		ug/L			04/27/23 18:01	1
Trichloroethene	ND		5.0		ug/L			04/27/23 18:01	1
Vinyl chloride	ND		5.0		ug/L			04/27/23 18:01	1
Xylenes, Total	ND		10		ug/L			04/27/23 18:01	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 130		04/27/23 18:01	1
4-Bromofluorobenzene (Surr)	92		76 - 123		04/27/23 18:01	1
Dibromofluoromethane (Surr)	105		75 - 123		04/27/23 18:01	1
Toluene-d8 (Surr)	91		77 - 120		04/27/23 18:01	1

**Lab Sample ID: LCS 480-667192/6**

**Matrix: Water**

**Analysis Batch: 667192**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	21.2		ug/L		106	52 - 162
1,1-Dichloroethane	20.0	18.5		ug/L		92	59 - 155
1,2-Dichloroethane	20.0	20.5		ug/L		103	49 - 155
Benzene	20.0	18.1		ug/L		91	37 - 151
Chlorobenzene	20.0	19.4		ug/L		97	37 - 160
Ethylbenzene	20.0	18.4		ug/L		92	37 - 162
Methylene Chloride	20.0	17.1		ug/L		85	1 - 221
Tetrachloroethene	20.0	19.8		ug/L		99	64 - 148
Toluene	20.0	18.2		ug/L		91	47 - 150
trans-1,2-Dichloroethene	20.0	19.4		ug/L		97	54 - 156
Trichloroethene	20.0	20.2		ug/L		101	71 - 157
Vinyl chloride	20.0	17.1		ug/L		86	1 - 251

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		68 - 130
4-Bromofluorobenzene (Surr)	92		76 - 123
Dibromofluoromethane (Surr)	106		75 - 123
Toluene-d8 (Surr)	88		77 - 120

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# QC Sample Results

Client: N Tonawanda Water Works

Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 480-667425/1-A**

**Matrix: Water**

**Analysis Batch: 667584**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 667425**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2-Dichlorobenzene	ND		10		ug/L	04/28/23 15:32	05/01/23 12:25		1
1,4-Dichlorobenzene	ND		10		ug/L	04/28/23 15:32	05/01/23 12:25		1
2,4-Dimethylphenol	ND		5.0		ug/L	04/28/23 15:32	05/01/23 12:25		1
2-Methylphenol	ND		5.0		ug/L	04/28/23 15:32	05/01/23 12:25		1
4-Methylphenol	ND		5.0		ug/L	04/28/23 15:32	05/01/23 12:25		1
Di-n-octyl phthalate	ND		5.0		ug/L	04/28/23 15:32	05/01/23 12:25		1
Naphthalene	ND		5.0		ug/L	04/28/23 15:32	05/01/23 12:25		1
Phenol	ND		5.0		ug/L	04/28/23 15:32	05/01/23 12:25		1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac	%Rec	Limits	Prepared
	%Recovery	Qualifier							
2,4,6-Tribromophenol	69		52 - 151	04/28/23 15:32	05/01/23 12:25		1		
2-Fluorobiphenyl	88		44 - 120	04/28/23 15:32	05/01/23 12:25		1		
2-Fluorophenol	51		17 - 120	04/28/23 15:32	05/01/23 12:25		1		
Nitrobenzene-d5	81		15 - 314	04/28/23 15:32	05/01/23 12:25		1		
p-Terphenyl-d14	95		22 - 125	04/28/23 15:32	05/01/23 12:25		1		
Phenol-d5	35		8 - 424	04/28/23 15:32	05/01/23 12:25		1		

**Lab Sample ID: LCS 480-667425/2-A**

**Matrix: Water**

**Analysis Batch: 667584**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 667425**

Analyte	Spike	LCS	LCS	D	%Rec	Limits	%Rec	Limits
	Added	Result	Qualifier					
1,2-Dichlorobenzene	50.0	30.0		ug/L	60	32 - 129		
1,4-Dichlorobenzene	50.0	26.9		ug/L	54	20 - 124		
2,4-Dimethylphenol	50.0	43.6		ug/L	87	32 - 120		
2-Methylphenol	50.0	41.9		ug/L	84	45 - 120		
4-Methylphenol	50.0	38.8		ug/L	78	48 - 120		
Di-n-octyl phthalate	50.0	57.8		ug/L	116	4 - 146		
Naphthalene	50.0	39.9		ug/L	80	21 - 133		
Phenol	50.0	23.5		ug/L	47	5 - 120		
Surrogate	LCS	LCS	Limits	%Rec	Limits	%Rec	Limits	Prepared
	%Recovery	Qualifier						
2,4,6-Tribromophenol	93		52 - 151					
2-Fluorobiphenyl	93		44 - 120					
2-Fluorophenol	53		17 - 120					
Nitrobenzene-d5	84		15 - 314					
p-Terphenyl-d14	98		22 - 125					
Phenol-d5	37		8 - 424					

**Lab Sample ID: LCSD 480-667425/3-A**

**Matrix: Water**

**Analysis Batch: 667584**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 667425**

Analyte	Spike	LCSD	LCSD	D	%Rec	Limits	RPD	Limit
	Added	Result	Qualifier					
1,2-Dichlorobenzene	50.0	27.6		ug/L	55	32 - 129	8	38
1,4-Dichlorobenzene	50.0	25.3		ug/L	51	20 - 124	6	40
2,4-Dimethylphenol	50.0	43.2		ug/L	86	32 - 120	1	18
2-Methylphenol	50.0	43.3		ug/L	87	45 - 120	3	30

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# QC Sample Results

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID:** LCSD 480-667425/3-A

**Matrix:** Water

**Analysis Batch:** 667584

**Client Sample ID:** Lab Control Sample Dup

**Prep Type:** Total/NA

**Prep Batch:** 667425

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
4-Methylphenol	50.0	40.5		ug/L		81	48 - 120	4	30
Di-n-octyl phthalate	50.0	57.2		ug/L		114	4 - 146	1	15
Naphthalene	50.0	39.1		ug/L		78	21 - 133	2	31
Phenol	50.0	23.4		ug/L		47	5 - 120	0	36

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2,4,6-Tribromophenol	95		52 - 151
2-Fluorobiphenyl	91		44 - 120
2-Fluorophenol	51		17 - 120
Nitrobenzene-d5	84		15 - 314
p-Terphenyl-d14	97		22 - 125
Phenol-d5	38		8 - 424

## Method: 200.7 Rev 4.4 - Metals (ICP)

**Lab Sample ID:** MB 480-667434/1-A

**Matrix:** Water

**Analysis Batch:** 668320

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 667434

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20		mg/L	05/01/23 08:36	05/04/23 13:44		1
Antimony	ND		0.020		mg/L	05/01/23 08:36	05/04/23 13:44		1
Arsenic	ND		0.015		mg/L	05/01/23 08:36	05/04/23 13:44		1
Barium	ND		0.0020		mg/L	05/01/23 08:36	05/04/23 13:44		1
Beryllium	ND		0.0020		mg/L	05/01/23 08:36	05/04/23 13:44		1
Cadmium	ND		0.0020		mg/L	05/01/23 08:36	05/04/23 13:44		1
Copper	ND		0.010		mg/L	05/01/23 08:36	05/04/23 13:44		1
Iron	ND		0.050		mg/L	05/01/23 08:36	05/04/23 13:44		1
Lead	ND		0.010		mg/L	05/01/23 08:36	05/04/23 13:44		1
Magnesium	ND		0.20		mg/L	05/01/23 08:36	05/04/23 13:44		1
Manganese	ND		0.0030		mg/L	05/01/23 08:36	05/04/23 13:44		1
Nickel	ND		0.010		mg/L	05/01/23 08:36	05/04/23 13:44		1
Selenium	ND		0.025		mg/L	05/01/23 08:36	05/04/23 13:44		1
Silver	ND		0.0060		mg/L	05/01/23 08:36	05/04/23 13:44		1
Sodium	ND		1.0		mg/L	05/01/23 08:36	05/04/23 13:44		1
Zinc	ND		0.010		mg/L	05/01/23 08:36	05/04/23 13:44		1

**Lab Sample ID:** MB 480-667434/1-A

**Matrix:** Water

**Analysis Batch:** 668454

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 667434

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20		mg/L	05/01/23 08:36	05/05/23 17:42		1
Antimony	ND		0.020		mg/L	05/01/23 08:36	05/05/23 17:42		1
Arsenic	ND		0.015		mg/L	05/01/23 08:36	05/05/23 17:42		1
Barium	ND		0.0020		mg/L	05/01/23 08:36	05/05/23 17:42		1
Beryllium	ND		0.0020		mg/L	05/01/23 08:36	05/05/23 17:42		1
Cadmium	ND		0.0020		mg/L	05/01/23 08:36	05/05/23 17:42		1
Chromium	ND		0.0040		mg/L	05/01/23 08:36	05/05/23 17:42		1

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# QC Sample Results

Client: N Tonawanda Water Works

Job ID: 480-208319-1

Project/Site: North Tonawanda - WWTP (GRP)

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

**Lab Sample ID:** MB 480-667434/1-A

**Matrix:** Water

**Analysis Batch:** 668454

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 667434

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		0.010	mg/L		05/01/23 08:36	05/05/23 17:42		1
Iron	ND		0.050	mg/L		05/01/23 08:36	05/05/23 17:42		1
Lead	ND		0.010	mg/L		05/01/23 08:36	05/05/23 17:42		1
Magnesium	ND		0.20	mg/L		05/01/23 08:36	05/05/23 17:42		1
Manganese	ND		0.0030	mg/L		05/01/23 08:36	05/05/23 17:42		1
Nickel	ND		0.010	mg/L		05/01/23 08:36	05/05/23 17:42		1
Selenium	ND		0.025	mg/L		05/01/23 08:36	05/05/23 17:42		1
Silver	ND		0.0060	mg/L		05/01/23 08:36	05/05/23 17:42		1
Sodium	ND		1.0	mg/L		05/01/23 08:36	05/05/23 17:42		1
Zinc	ND		0.010	mg/L		05/01/23 08:36	05/05/23 17:42		1

**Lab Sample ID:** LCS 480-667434/2-A

**Matrix:** Water

**Analysis Batch:** 668320

**Client Sample ID:** Lab Control Sample

**Prep Type:** Total/NA

**Prep Batch:** 667434

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	10.0	9.87		mg/L	99	85 - 115	
Antimony	0.200	0.223		mg/L	111	85 - 115	
Arsenic	0.200	0.207		mg/L	103	85 - 115	
Barium	0.200	0.197		mg/L	98	85 - 115	
Beryllium	0.200	0.209		mg/L	105	85 - 115	
Cadmium	0.200	0.211		mg/L	106	85 - 115	
Copper	0.200	0.197		mg/L	99	85 - 115	
Iron	10.0	10.37		mg/L	104	85 - 115	
Lead	0.200	0.216		mg/L	108	85 - 115	
Magnesium	10.0	9.51		mg/L	95	85 - 115	
Manganese	0.200	0.197		mg/L	99	85 - 115	
Nickel	0.200	0.203		mg/L	101	85 - 115	
Selenium	0.200	0.202		mg/L	101	85 - 115	
Silver	0.0500	0.0457		mg/L	91	85 - 115	
Sodium	10.0	10.20		mg/L	102	85 - 115	
Zinc	0.200	0.191		mg/L	95	85 - 115	

