NEW YORK STATE OFFICE OF PEOPLE WITH DEVELOPMENTAL DISABILITIES

2016 PERIODIC REVIEW REPORT

Former Gowanda Day Habilitation Center
4 Industrial Place
Town of Gowanda, Cattaraugus County
Voluntary Cleanup Program Agreement V-00463-9

Prepared for:

New York State Department of Environmental Conservation, Region 9

Bergmann Project No. 6974.85

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1.0 Background

NYSDEC Site Number V00463, the former Gowanda Day Habilitation Center facility, is located at 4 Industrial Place, Gowanda, NY. The New York State Office of People with Developmental Disabilities (OPWDD), as the volunteer, has entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC) to conduct investigations and implement remedial measures in accordance with VCA Site No. V-00463, effective August 16, 2001.

The Gowanda Day Habilitation site (the Site) consists of a 5.94 acre parcel located at 4 Industrial Place. The building, previously used by several manufacturing operations, was built in stages between 1948 and 1987 and was renovated in 1987 and 1988. New York State agencies have occupied the building since 1982. New York State acquired the parcel in 1989. The building was most recently operated by the OPWDD, which at that time was known as the Western New York Developmental Disabilities Services Office, as a Day Habilitation Center for mental care clients. In April 2001 on-site operations ceased. Bergmann investigated the nature and extent of contamination resulting from historical underground chemical storage at the Gowanda Day Habilitation Center in 2003 Site Investigation and 2004 Supplemental Site Investigation reports. Trichloroethene (TCE) was the most commonly detected compound. TCE degradation products cis-1,2,Dichloroethene, (Cis-DCE) trans-1,2-Dichloroethene (Trans-DCE) and Vinyl Chloride (VC) were also detected.

Following Interim Remedial Measure (IRM) system installation, activation of the Groundwater Treatment System (GTS) and Soil Vapor Extraction (SVE) System occurred on May 10, 2005. An additional groundwater recovery well, designated G-3, was installed outside the building and adjacent to monitoring well MW-17 in November 2008. The GTS consists of seven groundwater recovery wells (four dual phase recovery wells and three groundwater-only recovery wells), an air compressor, a network of controller-less pneumatic pumps and an air stripper treatment system to treat recovered groundwater. The SVE System consists of a lobe blower and piping network which extract vapors and pass them through two 10,000 lb carbon filters. Once filtered, the vapors are discharged to the outdoor air. The attached Figure 1 depicts the site layout with regard to monitoring and recovery wells.

Recovered groundwater was formerly pumped to an equalization tank for settling of sediment. The groundwater was discharged to the Village of Gowanda Sewage Treatment Plant (STP) via the sanitary sewer in accordance with a Gowanda Sewer Use Permit. A VOC Groundwater Treatment Agreement between OPWDD and the Village was active until the shutdown of the system, discussed below in Section 2.2. As the system is currently shut down, water was not discharged to the sewer for the 2015 calendar year. If the system is re-activated, a new agreement will be executed between OPWDD and the Village.

In January 2008, the OPWDD decommissioned the building. Bergmann winterized the GTS with the addition of heat tape and insulation to conveyance lines and the installation of an independently operated unit heater in the treatment area for the GTS and SVE (former Machine Shop). The building remains unoccupied and in a state of disrepair for the 2015 year. Numerous roof leaks and damage relative to a flooding event in 2009 have introduced mold to interior spaces. The roof leaks and mold do not appear to be impacting the remedial system. OPWDD and/or their agents will perform periodic inspections of the building for potential structural deficiency issues and will perform limited building envelope repairs as necessary to address any significant site safety concerns. Bergmann performed two building inspections during 2015 and prepared building inspection reports under separate cover.

2.0 Groundwater Sampling Overview and Methods

2.1 Well Maintenance Activities

During the 2016 sampling events, all wells were accessible and the integrity of the wells was not compromised. Repairs or maintenance to the network of groundwater monitoring wells or recovery wells has not been required since June 2007, with the exception of redevelopment activities performed on August 19, 2015 to clear sediment from wells after an in-situ chemical oxidation (ISCO) injection. All stand pipes and flush-mount curb boxes were found to be intact and secure. Exterior monitoring wells are secured with locking stand pipes. The monitoring wells within the building are secured with flush-mount roadway covers.

Replacement to damaged flush-mount protective roadway boxes was completed on June 27, 2007. Well rehabilitation and silt removal was conducted June 25 – 26, 2007 and August 19, 2015.

2.2 Groundwater Treatment System and Soil Vapor Extraction System Maintenance

During an October 2013 site visit, a section of piping broke away from the SVE due to system pressure. The SVE system was shut down until a repair could be made. Bergmann assessed the GTS during a January 2014 site visit and determined that two of the seven well pumps were operational. The remaining pumps appeared to be damaged. Bergmann replaced the SVE pipe section and inspected the well pumps for damage. The pumps appeared to be in poor condition and were removed from the wells. DR-1, DR-2, DR-3, DR-4 were pulled. DR-4 was coated in a black sludge-like material and had a hole in the casing. DR-2, DR-3 and G-2 were coated in orange-brown sediment and the hose and pump effluent lines were clogged with sediment. DR-1 was also coated in orange-brown sediment.

The condition of the SVE and GTS was discussed with the NYSDEC representative and it was agreed that these systems would be inactivated to allow for groundwater level recovery during the preparation of an ISCO remedial action plan (RAP) and implementation of an ISCO treatment. Bergmann performed an ISCO remediation in May 2015 and a second round of injections in September 2015. The groundwater treatment was performed to address remaining contamination at the Site in lieu of costly repair of the SVE and GTS. The SVE and GTS equipment will remain on site in the event that re-activation is required in the future.

2.3 Groundwater Field Monitoring and Sampling Activities

Groundwater measurements and sampling activities were conducted in accordance with the October 2006 OM&M Manual. The depths to groundwater for monitoring wells are determined on a quarterly basis to track site-wide changes in the water table elevation and to allow for adjustment at recovery wells. Operation of the recovery wells was intended to establish hydraulic containment of the plume of impacted groundwater beneath the former Day Habilitation building and improve recovery and treatment of impacted groundwater. Although the system was shut down for the 2016 year and the pumps were pulled from recovery wells, hydraulic containment of the plume was achieved. Groundwater samples were collected from the 14 of 21 site-related groundwater monitoring wells during the 2016 sampling events. Depth to groundwater measurements were obtained from 21 of the 21 monitoring wells for the 2016 sampling events. Results are indicators of the performance of the treatment system and the continued containment of the contaminant plume.

Groundwater samples were collected from monitoring wells after each well was gauged and purged of standing water via low-flow pumping using a Geo-pump electric peristaltic pump. Sample parameters including turbidity, temperature, pH, oxygen, salinity and conductivity were monitored using a Horiba U-53 to ensure sufficient well purging prior to sampling. Dedicated bailers were used to collect groundwater samples from recovery wells after the ISCO remediation occurred in May 2015. During past sampling events, groundwater samples were collected from the 7 recovery wells using dedicated bailers, as the GTS was actively pulling groundwater into the system, allowing for collection of groundwater samples similar to purging monitoring wells. As the system was shut down during the 2016 quarterly sampling events, the wells were purged and sampled using the same method as the monitoring well sampling where possible. One duplicate sample and one field blank sample were collected and submitted for laboratory analysis.