**Lab Sample ID:** LCS 480-667434/2-A

**Matrix:** Water

**Analysis Batch:** 668912

**Client Sample ID:** Lab Control Sample

**Prep Type:** Total/NA

**Prep Batch:** 667434

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	0.200	0.201		mg/L	101	85 - 115	

## Method: 245.1 - Mercury (CVAA)

**Lab Sample ID:** MB 480-667601/1-A

**Matrix:** Water

**Analysis Batch:** 667691

**Client Sample ID:** Method Blank

**Prep Type:** Total/NA

**Prep Batch:** 667601

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	mg/L		05/01/23 10:55	05/01/23 13:54		1

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# QC Sample Results

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Method: 245.1 - Mercury (CVAA) (Continued)

**Lab Sample ID: LCS 480-667601/2-A**

**Matrix: Water**

**Analysis Batch: 667691**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 667601**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00669	0.00653		mg/L		98	85 - 115

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 480-667575/28**

**Matrix: Water**

**Analysis Batch: 667575**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/01/23 20:58	1
Sulfate	ND		2.0		mg/L			05/01/23 20:58	1

**Lab Sample ID: MB 480-667575/4**

**Matrix: Water**

**Analysis Batch: 667575**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50		mg/L			05/01/23 13:26	1
Sulfate	ND		2.0		mg/L			05/01/23 13:26	1

**Lab Sample ID: LCS 480-667575/29**

**Matrix: Water**

**Analysis Batch: 667575**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.1	50.32		mg/L		101	90 - 110
Sulfate	50.1	50.75		mg/L		101	90 - 110

**Lab Sample ID: LCS 480-667575/5**

**Matrix: Water**

**Analysis Batch: 667575**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.1	50.29		mg/L		100	90 - 110
Sulfate	50.1	50.72		mg/L		101	90 - 110

## Method: 335.4 - Cyanide, Total

**Lab Sample ID: MB 480-669203/105**

**Matrix: Water**

**Analysis Batch: 669203**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0133		0.010		mg/L			05/11/23 13:16	1

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# QC Sample Results

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Method: 335.4 - Cyanide, Total (Continued)

**Lab Sample ID:** MB 480-669203/21

**Matrix:** Water

**Analysis Batch:** 669203

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010		mg/L			05/11/23 09:30	1

**Lab Sample ID:** MB 480-669203/77

**Matrix:** Water

**Analysis Batch:** 669203

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0141		0.010		mg/L			05/11/23 12:01	1

**Lab Sample ID:** HLCS 480-669203/22

**Matrix:** Water

**Analysis Batch:** 669203

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.400	0.393		mg/L		98	90 - 110

**Lab Sample ID:** LCS 480-669203/106

**Matrix:** Water

**Analysis Batch:** 669203

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.250	0.242		mg/L		97	90 - 110

**Lab Sample ID:** LCS 480-669203/78

**Matrix:** Water

**Analysis Batch:** 669203

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.250	0.238		mg/L		95	90 - 110

**Lab Sample ID:** LCSD 480-669203/25

**Matrix:** Water

**Analysis Batch:** 669203

**Client Sample ID:** Lab Control Sample Dup  
**Prep Type:** Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	RPD	RPD Limit
Cyanide, Total	0.250	0.233		mg/L		93	90 - 110	2

## Method: 351.2 - Nitrogen, Total Kjeldahl

**Lab Sample ID:** MB 480-669809/1-A

**Matrix:** Water

**Analysis Batch:** 669941

**Client Sample ID:** Method Blank  
**Prep Type:** Total/NA  
**Prep Batch:** 669809

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		0.20		mg/L		05/17/23 09:15	05/18/23 05:14	1

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# QC Sample Results

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

**Lab Sample ID: LCS 480-669809/2-A**

**Matrix: Water**

**Analysis Batch: 669941**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 669809**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Kjeldahl Nitrogen	2.50	2.54		mg/L	102		90 - 110

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 480-668077/28**

**Matrix: Water**

**Analysis Batch: 668077**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		5.0		mg/L			05/03/23 10:21	1
Alkalinity, Bicarbonate	ND		5.0		mg/L			05/03/23 10:21	1

**Lab Sample ID: MB 480-668077/4**

**Matrix: Water**

**Analysis Batch: 668077**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		5.0		mg/L			05/02/23 16:40	1
Alkalinity, Bicarbonate	ND		5.0		mg/L			05/02/23 16:40	1

**Lab Sample ID: LCS 480-668077/29**

**Matrix: Water**

**Analysis Batch: 668077**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity, Total	100	96.88		mg/L	97		90 - 110

**Lab Sample ID: LCS 480-668077/5**

**Matrix: Water**

**Analysis Batch: 668077**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity, Total	100	96.96		mg/L	97		90 - 110

## Method: SM 2340C - Hardness, Total (mg/l as CaCO3)

**Lab Sample ID: MB 480-671373/3**

**Matrix: Water**

**Analysis Batch: 671373**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		2.0		mg/L			05/30/23 10:25	1

**Lab Sample ID: LCS 480-671373/4**

**Matrix: Water**

**Analysis Batch: 671373**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hardness as calcium carbonate	274	264.0		mg/L	96		90 - 110

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# QC Sample Results

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-668175/1

Matrix: Water

Analysis Batch: 668175

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0		mg/L			05/04/23 11:17	1

Lab Sample ID: LCS 480-668175/2

Matrix: Water

Analysis Batch: 668175

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Dissolved Solids	506	486.0		mg/L		96	85 - 115

## Method: SM 4500 S2 F - Sulfide, Total

Lab Sample ID: MB 480-668012/3

Matrix: Water

Analysis Batch: 668012

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		1.0		mg/L			05/03/23 09:50	1

Lab Sample ID: LCS 480-668012/4

Matrix: Water

Analysis Batch: 668012

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Sulfide	5.60	5.20		mg/L		93	90 - 110

# QC Association Summary

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## GC/MS VOA

### Analysis Batch: 667192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	624.1	
MB 480-667192/8	Method Blank	Total/NA	Water	624.1	
LCS 480-667192/6	Lab Control Sample	Total/NA	Water	624.1	

## GC/MS Semi VOA

### Prep Batch: 667425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	625	
MB 480-667425/1-A	Method Blank	Total/NA	Water	625	
LCS 480-667425/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 480-667425/3-A	Lab Control Sample Dup	Total/NA	Water	625	

### Analysis Batch: 667584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	625.1	667425
MB 480-667425/1-A	Method Blank	Total/NA	Water	625.1	667425
LCS 480-667425/2-A	Lab Control Sample	Total/NA	Water	625.1	667425
LCSD 480-667425/3-A	Lab Control Sample Dup	Total/NA	Water	625.1	667425

## Metals

### Prep Batch: 667434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	200.7	
MB 480-667434/1-A	Method Blank	Total/NA	Water	200.7	
LCS 480-667434/2-A	Lab Control Sample	Total/NA	Water	200.7	

### Prep Batch: 667601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	245.1	
MB 480-667601/1-A	Method Blank	Total/NA	Water	245.1	
LCS 480-667601/2-A	Lab Control Sample	Total/NA	Water	245.1	

### Analysis Batch: 667691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	245.1	667601
MB 480-667601/1-A	Method Blank	Total/NA	Water	245.1	667601
LCS 480-667601/2-A	Lab Control Sample	Total/NA	Water	245.1	667601

### Analysis Batch: 668320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	200.7 Rev 4.4	667434
MB 480-667434/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	667434
LCS 480-667434/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	667434

### Analysis Batch: 668454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	200.7 Rev 4.4	667434
MB 480-667434/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	667434

Eurofins Buffalo

# QC Association Summary

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## Metals

### Analysis Batch: 668912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-667434/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	667434

## General Chemistry

### Analysis Batch: 667461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	353.2	

### Analysis Batch: 667575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	300.0	
MB 480-667575/28	Method Blank	Total/NA	Water	300.0	
MB 480-667575/4	Method Blank	Total/NA	Water	300.0	
LCS 480-667575/29	Lab Control Sample	Total/NA	Water	300.0	
LCS 480-667575/5	Lab Control Sample	Total/NA	Water	300.0	

### Analysis Batch: 668012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	SM 4500 S2 F	
MB 480-668012/3	Method Blank	Total/NA	Water	SM 4500 S2 F	
LCS 480-668012/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 F	

### Analysis Batch: 668077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	SM 2320B	
MB 480-668077/28	Method Blank	Total/NA	Water	SM 2320B	
MB 480-668077/4	Method Blank	Total/NA	Water	SM 2320B	
LCS 480-668077/29	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-668077/5	Lab Control Sample	Total/NA	Water	SM 2320B	

### Analysis Batch: 668175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	SM 2540C	
MB 480-668175/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-668175/2	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 669203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	335.4	
MB 480-669203/105	Method Blank	Total/NA	Water	335.4	
MB 480-669203/21	Method Blank	Total/NA	Water	335.4	
MB 480-669203/77	Method Blank	Total/NA	Water	335.4	
HLCS 480-669203/22	Lab Control Sample	Total/NA	Water	335.4	
LCS 480-669203/106	Lab Control Sample	Total/NA	Water	335.4	
LCS 480-669203/78	Lab Control Sample	Total/NA	Water	335.4	
LCSD 480-669203/25	Lab Control Sample Dup	Total/NA	Water	335.4	

### Prep Batch: 669809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	351.2	
MB 480-669809/1-A	Method Blank	Total/NA	Water	351.2	

Eurofins Buffalo

# QC Association Summary

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

## General Chemistry (Continued)

### Prep Batch: 669809 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-669809/2-A	Lab Control Sample	Total/NA	Water	351.2	

### Analysis Batch: 669941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	351.2	669809
MB 480-669809/1-A	Method Blank	Total/NA	Water	351.2	669809
LCS 480-669809/2-A	Lab Control Sample	Total/NA	Water	351.2	669809

### Analysis Batch: 671373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-208319-1	GRP	Total/NA	Water	SM 2340C	
MB 480-671373/3	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-671373/4	Lab Control Sample	Total/NA	Water	SM 2340C	

# Lab Chronicle

Client: N Tonawanda Water Works  
 Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