Groundwater samples were delivered via chain-of-custody protocol to a NYSDOH certified laboratory for testing using EPA Method 8260B for targeted chlorinated VOCs.

3.0 Local Groundwater Flow Characterization

Delineation of the local water table surface and groundwater flow pattern was determined for 2016 using elevations measured from the 21 site-related monitoring wells. The current network of monitoring wells at the facility is shown on Figure 1. Groundwater characteristics were determined using depth to water measurements obtained on June 28-29, 2016, September 14-15, 2016, and November 21-22, 2016. The well gauging values and groundwater elevations are provided in Table 1 of each Quarterly Report included in Appendix A – Quarterly Groundwater Characterization Reports.

The quarterly groundwater contour maps show a local flow pattern similar to the water table observed historically since 2002. The local groundwater was flowing in a northerly direction. Torrance Place is hydraulically down-gradient from the Day Habilitation Center building. The following is a summary of groundwater flow for each sampling event in the reporting period:

June 2016

The June 2016 depths to groundwater range from 7.11 ft below top of casing (btoc) at MW-2, located on the south side of the property to 13.48 ft btoc at MW-6 located at the northern property line. The average depth to groundwater at the wells measured was 10.03 ft bgs. The site-wide average depth to water table increased by approximately 0.61 ft when compared to the November 2015 sampling event. This increase in the water table is inferred as seasonal.

September 2016

The September 2016 depths to groundwater range from 7.56 ft below top of casing (btoc) at MW-2, located on the south side of the property to 13.72 ft btoc at MW-17 located at the northern property line. The average depth to groundwater at the wells measured was 10.28 ft bgs. The site-wide average depth to water table increased by approximately 0.25 ft when compared to the June 2016 sampling event. This increase in the water table is inferred as seasonal.

November 2016

The November 2016 depths to groundwater range from 6.07 ft below top of casing (btoc) at MW-2, located on the south side of the property to 13.22 ft btoc at MW-6 located at the northern property line. The average depth to groundwater at the wells measured was 9.62 ft bgs. The site-wide average

depth to water table decreased by approximately 0.66 ft when compared to the September 2016 sampling event. This increase in the water table is inferred as seasonal.

Groundwater Contour Maps indicating the depths to groundwater for each sampling event are presented as Figure 1 of each Groundwater Characterization Report for the report period. Copies of these reports are included in Appendix A.

4.0 Laboratory Analysis

4.1 Laboratory Analysis of Groundwater Samples

Laboratory analysis was completed on groundwater samples from groundwater monitoring wells and recovery wells on site. Monitoring wells that were determined in 2008 by the NYSDEC and Bergmann personnel to be outside the area of impact by the GTS include MW-2, MW-3, MW-5, MW-8, MW-9, MW-10, MW-13, and MW-21. NYSDEC added MW-21 to the sampling plan for the 2015 sampling events. The remainder of these wells were not sampled. Sentry groundwater monitoring wells were established to monitor a separate occurrence of contaminated groundwater at the Gowanda Electronics site (NYSDEC Site 905025), immediately east of Industrial Place and east of the subject property. These wells include MW-19R, MW-20, and MW-4.

All samples were analyzed for volatile organic compounds (VOCs) via United States Environmental Protection Agency (US EPA) Method 8260B. Analysis was performed in accordance with the October 2006 OM&M Manual. The following chlorinated halogens (VOCs) were analyzed for:

- Trichloroethene (TCE)
- 1,1,1 Trichloroethane (TCA)
- Cis-1,2-Dichloroethene (Cis-DCE)
- Trans-1,2-Dichloroethene (Trans-DCE)
- Vinyl Chloride (VC)

For quality assurance/quality control (QA/QC) purposes, a duplicate groundwater sample was collected from monitoring well MW-1, designated sample “MW-X.” Results from sample MW-X were consistent with the sample collected from MW-1.

A trip blank was supplied by the laboratory for QA/QC and submitted for analysis with the groundwater samples. The trip blank sample was non-detect for chlorinated halogens VOCs. A field blank was also collected for QA/QC purposes to ensure proper cleaning of the sampling equipment. The field blank was non-detect for chlorinated halogens for each sampling event in 2016.

4.2 Monitoring Well Groundwater Analysis Summary

Analytical results for monitoring wells during each quarterly sampling event are summarized as follows:

<u>June 2016</u>

Concentrations in 4 of the 14 monitoring well groundwater samples increased when compared to the November 2015 sampling event while concentrations in 7 of the 14 monitoring well groundwater

samples decreased. Concentrations in 3 groundwater samples from monitoring wells had no change. The June 2016 sampling analytical results indicate an average site-wide decrease in total VOCs of approximately 79% since activation of the GTS in May 2005.

September 2016

Concentrations in 7 of the 14 monitoring well groundwater samples increased when compared to the June 2016 sampling event while concentrations in 4 of the 14 monitoring well groundwater samples decreased. Concentrations in 3 groundwater samples from monitoring wells had no change. The current sampling analytical results indicate an average site-wide decrease in total VOCs of approximately 69% since activation of the GTS in May 2005.

November 2016

Concentrations in 3 of the 14 monitoring well groundwater samples increased when compared to the September 2016 sampling event while concentrations in 8 of the 14 monitoring well groundwater samples decreased. Concentrations in 3 groundwater samples from monitoring wells had no change. The current sampling analytical results indicate an average site-wide decrease in total VOCs of approximately 71% since activation of the GTS in May 2005.

Contaminant distribution maps indicating the results for each sampling event are presented as Figures 2 and 3 of each Quarterly Groundwater Characterization Report. Copies of these reports are included in Appendix A.

4.3 Sentry Well Groundwater Analysis Summary

Analytical results for sentry wells during each sampling event in 2016 are summarized as follows:

June 2016

The eastern sentry wells sampled for this event included MW-19R, MW-20, and MW-4. The June 2016 results indicate non-detect for these three wells.

September 2016

The eastern sentry wells sampled for this event included MW-19R, MW-20, and MW-4. The September 2016 results indicate non-detect for these three wells.

November 2016

The eastern sentry wells sampled for this event included MW-19R, MW-20, and MW-4. The November 2016 results indicate non-detect for these three wells.

The risk of migrating groundwater from the Gowanda Electronics site onto the Day Habilitation Center property was a concern that prompted the installation of sentry wells along Industrial Place. MW-19R has been impacted in the past from the Gowanda Electronics plume. The Gowanda Electronics plume of impacted groundwater does not appear to currently extend to the Day Habilitation Center property, based on consistent non-detect values at the eastern sentry wells. Conversely, impacted groundwater from the Day Habilitation Center subject property does not appear to extend off-site to the east to Industrial Place.

During the March 2014 sampling event, Mr. Chris Sanson, Environmental Scientist for Groundwater & Environmental Services, Inc. (GES) was conducting groundwater level measurements along Torrance Place. Mr. Sanson stated that an in-situ chemical oxidation (ISCO) was being implemented for the Gowanda Electronics site at that time.

4.4 Recovery Well Groundwater Analysis Summary

Analytical results for recovery wells during each sampling event in 2016 are summarized as follows:

June 2016

During the June 2016 sampling event, 6 of the 7 recovery wells were sampled. Recovery well G-2 was dry and was therefore not sampled. Recovery well G-3 was mislabeled in the field as G-2, as reflected in the June 2016 Groundwater Characterization Report and associated laboratory analytical data package. The June 2016 analytical results indicate detection of 2 chlorinated VOCs in recovery well samples: TCE and Cis-DCE. Chlorinated VOCs were detected in samples from all 6 of the sampled recovery wells. Total VOCs at the 6 recovery wells for which past data is available have decreased since activation of the GTS in May 2005. The average reduction in VOCs for the June 2016 sampling event is 47% relative to concentrations prior to GTS activation in 2005.