**Client Sample ID: GRP**

**Lab Sample ID: 480-208319-1**

**Matrix: Water**

**Date Collected: 04/27/23 07:45**

**Date Received: 04/27/23 14:38**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	624.1		4	667192	ATG	EET BUF	04/27/23 23:31
Total/NA	Prep	625			667425	LSC	EET BUF	04/28/23 15:32
Total/NA	Analysis	625.1		5	667584	JMM	EET BUF	05/01/23 16:10
Total/NA	Prep	200.7			667434	VAK	EET BUF	05/01/23 08:36
Total/NA	Analysis	200.7 Rev 4.4		1	668454	LMH	EET BUF	05/05/23 18:01
Total/NA	Prep	200.7			667434	VAK	EET BUF	05/01/23 08:36
Total/NA	Analysis	200.7 Rev 4.4		1	668320	LMH	EET BUF	05/04/23 15:38
Total/NA	Prep	245.1			667601	NVK	EET BUF	05/01/23 10:55
Total/NA	Analysis	245.1		1	667691	NVK	EET BUF	05/01/23 14:16
Total/NA	Analysis	300.0		5	667575	RJS	EET BUF	05/01/23 21:54
Total/NA	Analysis	335.4		1	669203	CLT	EET BUF	05/11/23 13:57
Total/NA	Prep	351.2			669809	CG	EET BUF	05/17/23 09:15
Total/NA	Analysis	351.2		1	669941	CLT	EET BUF	05/18/23 06:01
Total/NA	Analysis	353.2		1	667461	IMZ	EET BUF	04/27/23 21:06
Total/NA	Analysis	SM 2320B		1	668077	DLG	EET BUF	05/03/23 12:37
Total/NA	Analysis	SM 2340C		1	671373	DLG	EET BUF	05/30/23 10:25
Total/NA	Analysis	SM 2540C		1	668175	SAK	EET BUF	05/04/23 11:17
Total/NA	Analysis	SM 4500 S2 F		1	668012	EV	EET BUF	05/03/23 09:50

**Laboratory References:**

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Accreditation/Certification Summary

Client: N Tonawanda Water Works

Job ID: 480-208319-1

Project/Site: North Tonawanda - WWTP (GRP)

## Laboratory: Eurofins Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
624.1		Water	2-Butanone (MEK)
625.1	625	Water	1,2-Dichlorobenzene
625.1	625	Water	1,4-Dichlorobenzene
625.1	625	Water	2-Methylphenol

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# Method Summary

Client: N Tonawanda Water Works  
Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET BUF
625.1	Semivolatile Organic Compounds (GC/MS)	EPA	EET BUF
200.7 Rev 4.4	Metals (ICP)	EPA	EET BUF
245.1	Mercury (CVAA)	EPA	EET BUF
300.0	Anions, Ion Chromatography	EPA	EET BUF
335.4	Cyanide, Total	EPA	EET BUF
351.2	Nitrogen, Total Kjeldahl	EPA	EET BUF
353.2	Nitrate	EPA	EET BUF
SM 2320B	Alkalinity	SM	EET BUF
SM 2340C	Hardness, Total (mg/l as CaCO <sub>3</sub> )	SM	EET BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET BUF
SM 4500 S2 F	Sulfide, Total	SM	EET BUF
200.7	Preparation, Total Metals	EPA	EET BUF
245.1	Preparation, Mercury	EPA	EET BUF
351.2	Nitrogen, Total Kjeldahl	EPA	EET BUF
625	Liquid-Liquid Extraction	EPA	EET BUF

## Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

## Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

## Sample Summary

Client: N Tonawanda Water Works

Project/Site: North Tonawanda - WWTP (GRP)

Job ID: 480-208319-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-208319-1	GRP	Water	04/27/23 07:45	04/27/23 14:38

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## Chain of Custody Record

10 Hazelwood Drive

Amherst, NY 14228-2298  
Phone: 716-691-2600 Fax: 716-691-7991

## Client Information

Client Contact:

Michael Gibbons

Company:

N Tonawanda Water Works

Address:

830 River Road

City:

North Tonawanda

State/Zip:

NY, 14210

Phone:

716-695-8560(Tel)

Email:

mwg208@live.com

Project Name:

WWTP - GRP

Site:

Sampler:

Phone:

Due Date Requested:

TAT Requested (days):

Compliance Project:

△ Yes

△ No

PO #:

Purchase Order not required

WO #:

Project #:

48002903

SSOW#:

Lab P.M.:

Hartmann, Steve

E-Mail:

Steve.Hartmann@et.eurofinsus.com

PWSID:

## Analysis Requested

Carrier Tracking No(s):

Job #:

Page:

Page 1 of 1

State of Origin:

Page:

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Page:

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Page:

Page 1 of 1

Preservation Codes:

Page:

Page 1 of 1

Sample ID:

Project #:

480-208319 Chain of Custody

Test Method/MSDS (Yes or No):

Total Number of Cont.

Other:

Z - other (specify):

Other:

Special Instructions/Note:

Other:

## Login Sample Receipt Checklist

Client: N Tonawanda Water Works

Job Number: 480-208319-1

**Login Number:** 208319

**List Source:** Eurofins Buffalo

**List Number:** 1

**Creator:** Wallace, Cameron

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

# **Appendix E**

## **QA/QC Reviews and Data Usability Summary**

# Data Validation Report

June 29, 2023

<b>To</b>	John Pentilchuk	<b>Project No.</b>	007987
<b>Copy to</b>	File	<b>DVR No.</b>	N/A
<b>From</b>	Susan Scrocchi/eew/44	<b>Contact No.</b>	716.205.1984
<b>Project Name</b>	Gratwick Riverside Park	<b>Email</b>	Susan.Scrocchi@ghd.com
<b>Subject</b>	Analytical Results and Full Validation Annual Groundwater Monitoring Event Gratwick Riverside Park North Tonawanda, New York April and June 2023		

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

## 1. Introduction

This document details a full validation of analytical results for groundwater samples collected in support of the Annual Groundwater Monitoring Program at the Gratwick Riverside Park site during April and June 2023. Samples were submitted to Eurofins Environmental Testing Laboratory, located in Amherst, New York. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Full Level IV data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spike (MS) samples and field quality assurance/quality (QA/QC) samples. The assessment of analytical and in house data included checks for: data consistency (by observing comparability of duplicate analyses), adherence to accuracy and precision criteria, and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the document entitled:

1. "National Functional Guidelines for Organic Superfund Methods Data Review", USEPA 540-R-20-005, November 2020.

## 2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

### **3. Gas Chromatography/Mass Spectrometer (GC/MS)– Tuning and Mass Calibration**

#### **3.1 Organic Analyses**

Prior to volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, methods require the analysis of specific tuning compounds bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout VOC and SVOC analysis periods. All tuning criteria were met indicating that proper optimization of the instrumentation was achieved.

### **4. Initial Calibration - Organic Analyses**

#### **4.1 GC/MS**

To quantify VOCs and SVOCs of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

1. All relative response factors (RRFs) must be greater than or equal to the method acceptance criteria.
2. The percent relative standard deviation (%RSD) values must not exceed 20.0 percent or a minimum coefficient of determination ( $R^2$ ) of 0.99 if linear and quadratic regression calibration curves are used.

The initial calibration data for VOCs and SVOCs were reviewed. All compounds met the above criteria for sensitivity and linearity.

### **5. Continuing Calibration - Organic Analyses**

#### **5.1 GC/MS**

To ensure that instrument calibration for VOC and SVOC analyses is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

1. All RRF values must be greater than or equal to the method acceptance criteria.
2. Percent difference (%D) or %Drift values must not exceed 20.0 percent.

Calibration standards were analyzed at the required frequency, and the results met the above criteria for instrument sensitivity and stability except for some observed variability. The associated sample results were qualified as estimated (see Table 4).

## **6. Laboratory Blank Analyses**

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

### **6.1 Organic Analyses**

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

## **7. Surrogate Spike Recoveries**

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for VOC and SVOC determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of SVOC analyses. For SVOC analyses, it is generally acceptable for there to be one outlying surrogate in the base/neutral or acid fraction provided that the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory criteria.

## **8. Internal Standards (IS) Analyses**

IS data were evaluated for all VOC and SVOC sample analyses.

### **8.1 Organics Analyses**

To ensure that changes in the GC/MS sensitivity and response do not affect sample analysis results, IS compounds are added to each sample prior to analysis. All results are then calculated as a ratio of the IS responses.

The sample IS results were evaluated against the following criteria:

1. The retention time of the IS must not vary more than  $\pm 30$  seconds ( $\pm 10$  seconds for VOCs) from the associated calibration standard.
2. IS area counts must not vary by more than a factor of two (50 percent to +100 percent) from the associated calibration standard.

All organic IS recoveries and retention times met the above criteria.

## **9. Laboratory Control Sample Analyses**

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS and LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

### **9.1 Organic Analyses**

The LCS and LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision, where applicable.

## **10. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses**

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1.

### **10.1 Organic Analyses**

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

## **11. Field QA/QC Samples**

The field QA/QC consisted of one trip blank sample and one field duplicate sample set.

### **11.1 Trip Blank Sample Analysis**

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank was submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

### **11.2 Field Duplicate Sample Analysis**

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples.

All field duplicate results met the above criteria demonstrating acceptable sampling and analytical precision.

## **12. Analyte Reporting**

The laboratory reported detected results down to the laboratory's sample-specific method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the sample-specific MDL were qualified as

estimated (J) in Table 2 unless qualified otherwise in this report. Non-detect results were presented as non-detect at the RL in Table 2.

## 13. Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra were evaluated according to the identification criteria established by the methods. The sample identified in Table 1 was reviewed. The organic compounds reported adhered to the specified identification criteria.

## 14. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Regards



Susan Scrocchi  
Data Management Team Leader

**Table 1**

**Sample Collection and Analysis Summary**  
**Annual Groundwater Monitoring Event**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**April and June 2023**

Sample Delivery Group	Sample Identification	Location	Matrix	Collection	Collection	<u>Analysis/Parameters</u>		Comments
				Date (mm/dd/yyyy)	Time (hr:min)	VOCs	SVOCs	
4802083611	TB-7987-042823-KM	-	Water	04/28/2023	-	X		Trip Blank
4802083611	WG-7987-042823-KM-001	MW9	Groundwater	04/28/2023	08:50	X	X	
4802083611	WG-7987-042823-KM-002	OGC3	Groundwater	04/28/2023	09:30	X	X	MS/MSD
4802083611	WG-7987-042823-KM-003	MW8	Groundwater	04/28/2023	10:15	X	X	
4802083611	WG-7987-042823-KM-004	MW8	Groundwater	04/28/2023	10:15	X	X	FD(WG-7987-042823-KM-003)
4802083611	WG-7987-042823-KM-005	OGC7	Groundwater	04/28/2023	10:50	X	X	
4802083611	WG-7987-042823-KM-006	OGC6	Groundwater	04/28/2023	11:30	X	X	
4802083611	WG-7987-042823-KM-007	MW6	Groundwater	04/28/2023	12:10	X		
4802100251	WG-7987-061623-KM-008	MW6	Groundwater	06/16/2023	09:40		X	

Notes:

- FD - Field Duplicate Sample of sample in parenthesis
- MS/MSD - Matrix Spike/Matrix Spike Duplicate
- SVOCs - Semi-volatile Organic Compounds
- VOCs - Volatile Organic Compounds

Table 2

**Analytical Results Summary  
Annual Groundwater Monitoring Event  
Gratwick Riverside Park  
North Tonawanda, New York  
April and June 2023**

Location ID:	MW6	MW6	MW8	MW8
Sample Name:	WG-7987-042823-KM-007	WG-7987-061623-KM-008	WG-7987-042823-KM-003	WG-7987-042823-KM-004
Sample Date:	04/28/2023	06/16/2023	04/28/2023	04/28/2023
				Duplicate

Parameters	Unit
------------	------

**Volatile Organic Compounds**

1,1-Dichloroethane	µg/L	2.0 U	--	4.0 U	5.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 UJ	--	20 UJ	25 UJ
Acetone	µg/L	10 U	--	20 U	25 U
Benzene	µg/L	1.4 U	--	3.4	3.2 J
Chlorobenzene	µg/L	2.0 U	--	8.2	7.9
Ethylbenzene	µg/L	2.0 U	--	3.9 J	3.7 J
Methylene chloride	µg/L	2.0 U	--	4.0 U	5.0 U
Tetrachloroethene	µg/L	16	--	4.0 UJ	5.0 UJ
Toluene	µg/L	1.8 J	--	2.2 J	5.0 U
trans-1,2-Dichloroethene	µg/L	18	--	4.0 U	5.0 U
Trichloroethene	µg/L	25	--	3.2 J	3.0 J
Vinyl chloride	µg/L	2.0 U	--	6.9	6.1
Xylenes (total)	µg/L	4.0 U	--	8.0 U	10 U

**Semi-volatile Organic Compounds**

1,2-Dichlorobenzene	µg/L	--	2.7 J	1.8 J	1.5 J
1,4-Dichlorobenzene	µg/L	--	51	75	71
2,4-Dimethylphenol	µg/L	--	10	19	17
2-Methylphenol	µg/L	--	11	16	15
4-Methylphenol	µg/L	--	28	13	12

**Table 2**

**Analytical Results Summary  
Annual Groundwater Monitoring Event  
Gratwick Riverside Park  
North Tonawanda, New York  
April and June 2023**

<b>Location ID:</b>	<b>MW6</b>	<b>MW6</b>	<b>MW8</b>	<b>MW8</b>
<b>Sample Name:</b>	<b>WG-7987-042823-KM-007</b>	<b>WG-7987-061623-KM-008</b>	<b>WG-7987-042823-KM-003</b>	<b>WG-7987-042823-KM-004</b>
<b>Sample Date:</b>	<b>04/28/2023</b>	<b>06/16/2023</b>	<b>04/28/2023</b>	<b>04/28/2023</b> <b>Duplicate</b>

<b>Parameters</b>	<b>Unit</b>
-------------------	-------------

**Semi-volatile Organic Compounds (Continued)**

Di-n-octyl phthalate (DnOP)	µg/L	--	10 U	10 U	10 U
Naphthalene	µg/L	--	10 U	0.93 J	10 U
Phenol	µg/L	--	610	10 U	0.87 J

**Table 2**

**Analytical Results Summary  
Annual Groundwater Monitoring Event  
Gratwick Riverside Park  
North Tonawanda, New York  
April and June 2023**

<b>Location ID:</b>	<b>MW9</b>	<b>OGC3</b>	<b>OGC6</b>	<b>OGC7</b>
<b>Sample Name:</b>	WG-7987-042823-KM-001	WG-7987-042823-KM-002	WG-7987-042823-KM-006	WG-7987-042823-KM-005
<b>Sample Date:</b>	04/28/2023	04/28/2023	04/28/2023	04/28/2023

<b>Parameters</b>	<b>Unit</b>			
<b>Volatile Organic Compounds</b>				
1,1-Dichloroethane	µg/L	4.0 U	1.0 U	5.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	20 UJ	5.0 U	25 UJ
Acetone	µg/L	20 U	3.9 J	25 U
Benzene	µg/L	2.8 U	0.43 J	3.5 U
Chlorobenzene	µg/L	7.6	1.0 U	8.6
Ethylbenzene	µg/L	4.0 U	1.0 U	5.0 U
Methylene chloride	µg/L	4.0 U	1.0 U	5.0 U
Tetrachloroethene	µg/L	4.0 UJ	1.0 U	9.5 J
Toluene	µg/L	3.4 J	0.53 J	13
trans-1,2-Dichloroethene	µg/L	4.0 U	1.0 U	5.0 U
Trichloroethene	µg/L	4.0 U	0.81 J	20
Vinyl chloride	µg/L	4.0 U	1.0 U	5.0 U
Xylenes (total)	µg/L	8.0 U	2.0 U	10 U
<b>Semi-volatile Organic Compounds</b>				
1,2-Dichlorobenzene	µg/L	100 U	10 U	4.3 J
1,4-Dichlorobenzene	µg/L	100 U	10 U	97
2,4-Dimethylphenol	µg/L	41 J	4.3 J	21 J
2-Methylphenol	µg/L	7.4 J	13	16 J
4-Methylphenol	µg/L	120	8.3 J	41 J

1,1-Dichloroethane	µg/L	4.0 U	1.0 U	5.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	20 UJ	5.0 U	25 UJ	5.0 UJ
Acetone	µg/L	20 U	3.9 J	25 U	5.0 U
Benzene	µg/L	2.8 U	0.43 J	3.5 U	0.70 U
Chlorobenzene	µg/L	7.6	1.0 U	8.6	1.0 U
Ethylbenzene	µg/L	4.0 U	1.0 U	5.0 U	1.0 U
Methylene chloride	µg/L	4.0 U	1.0 U	5.0 U	1.0 U
Tetrachloroethene	µg/L	4.0 UJ	1.0 U	9.5 J	1.0 UJ
Toluene	µg/L	3.4 J	0.53 J	13	1.3
trans-1,2-Dichloroethene	µg/L	4.0 U	1.0 U	5.0 U	1.2
Trichloroethene	µg/L	4.0 U	0.81 J	20	3.4
Vinyl chloride	µg/L	4.0 U	1.0 U	5.0 U	3.0
Xylenes (total)	µg/L	8.0 U	2.0 U	10 U	0.86 J

1,2-Dichlorobenzene	µg/L	100 U	10 U	4.3 J	50 U
1,4-Dichlorobenzene	µg/L	100 U	10 U	97	50 U
2,4-Dimethylphenol	µg/L	41 J	4.3 J	21 J	50 U
2-Methylphenol	µg/L	7.4 J	13	16 J	50 U
4-Methylphenol	µg/L	120	8.3 J	41 J	50 U

**Table 2**

**Analytical Results Summary  
Annual Groundwater Monitoring Event  
Gratwick Riverside Park  
North Tonawanda, New York  
April and June 2023**

<b>Location ID:</b>	<b>MW9</b>	<b>OGC3</b>	<b>OGC6</b>	<b>OGC7</b>
<b>Sample Name:</b>	<b>WG-7987-042823-KM-001</b>	<b>WG-7987-042823-KM-002</b>	<b>WG-7987-042823-KM-006</b>	<b>WG-7987-042823-KM-005</b>
<b>Sample Date:</b>	<b>04/28/2023</b>	<b>04/28/2023</b>	<b>04/28/2023</b>	<b>04/28/2023</b>

<b>Parameters</b>	<b>Unit</b>
-------------------	-------------

**Semi-volatile Organic Compounds (Continued)**

Di-n-octyl phthalate (DnOP)	µg/L	100 U	10 U	50 U	50 U
Naphthalene	µg/L	100 U	10 U	50 U	50 U
Phenol	µg/L	12 J	28	1500	50 U

Notes:

-- - Not analyzed

J - Estimated concentration

U - Not detected at the associated reporting limit

UU - Not detected; associated reporting limit is estimated

**Table 3**

**Analytical Methods**  
**Annual Groundwater Monitoring Event**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**April and June 2023**

<b>Parameter</b>	<b>Method</b>	<b>Matrix</b>	<b>Holding Time</b>	
			<b>Collection to Extraction</b> <b>(Days)</b>	<b>Collection or Extraction to Analysis</b> <b>(Days)</b>
Volatile Organic Compounds (VOCs)	SW-846 8260B	Groundwater	--	14
Semi-volatile Organic Compounds	SW8270	Groundwater	7	40

Notes:

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

**Table 4**

**Qualified Sample Results Due to Outlying Continuing Calibration Results**  
**Annual Groundwater Monitoring Event**  
**Gratwick Riverside Park**  
**Tonawanda, New York**  
**April and June 2023**

<b>Parameter</b>	<b>Analyte</b>	<b>Calibration</b>			<b>Associated Sample ID</b>	<b>Qualified Result</b>	<b>Units</b>
		<b>Date</b> <b>(mm/dd/yyyy)</b>	<b>%D</b>				
VOCs	2-Butanone (Methyl ethyl ketone) (MEK)	05/04/2023	28.5	WG-7987-042823-KM-001	20	UJ	µg/L
				WG-7987-042823-KM-003	20	UJ	µg/L
				WG-7987-042823-KM-004	25	UJ	µg/L
				WG-7987-042823-KM-005	5.0	UJ	µg/L
				WG-7987-042823-KM-006	25	UJ	µg/L
				WG-7987-042823-KM-007	10	UJ	µg/L
VOCs	Tetrachloroethene	05/04/2023	20.3	WG-7987-042823-KM-001	4.0	UJ	µg/L
				WG-7987-042823-KM-003	4.0	UJ	µg/L
				WG-7987-042823-KM-004	5.0	UJ	µg/L
				WG-7987-042823-KM-005	1.0	UJ	µg/L
				WG-7987-042823-KM-006	9.5	J	µg/L

**Notes:**

- %D - Percent difference
- J - Estimated concentration
- UJ - Not detected; associated reporting limit is estimated
- VOCs - Volatile Organic Compounds

# Data Verification Report

**July 03, 2023**

<b>To</b>	John Pentilchuk	<b>Project No.</b>	007987
<b>Copy to</b>	File	<b>DVR No.</b>	N/A
<b>From</b>	Susan Scrocchi/eew/46	<b>Contact No.</b>	716.205.1984
<b>Project Name</b>	Gratwick Riverside Park	<b>Email</b>	Susan.Scrocchi@ghd.com
<b>Subject</b>	Analytical Results and Data Verification Site Effluent Monitoring Gratwick Riverside Park North Tonawanda, New York November 2022		

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

## 1. Introduction

This document details a reduced validation of analytical results for one effluent sample collected in support of the semiannual monitoring program at the North Tonawanda Wastewater Treatment Plant during November 2022. Samples were submitted to Eurofins TestAmerica Laboratory located in Amherst, New York. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3. Some analytical parameters were performed at the Wastewater Treatment Plant lab. The results are presented in Table 2. No assessment of these parameters was performed.

Standard Level II report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody form, finished report forms, method blank data, and recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) quality assurance/quality control (QA/QC) samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

- i) "USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review", United States Environmental Protection Agency (USEPA) 540 R 20 006, November 2020
- ii) "USEPA National Functional Guidelines for Superfund Organic Methods Data Review", USEPA 540 R 20 005, November 2020

Items 1 and 2 will subsequently be referred to as the "Guidelines" in this Report.

## **2. Sample Holding Time and Preservation**

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. The sample was prepared and analyzed within the required holding times.

The sample was properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

## **3. Laboratory Method Blank Analyses**

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation with the exception of low-level detections of cyanide. The sample result was non-detect and would not have been impacted.

## **4. Surrogate Spike Recoveries - Organic Analyses**

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile (VOC) and semi-volatile (SVOC) determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits. For SVOC analyses, it is generally acceptable for there to be one outlying surrogate in the base/neutral or acid fraction provided that the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory control limits.