September 2016

During the September 2016 sampling event, 7 of the 7 recovery wells were sampled. The September 2016 analytical results indicate detection of 2 chlorinated VOCs in recovery well samples: TCE and Cis-DCE. Chlorinated VOCs were detected in samples from 6 of the 7 sampled recovery wells. Total VOCs at the 7 recovery wells for which past data is available have decreased since activation of the GTS in May 2005. The average reduction in VOCs for the September 2016 sampling event is 41% relative to concentrations prior to GTS activation in 2005.

November 2016

During the November 2016 sampling event, 6 of the 7 recovery wells were sampled. The November 2016 analytical results indicate detection of 2 chlorinated VOCs in recovery well samples: TCE and Cis-DCE. Chlorinated VOCs were detected in samples from 6 of the 6 sampled recovery wells. Total VOCs at the 7 recovery wells for which past data is available have decreased since activation of the GTS in May 2005. The average reduction in VOCs for the November 2016 sampling event is 47% relative to concentrations prior to GTS activation in 2005.

Recovery wells DR-3 and G-1 have shown a gradual decrease in percent reduction since December 2013. DR-3 and G-1 were areas of focus for the ISCO groundwater remediation. Since the ISCO groundwater remediation, the average reduction in VOCs for DR-3 is approximately 40% and the average reduction in VOCs for G-1 is 65%.

5.0 Remediation System Efficiency

5.1 Extent of Impacted Groundwater

The area of highest impacted groundwater is consistent for all 2016 sampling events. The bulk of the contaminant mass appears to be concentrated beneath the building in the source area, in the vicinity of monitoring well MW-1 and MW-11, extending north to recovery wells DR-1 and DR-2.

The contaminant plume appears to have stabilized due to the previous operation of the GTS for over 10 years. While in operation, the GTS was successful in hydraulically containing most of the contaminant plume on the property and minimizing further migration. The GTS was not operating during the 2016 sampling events and overall sample results are similar to previous quarterly reports. It appears that residual VOCs in the plume have not migrated and are contained when compared to sample results with operation of the GTS during previous monitoring events.

The remedial program at the Site was modified by terminating the GTS and soil vapor extraction system, believed to have achieved the extent of it practical benefits in favor of ISCO treatment of the residual concentration of VOCs in Groundwater. The SVE and GTS equipment will remain on site in the event that re-activation is required in the future.

Analytical results for each sampling event in the reporting period are summarized as follows:

June 2016

Chlorinated VOCs were detected in groundwater from 10 of the 14 sampled monitoring wells. VOCs were not detected in groundwater from 3 of the sampled monitoring wells (MW-4, MW-18, MW-19R and MW-20). Sample results from these wells have historically indicated low to non-detect levels of VOCs. Groundwater samples from 11 monitoring wells had detectable chlorinated VOCs at concentrations above applicable Class GA Standards. The monitoring well with the highest total VOCs, MW-11 (580 ppb), is located in the area of the historically greatest impacted groundwater.

Concentrations in 4 of the 14 monitoring well groundwater samples increased when compared to the November 2015 sampling event while concentrations in 7 of the 14 monitoring well groundwater samples decreased. Concentrations in 3 groundwater samples from monitoring wells had no change. The June 2016 sampling analytical results indicate an average site-wide decrease in total VOCs of approximately 79% since activation of the GTS in May 2005.

The area of highest impacted groundwater exists at the area centered between monitoring wells MW-1 and MW-11, which has historically indicated the highest levels of VOCs and is inferred as the source area of impacted groundwater. In the area where the plume of impacted groundwater is inferred (monitoring wells MW-1, MW-6, MW-7, MW-11, MW-12, MW-14, MW-15, and MW-17) the current laboratory analysis shows a contaminant reduction in VOC concentrations by an average of approximately 75% since groundwater monitoring of these wells began in 2002.

During the June 2016 sampling event, 6 of the 7 recovery wells were sampled. Recovery well G-2 was dry and was therefore not sampled. Recovery well G-3 was mislabeled in the field as G-2. Sample results on the laboratory analytical report included in Appendix A of the June 2016 Groundwater Characterization Report referring to G-2 are the results for G-3. The June 2016 sampling event results showed an increase of total VOCs at 4 recovery wells (DR-1, DR-2, DR-3, and G-3) when compared to the November 2015 sampling event. This increase is attributed to residual contamination released to the capillary fringe to the dissolve phase in groundwater at the Site.

VOCs were not detected at MW-4, MW-19R, and MW-18 during the June 2016 sampling event. Monitoring well MW-21 was added to the list of sampled wells at the request of the NYSDEC. The total VOC concentration at MW-21 for the June 2016 sampling event is 8.7 ppb, a decrease from the November 2015 value of 20 ppb.

September 2016

Chlorinated VOCs were detected in groundwater from 11 of the 14 sampled monitoring wells. VOCs were not detected in groundwater from 3 of the sampled monitoring wells (MW-4, MW-19R and MW-20). Sample results from these wells have historically indicated low to non-detect levels of VOCs. Groundwater samples from 11 monitoring wells had detectable chlorinated VOCs at concentrations above applicable Class GA Standards. The monitoring well with the highest total VOCs, MW-1 (838 ppb), is located in the area of the historically greatest impacted groundwater. Concentrations in 7 of the 14 monitoring well groundwater samples increased when compared to the June 2016 sampling event while concentrations in 4 of the 14 monitoring well groundwater samples decreased. Concentrations in 3 groundwater samples from monitoring wells had no change. The September 2016 sampling analytical results indicate an average site-wide decrease in total VOCs of approximately 69% since activation of the GTS in May 2005.

The area of highest impacted groundwater exists at the area centered between monitoring wells MW-1 and MW-11, which has historically indicated the highest levels of VOCs and is inferred as the source area of impacted groundwater. In the area where the plume of impacted groundwater is inferred (monitoring wells MW-1, MW-6, MW-7, MW-11, MW-12, MW-14, MW-15, and MW-17) the current laboratory analysis shows a contaminant reduction in VOC concentrations by an average of approximately 70% since groundwater monitoring of these wells began in 2002.

During the September 2016 sampling event, 7 of the 7 recovery wells were sampled. The September 2016 sampling event results showed an increase of total VOCs at 4 recovery wells (DR-2, DR-3, DR-4, and G-1) when compared to the June 2016 sampling event. This increase is attributed to residual contamination released in the capillary fringe to the dissolve phase in groundwater at the Site.

VOCs were not detected at MW-19R and MW-20 during the September 2016 sampling event. The total VOC concentration at MW-18 for the September 2016 sampling event (26 ppb) shows an increase from the June 2016 sampling event (6.9 ppb). This increase is attributed to residual contamination released to the capillary fringe to the dissolve phase in groundwater at the Site. The total VOC concentration at MW-21 for the September 2016 sampling event (39 ppb) shows an increase from the June 2016 sampling event (8.7 ppb). MW-19R, MW-18 and MW-21 are off-site monitoring wells north of the facility. These monitoring points are inferred as beyond the area of hydraulic influence of the recovery wells. Impacted groundwater at these areas was detected prior to activation of the GTS in May 2005.

November 2016

Chlorinated VOCs were detected in groundwater from 11 of the 14 sampled monitoring wells. VOCs were not detected in groundwater from 3 of the sampled monitoring wells (MW-4, MW-19R and MW-20). Sample results from these wells have historically indicated low to non-detect levels of VOCs. Groundwater samples from 11 monitoring wells had detectable chlorinated VOCs at concentrations above applicable Class GA Standards. The monitoring well with the highest total VOCs, MW-1 (1,467 ppb), is located in the area of the historically greatest impacted groundwater.

Concentrations in 3 of the 14 monitoring well groundwater samples increased when compared to the September 2016 sampling event while concentrations in 8 of the 14 monitoring well groundwater samples decreased. Concentrations in 3 groundwater samples from monitoring wells had no change. The November 2016 sampling analytical results indicate an average site-wide decrease in total VOCs of approximately 71% since activation of the GTS in May 2005.

The area of highest impacted groundwater exists at the area centered between monitoring wells MW-1 and MW-11, which has historically indicated the highest levels of VOCs and is inferred as the source area of impacted groundwater. In the area where the plume of impacted groundwater is inferred (monitoring wells MW-1, MW-6, MW-7, MW-11, MW-12, MW-14, MW-15, and MW-17) the current laboratory analysis shows a contaminant reduction in VOC concentrations by an average of approximately 61% since groundwater monitoring of these wells began in 2002.

During the November 2016 sampling event, 6 of the 7 recovery wells were sampled. Recovery well G-2 was dry and was therefore not sampled. The November 2016 sampling event results showed an increase of total VOCs at 1 recovery well (DR-1) when compared to the September 20016 sampling event. This increase is attributed to residual contamination released in the capillary fringe to the dissolve phase in groundwater at the Site.

VOCs were not detected at MW-19R during the November 2016 sampling event. The total VOC concentration at MW-18 for the November 2016 sampling event (10 ppb) shows a decrease from the September 2016 event (26 ppb). The total VOC concentration at MW-21 for the November 2016 sampling event (17 ppb) shows a decrease from the September 2016 event (39 ppb). MW-19R, MW-18 and MW-21 are off-site monitoring wells north of the facility. These monitoring points are inferred as beyond the area of hydraulic influence of the recovery wells. Impacted groundwater at these areas was detected prior to activation of the GTS in May 2005.

Overall reduction of contaminants in the majority of the monitoring and recovery wells has occurred at the Site when viewed over the past 10 years of sampling. After the next quarterly monitoring event occurs, a meeting with Bergmann, DASNY and NYSDEC should be scheduled to determine next steps for further contaminant reduction and eventual spill closure.

5.2 Groundwater Analytical Results

During the reporting period, three quarterly sampling events were conducted. Copies of these reports are included in Appendix A. Results for each sampling event are used to evaluate and document contamination reduction. Chart 1 shows contamination reduction since activation of the GTS and SVE Systems.

Contamination levels generally trend towards a reduction as time progresses with some fluctuations that result in slight increases and decreases in contamination levels between sample events due to rising and falling groundwater elevations and the shutdown of the GTS.

Groundwater Contour maps were also prepared for each sampling event, which allowed Bergmann to monitor the change in groundwater flow across the site. Groundwater Contour maps are included in each of the quarterly the Groundwater Characterization Reports in Appendix A.

Overall contaminant reduction is monitored at each individual sampling point and also in three specific “groups” of points: site-wide, original plume area only and recovery wells. These three groups allow Bergmann to more thoroughly monitor the system’s effectiveness and adjust network operation. Table 1 of this report shows the breakdown of those three groups by quarter since activation of the GTS and SVE Systems.

Overall contaminant reduction at the recovery wells decreased to 47% (November 2016) from 60% in November 2015. Reduction at the recovery wells remained consistently between the 90-95% range since 2010 until the shutdown of the system. The GTS was turned off for the 2014, 2015, and 2016 quarterly sampling events. Contaminant concentration rebound during these years may be associated with the system shutdown and associated groundwater level recovery, as well as residual contamination released in the capillary fringe to the dissolve phase in groundwater at the Site.

Overall contaminant reduction at the monitoring wells increased to 71% (November 2016) from 66% in November 2015. Reduction at the monitoring wells remained consistently between the 70 and 85% since 2010 until the shutdown of the system. The GTS was turned off for the 2014, 2015, and 2016 quarterly sampling events. Contaminant concentration rebound during the year may be associated with the system shutdown and associated groundwater level recovery, as well as residual contamination released in the capillary fringe to the dissolve phase in groundwater at the Site.

The remediation system at the Gowanda Day Habilitation Center previously controlled and removed contaminants from the groundwater plume area. Contaminant levels decreased more than 80% from May 2005 to June 2015. The ISCO groundwater treatment completed in September 2015 may have released residual contamination in the capillary fringe to the dissolve phase in groundwater at the Site. Next steps to eliminate remaining contamination at the Site should be discussed with NYSDEC.

5.3 Compliance

During the 2016 reporting period, the remedial system was not in operation and therefore was not discharging water. The existing wells and monitoring well network is adequate to monitor the performance of the remediation program and to allow for the collection of groundwater quality samples.

On December 13, 2016 and January 10, 2017, Bergmann oversaw the removal and transport 4 spent carbon towers and 9 drums for disposal from the Site. Carbon towers were transported under proper manifest by Weavertown Transport Leasing, Inc. to Evoqua Water Technologies LLC in Darlington, Pennsylvania. Drums were transported under proper manifest by Tonawanda Tank Transport to Michigan Disposal Waste Treatment Plant in Belleville, Michigan.

Building Condition Assessment (BCAs) were conducted at the Site in January and August 2016. The following conclusions/recommendations were made:

The building is currently vacant and unoccupied. Notification should be given to any individual(s) entering the building so appropriate precautions and PPE can be utilized for building access. The building should be posted with signage identifying the potential hazard and limiting access to properly trained and equipped personnel. Notification of suspect mold growth within the building should be given to any individual(s) entering the building, prior to entry, so they can take appropriate precautions. Notification of broken glass within the building should be given to any individual(s) entering the building prior to entry. Notification of the dead-end corridor and affected/unusable exits should be given to any individual(s) entering the building, prior to entry, so they can take appropriate precautions. Notification of exit and emergency lighting within the building should be given to any individual(s) entering the building prior to entry. Notification of the ceiling debris should be given to any individual(s) entering the building, prior to entry, so they can take appropriate precautions. In November 2016, Bergmann found all exterior entrance doors padlocked, one exterior entrance door was locked from the outside, and the remaining entrance doors were locked from the inside. Any

individual(s) entering the building should be provided with keys to open doors before working within the building to ensure safe emergency exit.

Regarding structural concerns with the building:

1. The roof structure appears structurally sound and stable; however, there is evidence of roof leaks that could result in damage to the structure over time. If the building is not heated, damage from freezing could occur.
2. The roof gutter system and downspouts should be fixed or reinstalled for regular function as required, to help prevent water intrusion into the building.
3. One roof support connection for the existing structural bracing system on the west parapet wall on the roof is completely rusted and needs to be fixed or renovated.

Structural issues requiring immediate attention are currently being addressed by OPWDD, as well as other building envelope maintenance/security issues. Those issues not requiring immediate attention will be addressed if the building is re-occupied in the future.