## **5. Laboratory Control Sample Analyses**

LCS and/or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

### **Organic Analyses**

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

## **Inorganic Analyses**

The LCS/LCSD contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries and RPDs were within the control limits, demonstrating acceptable analytical accuracy and precision.

## **6. Field QA/QC Samples**

No field QA/QC samples were submitted with these effluent samples.

## **7. Analyte Reporting**

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. No positive analyte detections less than the RL but greater than the MDL were reported. Non-detect results were presented as non-detect at the RL in Table 2.

## **8. Conclusion**

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Regards



**Susan Scrocchi**

Data Management Team Leader

**Table 1****Sample Collection and Analysis Summary****Site Effluent Monitoring****Gratwick Riverside Park****North Tonawanda, New York****November 2022**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters								
					VOCs	SVOCs	Metals	Mercury	Sulfate, Chloride	Nitrate	Cyanide	Alkalinity	Hardness
GRP-COMP	Effluent	Water	11/01-11/02/2022	08:05		X	X	X	X	X	X	X	X
GRP-GRAB	Effluent	Water	11/02/2022	08:05	X						X		X

Notes:

- SVOCs - Semi-volatile Organic Compounds  
 VOCs - Volatile Organic Compounds

**Table 2**

**Analytical Results Summary**  
**Site Effluent Monitoring**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**November 2022**

<b>Location ID:</b>	Effluent
<b>Sample Name:</b>	GRP
<b>Sample Date:</b>	<b>11/2/2022</b>

Parameters	Unit
------------	------

**Volatile Organic Compounds**

1,1,1-Trichloroethane	µg/L	5.0 U
1,1-Dichloroethane	µg/L	5.0 U
1,2-Dichloroethane	µg/L	5.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	25 U
Acetone	µg/L	25 U
Benzene	µg/L	5.0 U
Chlorobenzene	µg/L	5.0 U
Ethylbenzene	µg/L	5.0 U
Methylene chloride	µg/L	5.0 U
Styrene	µg/L	5.0 U
Tetrachloroethene	µg/L	5.0 U
Toluene	µg/L	13
trans-1,2-Dichloroethene	µg/L	5.0 U
Trichloroethene	µg/L	17
Vinyl chloride	µg/L	5.0 U
Xylenes (total)	µg/L	19

**Semi-volatile Organic Compounds**

1,2-Dichlorobenzene	µg/L	10 U
1,4-Dichlorobenzene	µg/L	12
2,4-Dimethylphenol	µg/L	6.6
2-Methylphenol	µg/L	5.0 U
4-Methylphenol	µg/L	5.0 U
Di-n-octyl phthalate (DnOP)	µg/L	5.0 U
Naphthalene	µg/L	5.0 U
Phenol	µg/L	5.0 U

**Table 2**

**Analytical Results Summary**  
**Site Effluent Monitoring**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**November 2022**

<b>Location ID:</b>	<b>Effluent</b>
<b>Sample Name:</b>	<b>GRP</b>
<b>Sample Date:</b>	<b>11/2/2022</b>

<b>Parameters</b>	<b>Unit</b>
<b>Metals</b>	
Aluminum	mg/L
Antimony	mg/L
Arsenic	mg/L
Barium	mg/L
Beryllium	mg/L
Cadmium	mg/L
Chromium	mg/L
Copper	mg/L
Iron	mg/L
Lead	mg/L
Magnesium	mg/L
Manganese	mg/L
Mercury	mg/L
Nickel	mg/L
Selenium	mg/L
Silver	mg/L
Sodium	mg/L
Zinc	mg/L
<b>General Chemistry</b>	
Alkalinity, bicarbonate	mg/L
Alkalinity, total (as CaCO <sub>3</sub> )	mg/L
Biochemical oxygen demand (BOD)	mg/L
Chloride	mg/L
Cyanide (total)	mg/L
Hardness	mg/L
Nitrate (as N)	mg/L
Oil and grease	mg/L
Phenolics (total)	mg/L

**Table 2**

**Analytical Results Summary**  
**Site Effluent Monitoring**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**November 2022**

<b>Location ID:</b>	<b>Effluent</b>
<b>Sample Name:</b>	<b>GRP</b>
<b>Sample Date:</b>	<b>11/2/2022</b>

<b>Parameters</b>	<b>Unit</b>
-------------------	-------------

**General Chemistry (Continued)**

Phosphate phosphorus	mg/L	0.065
Sulfate	mg/L	180
Sulfide	mg/L	2.8
Total dissolved solids (TDS)	mg/L	924
Total kjeldahl nitrogen (TKN)	mg/L	4.5
Total suspended solids (TSS)	mg/L	10.77
pH (water)	s.u.	10.63

Notes:

U - Not detected at the associated reporting limit

**Table 3**

**Analytical Methods**  
**Site Effluent Monitoring**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**November 2022**

<b>Parameter</b>	<b>Method</b>	<b>Matrix</b>	<b>Holding Time</b>	
			<b>Collection to Extraction</b> <b>(Days)</b>	<b>Collection or Extraction to Analysis</b> <b>(Days)</b>
Volatile Organic Compounds	EPA 624.1 <sup>1</sup>	Water	-	14
Semi-volatile Organic Compounds	EPA 625.1 <sup>1</sup>	Water	7	40
Target Analyte List Metals	EPA 200.7 <sup>1</sup>	Water	-	180
Mercury	EPA 245.1 <sup>1</sup>	Water	-	28
Chloride/Sulfate	EPA 300.0 <sup>1</sup>	Water	-	28
Cyanide	EPA 335.4 <sup>1</sup>	Water	-	14
Nitrogen, Total Kjeldahl (TKN)	EPA 351.2 <sup>1</sup>	Water	-	28
Nitrate	EPA 353.2 <sup>1</sup>	Water	-	48 hours

**Table 3**

**Analytical Methods**  
**Site Effluent Monitoring**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**November 2022**

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Hardness	SM 2340 <sup>2</sup>	Water	-	180
Alkalinity	SM2320B <sup>2</sup>	Water	-	14
Total Dissolved Solids	SM2540C <sup>2</sup>	Water	-	7
Sulfide	SM4500-S2-F <sup>2</sup>	Water	-	7

**Notes:**

"\_" - Not applicable

**Method References:**

<sup>1</sup>

- "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions

<sup>2</sup>

- "Methods for Chemical Analysis of Water and Wastes", USEPA-600/4-79-020, March 1983, with subsequent revisions

USEPA

- United States Environmental Protection Agency

# Data Verification Report

June 29, 2023

<b>To</b>	John Pentilchuk	<b>Project No.</b>	007987
<b>Copy to</b>	File	<b>DVR No.</b>	N/A
<b>From</b>	Susan Scrocchi	<b>Contact No.</b>	716.205.1984
<b>Project Name</b>	Gratwick Riverside Park	<b>Email</b>	Susan.Scrocchi@ghd.com
<b>Subject</b>	Analytical Results and Data Verification Site Effluent Monitoring Gratwick Riverside Park North Tonawanda, New York April 2023		

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

## 1. Introduction

This document details a reduced validation of analytical results for one effluent sample collected in support of the semiannual monitoring program at the North Tonawanda Wastewater Treatment Plant during April 2023. Samples were submitted to Eurofins TestAmerica Laboratory located in Amherst, New York. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3. Some analytical parameters were performed at the Wastewater Treatment Plant lab. The results are presented in Table 2. No assessment of these parameters was performed.

Standard Level II report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody form, finished report forms, method blank data, and recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) quality assurance/quality control (QA/QC) samples.

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- ii) "USEPA National Functional Guidelines for Superfund Organic Methods Data Review", USEPA 540 R 20 005, November 2020

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## **2. Sample Holding Time and Preservation**

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. The sample was prepared and analyzed within the required holding times.

The sample was properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

## **3. Laboratory Method Blank Analyses**

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation with the exception of low-level detections of cyanide. The sample result was non-detect and would not have been impacted.

## **4. Surrogate Spike Recoveries - Organic Analyses**

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile and semi-volatile determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits. For SVOC analyses, it is generally acceptable for there to be one outlying surrogate in the base/neutral or acid fraction provided that the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory control limits.

## **5. Laboratory Control Sample Analyses**

LCS and/or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

### **Organic Analyses**

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

## **Inorganic Analyses**

The LCS/LCSD contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries and RPDs were within the control limits, demonstrating acceptable analytical accuracy and precision.

## **6. Field QA/QC Samples**

No field QA/QC samples were submitted with these effluent samples.

## **7. Analyte Reporting**

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. No positive analyte detections less than the RL but greater than the MDL were reported. Non-detect results were presented as non-detect at the RL in Table 2.

## **8. Conclusion**

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Regards



**Susan Scrocci**  
Data Management Team Leader

**Table 1****Sample Collection and Analysis Summary****Site Effluent Monitoring****Gratwick Riverside Park****North Tonawanda, New York****April 2023**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters										Comments	
					VOCs	SVOCs	Metals	Mercury	Sulfate, Chloride	Nitrate	Cyanide	Alkalinity	Hardness	Total Dissolved Solids	Total Kjeldahl Nitrogen	
GRP-COMP	Effluent	Water	04/26-04/27/2023	07:45	X	X	X	X	X	X	X	X	X	X	X	
GRP-GRAB	Effluent	Water	04/27/2023	07:45	X						X			X		

## Notes:

SVOCs - Semi-volatile Organic Compounds

VOCs - Volatile Organic Compounds

**Table 2**

**Analytical Results Summary**  
**Site Effluent Monitoring**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**April 2023**

<b>Location ID:</b>		
<b>Sample Name:</b>	<b>GRP</b>	
<b>Sample Date:</b>	<b>04/27/2023</b>	
<b>Parameters</b>		<b>Unit</b>
<b>Volatile Organic Compounds</b>		
1,1,1-Trichloroethane	µg/L	5.0 U
1,1-Dichloroethane	µg/L	5.0 U
1,2-Dichloroethane	µg/L	5.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	25 U
Acetone	µg/L	25 U
Benzene	µg/L	5.0 U
Chlorobenzene	µg/L	5.0 U
Ethylbenzene	µg/L	5.0 U
Methylene chloride	µg/L	5.0 U
Styrene	µg/L	5.0 U
Tetrachloroethene	µg/L	5.0 U
Toluene	µg/L	5.0 U
trans-1,2-Dichloroethene	µg/L	5.0 U
Trichloroethene	µg/L	5.0 U
Vinyl chloride	µg/L	5.0 U
Xylenes (total)	µg/L	10 U
<b>Semi-volatile Organic Compounds</b>		
1,2-Dichlorobenzene	µg/L	10 U
1,4-Dichlorobenzene	µg/L	10 U
2,4-Dimethylphenol	µg/L	5.0 U
2-Methylphenol	µg/L	5.0 U
4-Methylphenol	µg/L	5.0 U
Di-n-octyl phthalate (DnOP)	µg/L	5.0 U
Naphthalene	µg/L	5.0 U
Phenol	µg/L	5.0 U

**Table 2**

**Analytical Results Summary**  
**Site Effluent Monitoring**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**April 2023**