5.4 Future Activities

Activities scheduled for 2017 include:

- 2nd Quarter groundwater sampling event – June 2017.
- Meeting with NYSDEC to determine future contaminant reduction opportunities and continued groundwater monitoring requirements.
- 3rd Quarter groundwater sampling event – September 2017.
- 4th Quarter groundwater sampling event – November 2017.
- Building Condition Assessments (2) – TBD.

TABLE 1

Table 1 Percent Reductions in Total Groundwater VOCs
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

The Groundwater Treatment System was activated in May 2005

Monitoring Well	% Reduction 2002 to Nov 2016	% Reduction 2002 to Sep 2016	% Reduction 2002 to Jun 2016	% Reduction 2002 to Nov 2015	% Reduction 2002 to Aug 2015	% Reduction 2002 to Jun 2015	% Reduction 2002 to Mar 2015	% Reduction 2002 to Nov 2014	% Reduction 2002 to Sep 2014	% Reduction 2002 to Jun 2014	% Reduction 2002 to Mar 2014	% Reduction 2002 to Dec 2013	% Reduction 2002 to Jul 2013	% Reduction 2002 to Apr 2013	% Reduction 2002 to Dec 2012	% Reduction 2002 to Jun 2012	% Reduction 2002 to Mar 2012	% Reduction 2002 to Sep 2011	% Reduction 2002 to Jun 2011	% Reduction 2002 to Mar 2011	% Reduction 2002 to Dec 2010	% Reduction 2002 to Sep 2010	% Reduction 2002 to Jun 2010	% Reduction 2002 to Jan 2010	% Reduction 2002 to Jul 2009	% Reduction 2002 to Feb 2009	% Reduction 2002 to Sep 2008	% Reduction 2002 to Jun 2008	% Reduction 2002 to Mar 2008	% Reduction 2002 to Nov 2005
MW-1[1]	-91.0%	-9.1%	24.5%	-99.2%	-91.4%	54.4%	44.0%	60.9%	45.3%	-28.9%	-28.9%	-126.6%	-8.1%	-19.5%	-87.5%	31.3%	-15.8%	42.4%	-71.6%	24.1%	26.6%	15.5%	-1.3%	15.8%	-44.2%	11.8%	-12.0%	8.2%	-90.5%	-46.9%
MW-2	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.6%	Not Sampled	99.6%	99.6%
MW-3	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.3%	99.3%
MW-4	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.00%	100.0%	100.0%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%
MW-5	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.3%	63.4%
MW-6	78.6%	70.4%	78.6%	70.4%	76.4%	78.8%	80.0%	72.9%	72.9%	76.4%	76.8%	68.0%	75.6%	77.1%	75.6%	78.6%	78.9%	75.1%	80.5%	82.0%	79.9%	73.6%	76.4%	81.3%	77.1%	78.4%	72.2%	69.7%	74.1%	42.6%
MW-7	75.6%	86.2%	75.6%	89.1%	71.1%	87.1%	100.0%	60.0%	57.8%	93.6%	100.0%	100.0%	96.0%	100.0%	100.0%	66.3%	93.2%	53.5%	84.2%	95.0%	87.1%	64.3%	74.6%	96.6%	52.7%	79.5%	22.7%	45.8%	56.3%	-1.3%
MW-8	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	92.9%	92.9%
MW-9	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	97.6%	97.6%
MW-10	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	96.2%	96.2%
MW-11	86.1%	90.4%	86.1%	77.2%	86.4%	90.4%	89.2%	90.3%	91.9%	90.3%	84.7%	81.1%	89.0%	87.7%	83.0%	89.3%	86.7%	89.1%	84.5%	86.6%	87.3%	86.4%	83.5%	83.3%	86.5%	83.0%	90.6%	87.8%	78.0%	76.3%
MW-12	99.9%	99.9%	99.9%	99.8%	99.6%	99.2%	99.1%	99.0%	98.4%	98.4%	98.3%	98.6%	98.8%	98.5%	98.9%	99.3%	98.8%	99.3%	98.7%	99.3%	99.3%	99.2%	98.7%	98.1%	99.4%	97.8%	99.5%	98.7%	98.7%	62.2%
MW-13	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	100.0%	Not Sampled	100.0%	100.0%
MW-14	75.9%	68.3%	75.9%	74.3%	69.5%	83.5%	68.6%	78.4%	78.4%	82.9%	76.8%	70.2%	84.4%	77.5%	85.1%	87.4%	75.7%	75.5%	66.7%	89.9%	92.3%	87.6%	79.3%	85.9%	87.1%	88.9%	94.3%	87.9%	90.7%	55.6%
MW-15	98.5%	96.7%	98.5%	98.6%	98.1%	98.9%	98.7%	95.6%	95.8%	99.2%	100.0%	99.1%	99.0%	100.0%	98.2%	96.4%	99.1%	95.6%	97.8%	99.1%	97.7%	91.5%	96.9%	98.3%	91.1%	99.3%	84.5%	89.4%	97.5%	62.9%
MW-16*	72.7%	60.9%	72.7%	39.5%	74.6%	86.7%	100.0%	89.8%	81.6%	59.0%	53.1%	60.9%	77.9%	36.8%	52.6%	88.5%	67.9%	84.0%	39.2%	23.9%	81.0%	93.3%	99.7%	94.2%	42.1%	41.6%	57.4%	43.9%	77.5%	-72.1%
MW-17*	62.9%	54.0%	62.9%	54.5%	59.4%	Not Sampled	66.8%	61.0%	59.4%	66.5%	83.5%	58.5%	50.6%	97.4%	46.9%	53.0%	67.9%	44.6%	72.2%	96.7%	94.1%	61.4%	71.3%	97.7%	71.8%	99.5%	10.1%	26.0%	24.7%	-24.2%
MW-18:*	97.4%	93.4%	97.4%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	Not Sampled	100.0%	100.0%	100.0%	89.6%	98.5%	81.9%	91.3%	96.0%	88.7%	74.4%	82.7%	96.0%	-23.3%	91.8%	-50.0%	27.6%	64.8%	-135.8%
MW-19 R*	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	73.3%	99.0%	99.0%	57.3%	99.0%	-36.7%	-5.7%	99.0%	-102.0%
MW-20**	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%
MW-21**	34.6%	-50.0%	34.6%	23.1%	23.1%	61.5%	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	67.5%	Not Sampled	96.7%	-13.7%
* Well installed 2003																														
** Well Installed 2004																														
Site-Wide reduction:	70.8%	68.7%	79.0%	66.2%	69.1%	87.7%	88.2%	85.2%	83.2%	79.8%	80.3%	67.5%	81.8%	81.2%	71.3%	82.9%	80.7%	79.7%	72.2%	83.7%	86.9%	78.3%	81.4%	87.9%	61.1%	82.1%	56.0%	59.7%	78.5%	35.7%
Impacted Groundwater Plume Area Only:	60.8%	69.6%	75.2%	58.6%	58.5%	84.6%	80.8%	77.3%	75.0%	72.3%	73.9%	82.2%	73.2%	77.3%	62.5%	75.2%	73.1%	71.9%	64.1%	84.1%	83.0%	72.5%	72.4%	82.1%	65.2%	79.8%	57.7%	64.2%	53.7%	28.4%

Plume Area = MW-1, MW-11, MW-12, MW-14, MW-15, MW-7, MW-17, MW-6
% reduction = percent reduction in total Volatile Organic Compounds (VOCs) since groundwater monitoring was initiated
†Negative values indicate an increase in total VOCs since monitoring commenced in 2002. The percent increase in total groundwater VOCs is shown below for MW-1.