<b>Location ID:</b>		<b>Effluent</b>
<b>Sample Name:</b>		<b>GRP</b>
<b>Sample Date:</b>		<b>04/27/2023</b>
<b>Parameters</b>		<b>Unit</b>
<b>Metals</b>		
Aluminum	mg/L	0.20 U
Antimony	mg/L	0.020 U
Arsenic	mg/L	0.015 U
Barium	mg/L	0.064
Beryllium	mg/L	0.0020 U
Cadmium	mg/L	0.0020 U
Chromium	mg/L	0.0040 U
Copper	mg/L	0.010 U
Iron	mg/L	0.6
Lead	mg/L	0.010 U
Magnesium	mg/L	9.8
Manganese	mg/L	0.12
Mercury	mg/L	0.00020 U
Nickel	mg/L	0.010 U
Selenium	mg/L	0.025 U
Silver	mg/L	0.0060 U
Sodium	mg/L	214
Zinc	mg/L	0.010 U
<b>General Chemistry</b>		
Alkalinity, bicarbonate	mg/L	145
Alkalinity, carbonate	mg/L	145
Alkalinity, total (as CaCO <sub>3</sub> )	mg/L	145
Biochemical oxygen demand (BOD)	mg/L	U
Chloride	mg/L	335
Cyanide (total)	mg/L	0.010 U
Hardness	mg/L	264
Nitrate (as N)	mg/L	0.089
Oil and grease	mg/L	U

**Table 2**

**Analytical Results Summary  
Site Effluent Monitoring  
Gratwick Riverside Park  
North Tonawanda, New York  
April 2023**

<b>Location ID:</b>		<b>Effluent</b>
<b>Sample Name:</b>		<b>GRP</b>
<b>Sample Date:</b>		<b>04/27/2023</b>

<b>Parameters</b>		<b>Unit</b>
<b>General Chemistry (Continued)</b>		
Phenolics (total)	mg/L	U
Phosphate phosphorus	mg/L	0.168
Sulfate	mg/L	196
Sulfide	mg/L	1.0 U
Total dissolved solids (TDS)	mg/L	898
Total kjeldahl nitrogen (TKN)	mg/L	3.7
Total suspended solids (TSS)	mg/L	7.85
pH (water)	s.u.	8.03

Notes:

U - Not detected at the associated reporting limit

**Table 3**

**Analytical Methods**  
**Site Effluent Monitoring**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**April 2023**

<b>Parameter</b>	<b>Method</b>	<b>Matrix</b>	<b>Holding Time</b>	
			<b>Collection to Extraction</b> <b>(Days)</b>	<b>Collection or Extraction to Analysis</b> <b>(Days)</b>
Volatile Organic Compounds	EPA 624.1 <sup>1</sup>	Water	-	14
Semi-volatile Organic Compounds	EPA 625.1 <sup>1</sup>	Water	7	40
Target Analyte List Metals	EPA 200.7 <sup>1</sup>	Water	-	180
Mercury	EPA 245.1 <sup>1</sup>	Water	-	28
Chloride/Sulfate	EPA 300.0 <sup>1</sup>	Water	-	28
Cyanide	EPA 335.4 <sup>1</sup>	Water	-	14
Nitrogen, Total Kjeldahl (TKN)	EPA 351.2 <sup>1</sup>	Water	-	28
Nitrate	EPA 353.2 <sup>1</sup>	Water	-	48 hours
Hardness	SM 2340 <sup>2</sup>	Water	-	180

**Table 3**

**Analytical Methods**  
**Site Effluent Monitoring**  
**Gratwick Riverside Park**  
**North Tonawanda, New York**  
**April 2023**

<b>Parameter</b>	<b>Method</b>	<b>Matrix</b>	<b>Holding Time</b>	
			<b>Collection to Extraction</b> <b>(Days)</b>	<b>Collection or Extraction to Analysis</b> <b>(Days)</b>
Alkalinity	SM2320B <sup>2</sup>	Water	-	14
Total Dissolved Solids	SM2540C <sup>2</sup>	Water	-	7
Sulfide	SM4500-S2-F <sup>2</sup>	Water	-	7

**Notes:**

- Not applicable

**Method References:**<sup>1</sup>

- "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions

<sup>2</sup>

- "Methods for Chemical Analysis of Water and Wastes", USEPA-600/4-79-020, March 1983, with subsequent revisions

USEPA

- United States Environmental Protection Agency

# **Appendix F**

## **Monthly Inspection Logs**

### **(June 2022 to May 2023)**

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

07/05/22 (For June)  
(MM DD YY)

INSPECTOR(S):

K Miller D Tyran J Kawecki

Item	Inspect For	Action Required	Comments
1. Perimeter Collection System/Off-Site Forcemain			
<input checked="" type="checkbox"/> Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	<u>None</u>	
<input checked="" type="checkbox"/> Wet Wells	- cover on securely - condition of cover - condition of inside of wet well		
2. Landfill Cap			
<input checked="" type="checkbox"/> Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation		<p>50' Either side of river middle outfall is a 8' to 10' wide strip of soil and vegetation washed away      Several major wind storms this past winter has caused more erosion around river north.      More wire mesh exposed</p>

FORM 17

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

10/05/22 (For June)  
(MM DD YY)

INSPECTOR(S):

K Miller D Tyran J Kawecki

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
2. Landfill Cap (continued)			
<input checked="" type="checkbox"/> Access Roads	- bare areas, dead/dying veg. - erosion - potholes or puddles - obstruction	None	
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
3. Wetlands (Area "R")	- dead/dying vegetation - change in water budget - general condition of wetlands		
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
4. Other Site Systems			
<input checked="" type="checkbox"/> Perimeter Fence	- integrity of fence - integrity of gates - integrity of locks - placement and condition of signs	NA	
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			

FORM 17

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

017 05 21 (For June)  
(MM DD YY)

INSPECTOR(S):

K Miller D Tyran J Kweki

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/>	Drainage Ditches/ Swale Outlets	- sediment build-up - erosion - condition of erosion protection - flow obstructions - dead/dying vegetation - cable concrete/gabion mats and riprap	<u>None</u>
<input checked="" type="checkbox"/>	Culverts	- sediment build-up - erosion - condition of erosion protection - flow obstructions	
<input checked="" type="checkbox"/>	Gas Vents	- intact /damage	
<input checked="" type="checkbox"/>	Wells	- locks secure	
<input checked="" type="checkbox"/>	Shoreline Stabilization	- condition of gabion mats and riprap	<p>Gabion mats exposed at various points along the shoreline a lot of driftwood along Shoreline</p>

FORM 17

K25

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

Jacob Kawacki, Kevin MillerDATE: 07/28/22  
 (MM DD YY)

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
1. Perimeter Collection System/Off-Site Force main			
<input checked="" type="checkbox"/>	Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	<u>None</u>
<input checked="" type="checkbox"/>	Wet Wells	- cover on securely - condition of cover - condition of inside of wet well	
2. Landfill Cap			
<input checked="" type="checkbox"/>	Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation	<p>50' Either side of river middle outfall is a 8'-10' wide strip of sand and vegetation washed away; wire mesh exposed; large amounts of seaweed noted at all outfalls</p>

FORM 17

JER

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

Jacob Kawell, Kevin Miller

DATE:

10/28/01  
(MM DD YY)

Item	Inspect For	Action Required	Comments
2. Landfill Cap (continued)			
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	- bare areas, dead/dying veg. - erosion - potholes or puddles - obstruction	<u>None</u>	
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	- dead/dying vegetation - change in water budget - general condition of wetlands		
3. Wetlands (Area "P")			
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>			
4. Other Site Systems			
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	- integrity of fence - Integrity of gates - integrity of locks - placement and condition of signs	<u>N/A</u>	

FORM 17

JEC

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 12/21/10  
(MM DD YY)

INSPECTOR(S):

Tereb Kawecki, Kevin Miller

Item	Inspect For	Action Required	Comments
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/> P	Drainage Ditches/	- sediment build-up	
<input checked="" type="checkbox"/> P	Swale Outlets	- erosion	
		- condition of erosion protection	
		- flow obstructions	
		- dead/dying vegetation	
		- cable concrete/gabion mats and riprap	
<input checked="" type="checkbox"/> P	Calverts	- sediment build-up	
		- erosion	
		- condition of erosion protection	
		- flow obstructions	
<input checked="" type="checkbox"/> JK	Gas Vents	- intact / damage	Mats exposed at various points along the shoreline; large amount of driftwood along shoreline
<input checked="" type="checkbox"/> P	Wells	- locks secure	
<input checked="" type="checkbox"/> P	Shoreline Stabilization	- condition of gabion mats and riprap	

FORM 17

TJK

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

JK

DATE:

08 31 27  
(MM DD YY)

INSPECTOR(S):

Jacob Kerecik, David Ryan

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
1. Perimeter Collection System/Off-Site Porcemain			
<input checked="" type="checkbox"/> Manholes	<ul style="list-style-type: none"> <li>- cover on securely</li> <li>- condition of cover</li> <li>- condition of inside of manhole</li> <li>- flow conditions</li> </ul>	<u>None</u>	
<input checked="" type="checkbox"/> Wet Wells	<ul style="list-style-type: none"> <li>- cover on securely</li> <li>- condition of cover</li> <li>- condition of inside of wet well</li> </ul>		
2. Landfill Cap			
<input checked="" type="checkbox"/> Vegetated Soil Cover	<ul style="list-style-type: none"> <li>- erosion</li> <li>- bare areas</li> <li>- washouts</li> <li>- leachate seeps</li> <li>- length of vegetation</li> <li>- dead/dying vegetation</li> </ul>	<p>50' either side of river middle outlet is a 8'-10' wide strip of sand and vegetation washed away; wire mesh exposed; large amounts of plant debris/foliage at all outlets</p>	

FORM 17

JK

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

Jacob Banekki, David Ryan

DATE:

10/8/31 | 2027  
(MM DD YY)*Item**Inspect For**Action Required**Comments*

## 2. Landfill Cap (continued)

P
O
S
X

Access Roads

- bare areas, dead/dying veg.
- erosion
- potholes or puddles
- obstruction

*None*


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## 3. Wetlands (Area "F")

X
X
X

- dead/dying vegetation
- change in water budget
- general condition of wetlands

*N/A*


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## 4. Other Site Systems

X
X
X
X

Perimeter Fence

- integrity of fence
- integrity of gates
- integrity of locks
- placement and condition of signs

*N/A*


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FORM 17

*JBL*

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

08/31/27  
(MM DD YY)

INSPECTOR(S):

Jacob Kausel, David Tyre

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/> Drainage Ditches/	- sediment build-up	<u>None</u>	
<input checked="" type="checkbox"/> Swale Outlets	- erosion - condition of erosion protection - flow obstructions - dead/dying vegetation - cable concrete/gabion mats and riprap		
<input checked="" type="checkbox"/> Culverts	- sediment build-up - erosion - condition of erosion protection - flow obstructions		
<input type="checkbox"/> Gas Vents	- intact /damage		
<input type="checkbox"/> Wells	- locks secure		
<input type="checkbox"/> Shoreline Stabilization	- condition of gabion mats and riprap		<i>Mats exposed at various points along shoreline, large amounts of driftwood along shoreline</i>

FORM 17

JEK

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

10/12/82/2  
(MM DD YY)

INSPECTOR(S):

Kevin Miller David Tyra

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
1. Perimeter Collection System/Off-Site Forcemain			
<input checked="" type="checkbox"/> Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	None	
<input checked="" type="checkbox"/> Wet Wells	- cover on securely - condition of cover - condition of inside of wet well		
2. Landfill Cap			
<input checked="" type="checkbox"/> Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation	So' Either side of river mouth outfall is a 8-10' wide strip of sand and vegetation washed away. Wire mesh exposed.	

FORM 17

JC 21'

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE: 09/28/12  
(MM DD YY)

INSPECTOR(S):

Kevin Miller David Tyran

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
2. Landfill Cap (continued)			
<input checked="" type="checkbox"/>	Access Roads	- bare areas, dead/dying veg. - erosion - potholes or puddles - obstruction	<u>N/A</u>
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
3. Wetlands (Area "F")	- dead/dying vegetation - change in water budget - general condition of wetlands		
4. Other Site Systems			
<input checked="" type="checkbox"/>	Perimeter Fence	- integrity of fence - integrity of gates - integrity of locks - placement and condition of signs	<u>N/A</u>
<input checked="" type="checkbox"/>			

FORM 17

KM

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

01 18 12 12  
(MM DD YY)

INSPECTOR(S):

Kevin Miller David Tyrer

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/> Drainage Ditches/ Swale Outlets	- sediment build-up - erosion - condition of erosion protection - flow obstructions - dead/dying vegetation - cable concrete/gabion mats and riprap		<u>None</u>
<input checked="" type="checkbox"/> Culverts	- sediment build-up - erosion - condition of erosion protection - flow obstructions		
<input type="checkbox"/> Gas Vents	- intact / damage		<u>Mats exposed along shoreline</u>
<input checked="" type="checkbox"/> Wells	- locks secure		<u>Large amounts of driftwood along shoreline</u>
<input checked="" type="checkbox"/> Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

K 2

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

(11) (01) (2012)  
(MM DD YY)

INSPECTOR(S):

Jacob Kamecki Kevin Miller

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
1.	Perimeter Collection System/Off-Site Force main		
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Manholes - cover on securely - condition of cover - condition of inside of manhole - flow conditions	None	
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Wet Wells - cover on securely - condition of cover - condition of inside of wet well		
2.	Landfill Cap		
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Vegetated Soil Cover - erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation	50' Either side of river middle outfall a 8'-10' wide strip of sand and vegetation washed away. Wire mesh exposed.	

FORM 17

*for me*

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S): Jacob Kowalec Kevin Miller  
DATE: 11/01/27  
(MM DD YY)

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
2. Landfill Cap (continued)			
<input checked="" type="checkbox"/> Access Roads	- bare areas, dead/dying veg. - erosion - potholes or puddles - obstruction	<u>None</u>	
<input checked="" type="checkbox"/> Wetlands (Area "F")	- dead/dying vegetation - change in water budget - general condition of wetlands		
3. Other Site Systems			
<input checked="" type="checkbox"/> Perimeter Fence	- integrity of fence - integrity of gates - integrity of locks - placement and condition of signs	<u>W/A</u>	

FORM 17

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

Jacob Frankel Kevin Miller

DATE:

11/01/12  
(MM DD YY)

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/> Drainage Ditches/ Swale Outlets	- sediment build-up - erosion - condition of erosion protection - flow obstructions - dead/dying vegetation - cable concrete/gabion mats and riprap	None	
<input type="checkbox"/> Culverts	- sediment build-up - erosion - condition of erosion protection - flow obstructions		
<input type="checkbox"/> Gas Vents	- intact / damage		Mats exposed along shoreline
<input type="checkbox"/> Wells	- locks secure		large amounts of driftwood along shore
<input type="checkbox"/> Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

11/28/22  
(MM DD YY)

INSPECTOR(S):

Kevin Miller Jacob Klawicki

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
1. Perimeter Collection System/Off-Site Forcemain			
<input checked="" type="checkbox"/> Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	<u>None</u>	
<input checked="" type="checkbox"/> Wet Wells	- cover on securely - condition of cover - condition of inside of wet well		
2. Landfill Cap			
<input checked="" type="checkbox"/> Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation		<u>50' Either side of river middle outfall</u> <u>a 8'-10' wide strip of sand and vegetation</u> <u>washed away. Wire mesh exposed.</u>

FORM 17



**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

Kevin Miller Jacob KaweckiDATE: 1/1/28/21  
(MM DD YY)

Item	Inspect For	Action Required	Comments
2. Landfill Cap (continued)			
<input checked="" type="checkbox"/>	Access Roads	- bare areas, dead/dying veg. - erosion - potholes or puddles - obstruction	<u>None</u>
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
3. Wetlands (Area "F")	- dead/dying vegetation - change in water budget - general condition of wetlands		
4. Other Site Systems			
<input checked="" type="checkbox"/>	Perimeter Fence	- integrity of fence - integrity of gates - integrity of locks - placement and condition of signs	<u>N/A</u>
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			

FORM 17

Karen R.

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S): Kevin Miller Jacob KowaleckiDATE: 11/28/12  
(MM DD YY)

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/>	Drainage Ditches/ Swale Outlets	<ul style="list-style-type: none"> <li>- sediment build-up</li> <li>- erosion</li> <li>- condition of erosion protection</li> <li>- flow obstructions</li> <li>- dead/dying vegetation</li> <li>- cable concrete/gabion mats and riprap</li> </ul>	<u>No one</u>
<input checked="" type="checkbox"/>	Culverts	<ul style="list-style-type: none"> <li>- sediment build-up</li> <li>- erosion</li> <li>- condition of erosion protection</li> <li>- flow obstructions</li> </ul>	
<input type="checkbox"/>	Gas Vents	<ul style="list-style-type: none"> <li>- intact / damage</li> </ul>	<u>Mats exposed along shoreline</u>
<input checked="" type="checkbox"/>	Wells	<ul style="list-style-type: none"> <li>- locks secure</li> </ul>	<u>Large amounts of driftwood along shore.</u>
<input checked="" type="checkbox"/>	Shoreline Stabilization	<ul style="list-style-type: none"> <li>- condition of gabion mats and riprap</li> </ul>	

FORM 17

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

11/23/2012  
(MM DD YY)

INSPECTOR(S):

K. Miller

Item	Inspect For	Action Required	Comments
1. Perimeter Collection System/Off-Site Forcemain			
<input checked="" type="checkbox"/> Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	NONE	
<input checked="" type="checkbox"/> Wet Wells	- cover on securely - condition of cover - condition of inside of wet well		
2. Landfill Cap			
<input checked="" type="checkbox"/> Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation	So' Either side of river middle outfall a 8'-10' wide strip of sand/vegetation washed away mesh exposed	

FORM 17

K. Miller

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

11 23 02 12  
(MM DD YY)

INSPECTOR(S):

K. Müller

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
2. Landfill Cap (continued)			
<input checked="" type="checkbox"/>	Access Roads	- bare areas, dead/dying veg. - erosion - potholes or puddles - obstruction	<u>None</u>
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
3. Wetlands (Area "F")	- dead/dying vegetation - change in water budget - general condition of wetlands		
4. Other Site Systems			
<input checked="" type="checkbox"/>	Perimeter Fence	- integrity of fence - integrity of gates - integrity of locks - placement and condition of signs	<u>N/A</u>
<input checked="" type="checkbox"/>			

FORM 17

R. Müller

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

12/30/21  
(MM DD YY)

INSPECTOR(S):

K. Miller

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/> Drainage Ditches/ Swale Outlets	- sediment build-up - erosion - condition of erosion protection - flow obstructions - dead/dying vegetation - cable concrete/gabion mats and riprap		None
<input checked="" type="checkbox"/> Culverts	- sediment build-up - erosion - condition of erosion protection - flow obstructions		
<input checked="" type="checkbox"/> Gas Vents	- intact / damage		Mats exposed along Shoreline
<input checked="" type="checkbox"/> Wells	- locks secure		Large amount of ice buildup on
<input checked="" type="checkbox"/> Shoreline Stabilization	- condition of gabion mats and riprap		Shore and much drifting along shoreline river

FORM 17

K. Miller

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S): J. Kowalek R. MillerDATE: 10/27/15  
(MM DD YY)

Item	Inspect For	Action Required	Comments
1. Perimeter Collection System/Off-Site Forcemain			
<input checked="" type="checkbox"/> Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	<u>None</u>	
<input checked="" type="checkbox"/> Wet Wells	- cover on securely - condition of cover - condition of inside of wet well		
2. Landfill Cap			
<input checked="" type="checkbox"/> Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation		<p><u>50' Either side of river middle outfall</u> <u>a 8'-10' wide strip of sand/vegetation</u> <u>washed away. mesh exposed</u></p>

FORM 17



**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

J. Kavcik    K. Miller

DATE:

01/27/23  
(MM DD YY)

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
2. Landfill Cap (continued)			
<input checked="" type="checkbox"/> Access Roads	- bare areas, dead/dying veg. - erosion - potholes or puddles - obstruction	<u>None</u>	
3. Wetlands (Area "F")	- dead/dying vegetation - change in water budget - general condition of wetlands		
4. Other Site Systems			
<input checked="" type="checkbox"/> Perimeter Fence	- integrity of fence - integrity of gates - integrity of locks - placement and condition of signs	<u>N/A</u>	

FORM 17



**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

J. Kavcik    K. Miller

DATE:

01/27/23  
(MM DD YY)

Item	Inspect For	Action Required	Comments
4. Other Site Systems (continued)			
Drainage Ditches/ Swale Outlets	<ul style="list-style-type: none"> <li>- sediment build-up</li> <li>- erosion</li> <li>- condition of erosion protection</li> <li>- flow obstructions</li> <li>- dead/dying vegetation</li> <li>- cable concrete/gabion mats and riprap</li> </ul>	<u>None</u>	
Culverts	<ul style="list-style-type: none"> <li>- sediment build-up</li> <li>- erosion</li> <li>- condition of erosion protection</li> <li>- flow obstructions</li> </ul>		
Gas Vents	<ul style="list-style-type: none"> <li>- intact / damage</li> </ul>		
Wells	<ul style="list-style-type: none"> <li>- locks secure</li> </ul>		
Shoreline Stabilization	<ul style="list-style-type: none"> <li>- condition of gabion mats and riprap</li> </ul>		

4. Other Site Systems (continued)
- |                                    |  |
|------------------------------------|--|
| Drainage Ditches/<br>Swale Outlets | <ul style="list-style-type: none"> <li>- sediment build-up</li> <li>- erosion</li> <li>- condition of erosion protection</li> <li>- flow obstructions</li> <li>- dead/dying vegetation</li> <li>- cable concrete/gabion mats and riprap</li> </ul> |
|------------------------------------|--|

- |          |  |
|----------|--|
| Culverts | <ul style="list-style-type: none"> <li>- sediment build-up</li> <li>- erosion</li> <li>- condition of erosion protection</li> <li>- flow obstructions</li> </ul> |
|----------|--|