Recovery Well	% Reduction 2002 to Nov 2016	% Reduction 2002 to Sep 2016	% Reduction 2002 to Jun 2016	% Reduction 2002 to Nov 2015	% Reduction 2002 to Aug 2015	% Reduction 2002 to Jun 2015	% Reduction 2002 to Mar 2015	% Reduction 2002 to Nov 2014	% Reduction 2002 to Sep 2014	% Reduction 2002 to Jun 2014	% Reduction 2002 to Mar 2014	% Reduction 2002 to Dec 2013	% Reduction 2002 to Jul 2013	% Reduction 2002 to Apr 2013	% Reduction 2002 to Dec 2012	% Reduction 2002 to Jun 2012	% Reduction 2002 to Mar 2012	% Reduction 2002 to Sep 2011	% Reduction 2002 to Jun 2011	% Reduction 2002 to Mar 2011	% Reduction 2002 to Dec 2010	% Reduction 2002 to Sep 2010	% Reduction 2002 to Jun 2010	% Reduction 2002 to Jan 2010	% Reduction 2002 to Jul 2009	% Reduction 2002 to Feb 2009	% Reduction 2002 to Sep 2008	% Reduction 2002 to Jun 2008	% Reduction 2002 to Mar 2008
DR-1	-7.6%	-6.4%	-58.7%	44.4%	72.1%	Not Sampled	96.2%	89.0%	90.4%	86.9%	77.0%	84.8%	99.1%	99.0%	99.5%	99.8%	91.6%	97.9%	98.1%	96.9%	95.6%	94.5%	99.2%	98.0%	95.1%	96.8%	91.0%	89.2%	93.4%
DR-2	75.1%	60.3%	75.1%	63.8%	66.0%	47.0%	52.8%	70.5%	59.2%	58.0%	62.3%	45.0%	87.2%	85.4%	99.1%	88.5%	83.9%	89.7%	88.0%	86.6%	92.4%	89.3%	87.3%	90.6%	90.1%	88.8%	89.7%	85.8%	92.3%
DR-3	35.7%	-1.0%	35.7%	70.5%	50.2%	45.6%	63.9%	-18.7%	-37.7%	45.6%	41.6%	19.3%	95.8%	95.1%	97.2%	92.1%	98.3%	95.0%	95.4%	98.3%	98.0%	97.4%	94.6%	91.6%	91.5%	88.7%	94.9%	91.7%	88.4%
DR-4	90.8%	88.9%	90.8%	89.1%	87.2%	91.7%	82.9%	81.8%	82.8%	88.8%	92.5%	90.8%	95.5%	97.9%	94.9%	93.1%	100.0%	89.2%	92.7%	94.3%	95.9%	86.9%	91.2%	95.4%	95.5%	96.2%	92.7%	97.7%	97.6%
G-1	57.7%	47.4%	57.7%	60.0%	100.0%	66.1%	27.3%	49.8%	47.7%	55.0%	61.3%	65.6%	87.3%	89.8%	90.3%	87.4%	88.0%	87.6%	89.8%	87.7%	91.0%	94.4%	80.1%	76.0%	69.9%	76.7%	77.9%	68.7%	65.8%
G-2	Not Sampled	100.0%	Not Sampled	Not Sampled	90.1%	Not Sampled	83.1%	88.0%	86.9%	81.7%	95.1%	71.4%	79.0%	87.0%	65.7%	80.4%	89.1%	92.3%	83.0%	87.7%	86.5%	98.4%	97.8%	98.5%	85.4%	40.0%	92.6%	89.8%	79.0%
G-3	27.3%	-0.2%	27.3%	35.0%	8.2%	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	79.7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Overall Reduction	46.5%	41.3%	38.0%	60.4%	67.7%	62.6%	67.7%	60.1%	54.9%	69.3%	72.8%	62.8%	90.7%	92.3%	91.1%	90.2%	91.8%	91.9%	91.1%	91.9%	93.2%	93.5%	91.7%	91.7%	87.9%	81.2%	89.8%	87.2%	86.1%

*Sampling of recovery wells initiated in 2005

Monitoring Well	% Increase 2002 to Nov 2016	% Increase 2002 to Sep 2016	% Increase 2002 to Jun 2016	% Increase 2002 to Nov 2015	% Increase 2002 to Aug 2015	% Increase 2002 to Jun 2015	% Increase 2002 to Mar 2015	% Increase 2002 to Nov 2014	% Increase 2002 to Sep 2014	% Increase 2002 to Jun 2014	% Increase 2002 to Mar 2014	% Increase 2002 to Dec 2013	% Increase 2002 to Jul 2013	% Increase 2002 to Apr 2013	% Increase 2002 to Dec 2012	% Increase 2002 to Jun 2012	% Increase 2002 to Mar 2012	% Increase 2002 to Sep 2011	% Increase 2002 to Jun 2011	% Increase 2002 to Mar 2011	% Increase 2002 to Dec 2010	% Increase 2002 to Sep 2010	% Increase 2002 to Jun 2010	% Increase 2002 to Jan 2010	% Increase 2002 to Jul 2009	% Increase 2002 to Feb 2009	% Increase 2002 to Sep 2008	% Increase 2002 to Jun 2008	% Increase 2002 to Mar 2008	% Increase 2002 to Nov 2005
MW-1[†]	NA	8.4%	NA	49.8%	47.8%	NA	NA	NA	NA	22.4%	22.4%	55.9%	7.5%	16.3%	46.7%	NA	13.6%	NA	41.7%	NA	NA	NA	100.0%	NA	30.6%	NA	100.0%	NA	47.5%	31.9%
MW-21[†]	NA	33.3%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DR-1[†]	7.1%	6.0%	37.0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DR-3[†]	NA	1.0%	NA	NA	NA	NA	NA	15.7%	27.4%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G-3[†]	NA	0.2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

†Negative values indicate an increase in total VOCs since monitoring commenced in 2002. The percent increase in total groundwater VOCs is shown above for MW-1, DR-1 and DR-3.