- |                            |   |
|----------------------------|---|
| Gas Vents                  | <ul style="list-style-type: none"> <li>- intact / damage</li> </ul>                     |
| Wells                      | <ul style="list-style-type: none"> <li>- locks secure</li> </ul>                        |
| Shoreline<br>Stabilization | <ul style="list-style-type: none"> <li>- condition of gabion mats and riprap</li> </ul> |

None

*Mats exposed along shoreline  
large amount of ice build up on shore  
are much drifting along shoreline/river*

FORM 17



**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

K. Miller J. Kawek

DATE:

[6/21/23]  
(MM DD YY)

Item	Inspect For	Action Required	Comments
1. Perimeter Collection System/Off-Site Forcemain			
<input checked="" type="checkbox"/> Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	None	
<input checked="" type="checkbox"/> Wet Wells	- cover on securely - condition of cover - condition of inside of wet well	None	
2. Landfill Cap			
<input checked="" type="checkbox"/> Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation	50' Either side of river made outfall a 8'-10' wide strip of vegetation washed away. Mesh exposed Excess ice build up	

FORM 17

Kaw

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

01/24/03  
(MM DD YY)

INSPECTOR(S):

K. Miller J. Kaweck

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
2. Landfill Cap (continued)			
<input checked="" type="checkbox"/> Access Roads	- bare areas, dead/dying veg. - erosion - potholes or puddles - obstruction	<u>None</u>	
3. Wetlands (Area "F")	- dead/dying vegetation - change in water budget - general condition of wetlands		
4. Other Site Systems			
<input checked="" type="checkbox"/> Perimeter Fence	- integrity of fence - integrity of gates - integrity of locks - placement and condition of signs	<u>N/A</u>	

FORM 17

Kaw

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

01/24/13  
(MM DD YY)

INSPECTOR(S):

K. Miller J. Kawecki

Item	Inspect For	Action Required	Comments
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/> Drainage Ditches/ Swale Outlets	- sediment build-up - erosion - condition of erosion protection - flow obstructions - dead/dying vegetation - cable concrete/gabion mats and riprap	<u>None</u>	
<input checked="" type="checkbox"/> Culverts	- sediment build-up - erosion - condition of erosion protection - flow obstructions	<u>None</u>	
<input checked="" type="checkbox"/> Gas Vents	- intact/damage		Mats exposed along shoreline
<input checked="" type="checkbox"/> Wells	- locks secure		Large amount of ice buildup on shore
<input checked="" type="checkbox"/> Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

KZ

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

J. Koncik C. Miller

DATE:

03/31/03  
(MM DD YY)

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
1. Perimeter Collection System/Off-Site Force main			
<input checked="" type="checkbox"/> Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	None	
<input checked="" type="checkbox"/> Wet Wells	- cover on securely - condition of cover - condition of inside of wet well	None	
2. Landfill Cap			
<input checked="" type="checkbox"/> Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation	50' Either side of river middle Outfall a 6'-10' wide strip of vegetation washed away, mesh exposed.	

FORM 17

Joe L

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

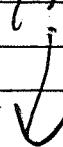
LOCATION: North Tonawanda, New York

INSPECTOR(S):

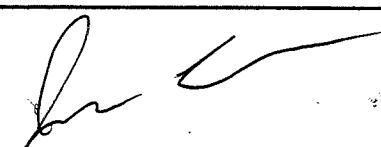
L. Miller T. Kawecki

DATE:

03/01/03  
(MM DD YY)

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
2. Landfill Cap (continued)			
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Access Roads - bare areas, dead/dying veg. - erosion - potholes or puddles - obstruction	<u>None</u>  	
3. Wetlands (Area "F")	- dead/dying vegetation - change in water budget - general condition of wetlands	<u>None</u>  	
4. Other Site Systems		<u>N/A</u>  	
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Perimeter Fence - integrity of fence - integrity of gates - integrity of locks - placement and condition of signs		

FORM 17



**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

J. KennedyK. Miller

DATE:

05/01/03  
(MM DD YY)

Item	Inspect For	Action Required	Comments
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/> Drainage Ditches/ Swale Outlets	- sediment build-up - erosion - condition of erosion protection - flow obstructions - dead/dying vegetation - cable concrete/gabion mats and riprap	<u>None</u>	
<input checked="" type="checkbox"/> Culverts	- sediment build-up - erosion - condition of erosion protection - flow obstructions	<u>None</u>	
<input checked="" type="checkbox"/> Gas Vents	- intact / damage		
<input checked="" type="checkbox"/> Wells	- locks secure		
<input checked="" type="checkbox"/> Shoreline Stabilization	- condition of gabion mats and riprap		<u>Mats exposed along shoreline</u>

FORM 17

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

10/18/23  
(MM DD YY)

INSPECTOR(S):

K. Miller / J. Kawecki

<i>Item</i>	<i>Inspect For</i>	<i>Action Required</i>	<i>Comments</i>
1. Perimeter Collection System/Off-Site Forcemain			
<input checked="" type="checkbox"/>	Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	None
<input checked="" type="checkbox"/>	Wet Wells	- cover on securely - condition of cover - condition of inside of wet well	
2. Landfill Cap			
<input checked="" type="checkbox"/>	Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation	50' either side of river middle is 8' to 10' wide strip of soil and vegetation washed away Wire mesh exposed

FORM 17

*KZ*

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S):

K. Miller / J. Kawecki

DATE:

04/28/13  
(MM DD YY)

## 2. Landfill Cap (continued)



Access Roads

- bare areas, dead/dying veg.
- erosion
- potholes or puddles
- obstruction

None



## 3. Wetlands (Area "F")



- dead/dying vegetation
- change in water budget
- general condition of wetlands

None



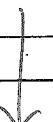
## 4. Other Site Systems



Perimeter Fence

- integrity of fence
- integrity of gates
- integrity of locks
- placement and condition of signs

N/A



FORM 17

*KZ*

**GRATWICK-RIVERSIDE PARK SITE**  
**MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

04/28/13  
(MM DD YY)

INSPECTOR(S):

K. Miller / J. Kawecki

Item	Inspect For	Action Required	Comments
4. Other Site Systems (continued)			
<input checked="" type="checkbox"/> Drainage Ditches/ Swale Outlets	- sediment build-up - erosion - condition of erosion protection - flow obstructions - dead/dying vegetation - cable concrete/gabion mats and riprap	None	
<input checked="" type="checkbox"/> Culverts	- sediment build-up - erosion - condition of erosion protection - flow obstructions	None	
<input type="checkbox"/> Gas Vents	- intact/damage	Gabion mats exposed at certain parts of shoreline	
<input checked="" type="checkbox"/> Wells	- locks secure		
<input checked="" type="checkbox"/> Shoreline Stabilization	- condition of gabion mats and riprap		

FORM 17

Kaw

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

DATE:

10/30/03  
(MM DD YY)INSPECTOR(S): J. Kawelek

Item	Inspect For	Action Required	Comments
1.	Perimeter Collection System/Off-Site Force main		
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Manholes	- cover on securely - condition of cover - condition of inside of manhole - flow conditions	<u>None</u> ↓
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Wet Wells	- cover on securely - condition of cover - condition of inside of wet well	<u>None</u> ↓
2.	Landfill Cap		
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Vegetated Soil Cover	- erosion - bare areas - washouts - leachate seeps - length of vegetation - dead/dying vegetation	50' either side of river middle outfall a 8'-10' wide strip of vegetation washed away mesh exposed

FORM 17

FZ

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

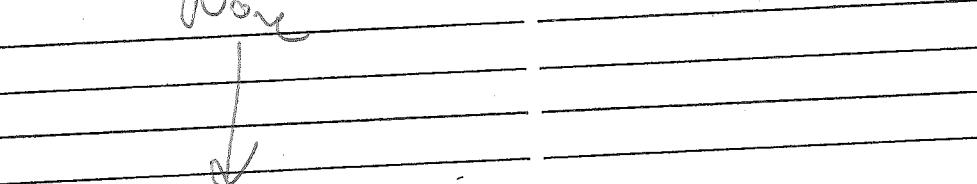
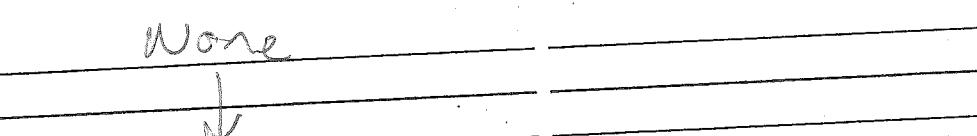
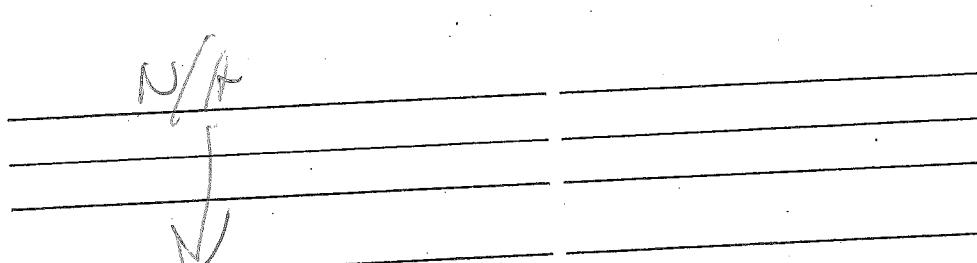
DATE:

053023  
(MM DD YY)

INSPECTOR(S):

J. Kawek

### **Comment:**

Item	Inspect For	Action Required	Comments
2.	Landfill Cap (continued)		
	Access Roads	<ul style="list-style-type: none"> <li>- bare areas, dead/dying veg.</li> <li>- erosion</li> <li>- potholes or puddles</li> <li>- obstruction</li> </ul>	<p>None</p> 
3.	Wetlands (Area "F")	<ul style="list-style-type: none"> <li>- dead/dying vegetation</li> <li>- change in water budget</li> <li>- general condition of wetlands</li> </ul>	<p>None</p> 
4.	Other Site Systems		
	Perimeter Fence	<ul style="list-style-type: none"> <li>- integrity of fence</li> <li>- integrity of gates</li> <li>- integrity of locks</li> <li>- placement and condition of signs</li> </ul>	<p>N/A</p> 

FORM 17

**GRATWICK-RIVERSIDE PARK SITE  
MONTHLY INSPECTION LOG**

PROJECT NAME: Gratwick-Riverside Park Site

LOCATION: North Tonawanda, New York

INSPECTOR(S): J. Kavv. K.DATE: 10/30/03  
(MM DD YY)

## 4. Other Site Systems (continued)

X
X
X
S
R
D

Drainage Ditches/  
Swale Outlets

- sediment build-up
- erosion
- condition of erosion protection
- flow obstructions
- dead/dying vegetation
- cable concrete/gabion mats and riprap

## Action Required

No

## Comments

B
S
D
T

Culverts

- sediment build-up
- erosion
- condition of erosion protection
- flow obstructions

None

G
P
S

Gas Vents

- intact / damage

Wells

- locks secure

Shoreline  
Stabilization

- condition of gabion mats and riprap

Mats exposed along shoreline.

FORM 17

M



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