FIGURE 1

DASNY

Gowanda Day Habilitation Center

4 Industrial Place
Gowanda, NY

Bergmann associates
architects // engineers // planners

0 40 80 120 160
Feet

Figure 1

Monitoring and Recovery Well Locations

CHART 1

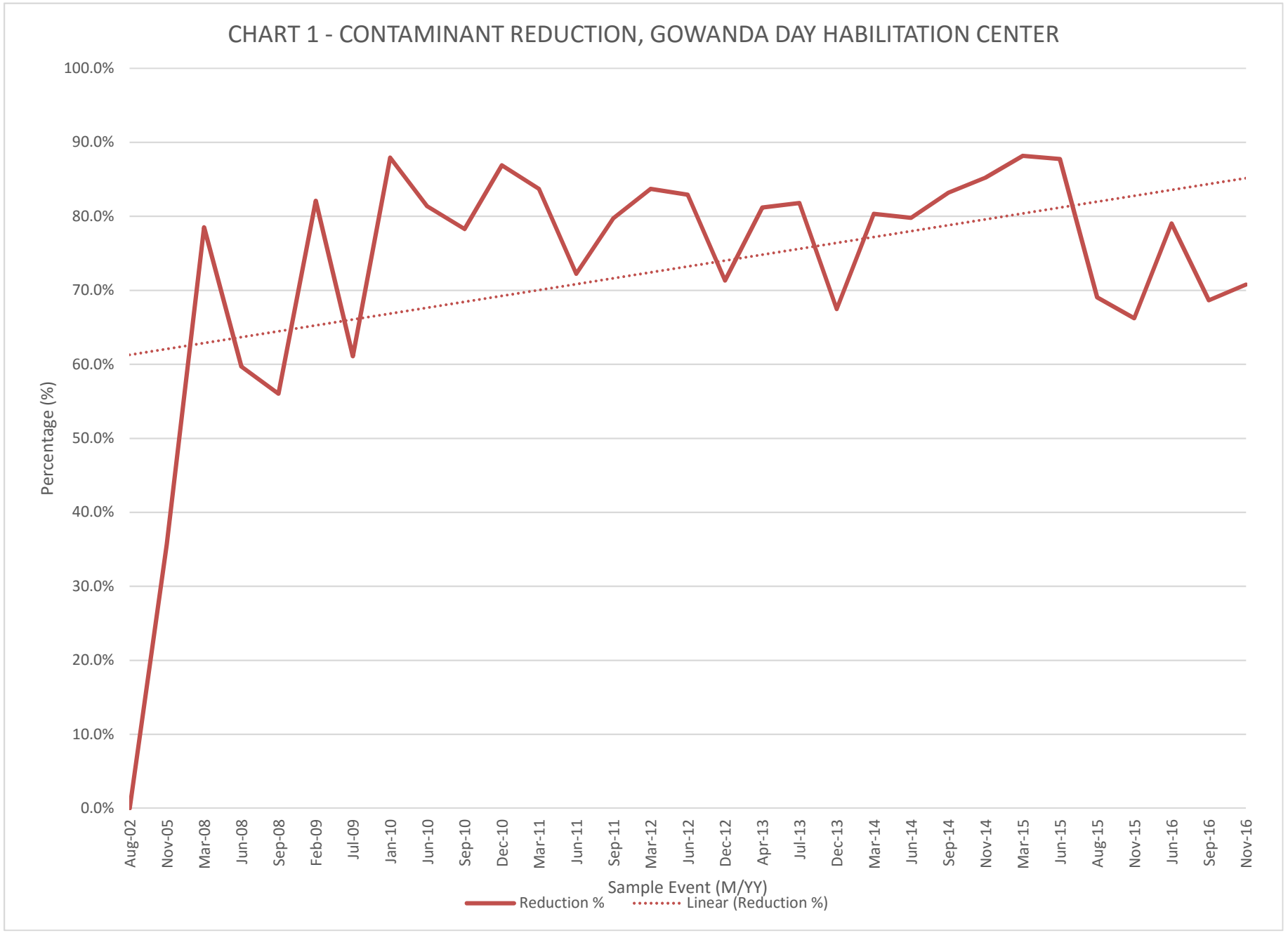
CHART 1 - CONTAMINANT REDUCTION, GOWANDA DAY HABILITATION CENTER
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
Percentage (%)
Aug-02
Nov-05
Mar-08
Jun-08
Sep-08
Feb-09
Jul-09
Jan-10
Jun-10
Sep-10
Dec-10
Mar-11
Jun-11
Sep-11
Mar-12
Jun-12
Dec-12
Apr-13
Jul-13
Dec-13
Mar-14
Jun-14
Sep-14
Nov-14
Mar-15
Jun-15
Aug-15
Nov-15
Jun-16
Sep-16
Nov-16
Sample Event (M/YY)
Reduction %
Linear (Reduction %)

APPENDIX A

QUARTERLY GROUNDWATER CHARACTERIZATION REPORTS

Bergmann associates
architects // engineers // planners

JUNE 2016

GROUNDWATER CHARACTERIZATION REPORT

NEW YORK STATE OFFICE OF PEOPLE WITH DEVELOPMENTAL DISABILITIES

GROUNDWATER CHARACTERIZATION REPORT
JUNE 2016 SAMPLING EVENT

Former Gowanda Day Habilitation Center
4 Industrial Place
Town of Gowanda, Cattaraugus County
Voluntary Cleanup Program Agreement V-00463-9

Prepared for:

Dormitory Authority & New York State Office of People with Developmental Disabilities

Bergmann Project No. 6974.85

Issuance Date: September 27, 2016

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CHARTS

APPENDICES

1.0 Introduction

Bergmann Associates (Bergmann) is submitting this groundwater characterization report for the June 2016 sampling event on behalf of the Dormitory Authority of the State of New York (DASNY) and the New York State Office of People with Developmental Disabilities (OPWDD) for activities conducted at the former Gowanda Day Habilitation Center facility at 4 Industrial Place, Gowanda, NY. The OPWDD, as the volunteer, has entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC) to conduct investigations and implement remedial measures in accordance with VCA Site No. V-00463-9, effective August 16, 2001.

1.1 Scope of Work

This report documents the site-wide groundwater monitoring and laboratory analytical sampling event conducted on June 28-29, 2016. Field measurements, sampling procedures and laboratory analysis were conducted in accordance with the October 2006 Operations, Monitoring and Maintenance (OM&M) Manual and as modified with NYSDEC approval. During this sampling event, groundwater from 14 of 21 site-related groundwater monitoring wells and 6 of 7 groundwater recovery wells were sampled for laboratory analysis. Of the 8 monitoring wells determined by the NYSDEC and Bergmann personnel in 2008 to be outside the area of impact by the Groundwater Treatment System (GTS), 7 were not sampled. These monitoring wells include MW-2, MW-3, MW-5, MW-8, MW-9, MW-10 and MW-13. Monitoring well MW-21 was added to the well sampling plan permanently by NYSDEC to monitor groundwater migration off-site.

The prior groundwater sampling event was conducted in November 2015 and included analysis of groundwater samples from 14 of 21 site-related groundwater monitoring wells and 6 of 7 groundwater recovery wells. Results of the November 2015 sampling event were summarized in a report dated March 21, 2016.

1.2 Site Background

The Gowanda Day Habilitation site consists of a 5.94 acre parcel located at 4 Industrial Place. The building, previously used by several manufacturing operations, was built in stages between circa 1948 and 1987 and was renovated in 1987-1988. New York State agencies have occupied the building since 1982. New York State acquired the parcel in 1989. The building was most recently operated by the OPWDD, which at that time was known as the Western New York Developmental Disabilities Services Office, as a Day Habilitation Center for mental care clients. In April 2001, on-site operations ceased. The nature and extent of contamination at the Gowanda Day Habilitation Center was detailed as part of the 2003 Site Investigation and 2004 Supplemental Site Investigation Reports. Trichloroethene (TCE) was the most commonly detected compound. TCE degradation products cis-1,2,Dichloroethene (Cis-1,2-DCE), trans-1,2-Dichloroethene (Trans-1,2-DCE) and Vinyl Chloride (VC) were also detected.

Following Interim Remedial Measure (IRM) system installation, the Groundwater Treatment System (GTS) and the Soil Vapor Extraction System (SVES) were activated on May 10, 2005, recovering 2-5 gallons per minute (gpm) of groundwater. An additional groundwater recovery well, designated G-3, was installed outside the building and adjacent to MW-17 in November 2008. The GTS portion consists of 7 groundwater recovery wells (4 dual phase recovery wells and 3 groundwater-only recovery wells), an air compressor, a network of controller-less pneumatic pumps and an air stripper treatment system to process recovered groundwater. Recovered groundwater was pumped to the equalization tank for settling of the sediment and transferred to the air stripper using a consistent flow rate. Air discharge from the air stripper was routed to the EVE for treatment prior to discharge. Groundwater was discharged to the village of Gowanda Sewage Treatment Plant (STP).

In January 2008, the building was decommissioned. The GTS was winterized with the addition of heat tape and insulation to conveyance lines and the installation of an independently operated suspended heater in the treatment area for the GTS and SVES (former Machine Shop). Quarterly groundwater sampling with Operation and Maintenance of the remediation system has been ongoing since 2002.

During January 2014, the condition of the SVE and GTS was discussed with the NYSDEC representative and it was agreed that these systems would be inactivated to allow for groundwater level recovery during the preparation of an ISCO remedial action plan (RAP) and implementation of an ISCO treatment. Bergmann submitted an ISCO RAP for groundwater treatment to the NYSDEC to address remaining contamination at the Site in lieu of costly repair of the SVE and GTS. The SVE and GTS equipment will remain on site in the event that re-activation is required in the future. The ISCO was implemented in May 2015. An ISCO Report was prepared under separate cover.

2.0 Groundwater Sampling Overview and Methods

2.1 Well Maintenance Activities

During the June 2016 site visit, all monitoring wells were accessible and the integrity of the wells was not compromised. Repairs or maintenance to the network of groundwater monitoring wells or recovery wells has not been required since June 2007, with the exception of the redevelopment activities performed on August 19, 2015. All protective casings and flush-mount curb boxes were found to be intact and secure. Exterior monitoring wells are secured with locking stick-up protective casings. The monitoring wells within the building are secured with flush-mount roadway covers. Well maintenance was not performed during the June 2016 sampling event.

2.2 Groundwater Field Monitoring and Sampling Activities

Groundwater measurements and sampling activities were conducted in accordance with the October 2006 OM&M Manual. The depths to groundwater for groundwater monitoring wells are determined on a regular basis to track site-wide changes in the water table elevation and to allow for adjustment at recovery wells. Past operation of the recovery wells was intended to establish hydraulic containment of the plume of impacted groundwater beneath the former Day Habilitation building and improve recovery and treatment of impacted groundwater. Groundwater samples were collected from 14 of the 21 site-related groundwater monitoring wells for laboratory analysis on June 28-29, 2016. Depth to groundwater measurements were obtained from 27 wells (including recovery wells).

Groundwater samples were collected from monitoring wells after each well was gauged and purged of standing water via low-flow pumping using a Geo-pump electric peristaltic pump. Sample parameters including turbidity, temperature, pH, oxygen, salinity and conductivity were monitored using a Horiba U-53 to ensure sufficient well purging prior to sampling. Groundwater samples were collected from recovery wells using dedicated bailers, to allow for an accurate representation of groundwater without collecting sediment from within the wells. A single duplicate sample and a field blank sample were collected and submitted for laboratory analysis. The duplicate sample was collected after sampling MW-1, the well with the highest concentration of contamination for historic sampling events.

Groundwater samples were delivered via chain-of-custody protocol to ALS Environmental Services located in Rochester, NY, a NYSDOH certified laboratory, for testing using EPA Method 8260B for targeted chlorinated volatile organic compounds (VOCs) of concern. Analytical results for each individual monitoring well have been posted for comparative purposes from sampling events completed 2002 – 2015.

3.0 Local Groundwater Flow Characterization

The Site water table potentiometric surface pattern and groundwater flow direction was determined for June 2016 using elevations measured at each well. Groundwater elevations and well reference elevations were calculated using depth to water values obtained on June 28, 2016. The well gauging values and groundwater elevations are provided in Table 1 – Groundwater Elevations and Field Measurements June 2016.

The June 2016 groundwater contour map shows a flow pattern similar to groundwater contours observed historically since 2002. Groundwater at the Site is flowing in a northerly direction. Torrance Place is hydraulically down-gradient from the Day Habilitation Center building. The June 2016 depths to groundwater range from 7.11 ft below top of casing (btoc) at MW-2, located on the south side of the property to 13.48 ft btoc at MW-6 located at the northern property line. The average depth to groundwater at the wells measured was 10.03 ft bgs.

The site-wide average depth to water table increased by approximately 0.61 ft when compared to the June 2016 sampling event. This increase in the water table is inferred as seasonal.

Measured depth to water at all gauged monitoring and recovery wells is presented Table 1 and June 2016 Groundwater Contours are presented on Figure 1 – June 2016 Groundwater Contour Map.

4.0 Laboratory Analysis

4.1 Laboratory Analysis on Groundwater Samples

Laboratory analysis was completed on the groundwater samples from 14 monitoring wells and 6 recovery wells collected June 28-29, 2016. Samples were analyzed for VOCs via EPA Method 8260B. Analysis was performed in accordance with the October 2006 OM&M Manual. The following halogenated VOCs were analyzed for:

- Trichloroethene (TCE)
- 1,1,1 Trichloroethane (TCA)
- Cis-1,2-Dichloroethene (Cis-DCE)
- Trans-1,2-Dichloroethene (Trans-DCE)
- Vinyl Chloride (VC)

4.2 Monitoring Well Groundwater Analysis Summary

The June 2016 analytical results indicate 2 chlorinated VOCs in monitoring well samples: TCE and Cis-DCE. Chlorinated VOCs were detected in groundwater from 10 of the 14 sampled monitoring wells. Analytical results are summarized in Table 2 – June 2016 Analytical Results Summary, which compares detected VOCs and applicable NYSDEC Class GA Standards for each analyte. The complete laboratory analytical reporting package is provided in Appendix A – Laboratory Analytical Results Report June 2016 Sampling Event. Table 3 – Historic Groundwater Analysis Results Summary includes the historical total VOC concentrations at each well since sampling of the monitoring wells began in 2002.

VOCs were not detected in groundwater from 3 of the sampled monitoring wells (MW-4, MW-19R, and MW-20). Sample results from these wells have historically indicated low to non-detect levels of VOCs.

Groundwater samples from 11 monitoring wells had detectable chlorinated VOCs at concentrations above applicable Class GA Standards. The monitoring well with the highest total VOCs, MW-1 (580 ppb), is located in the area of the historically greatest impacted groundwater.

Concentrations in 4 of the 14 monitoring well groundwater samples increased when compared to the November 2015 sampling event while concentrations in 7 of the 14 monitoring well groundwater samples decreased. Concentrations in 3 groundwater samples from monitoring wells had no change. The current sampling analytical results indicate an average site-wide decrease in total VOCs of approximately 79% since activation of the GTS in May 2005.

Due to high concentrations of TCE and Cis-DCE in the samples from monitoring wells MW-1, MW-11, MW-17, DR-1 and G-3, diluted analysis and correspondingly elevated detection limits were required. It is

possible that related chlorinated VOCs Trans-1,2 DCE and Vinyl Chloride may be present at concentrations below the elevated detection limits for these samples.

The area of highest impacted groundwater exists at the area centered between monitoring wells MW-1 and MW-11, which has historically indicated the highest levels of VOCs and is inferred as the source area of impacted groundwater. In the area where the plume of impacted groundwater is inferred (monitoring wells MW-1, MW-6, MW-7, MW-11, MW-12, MW-14, MW-15, and MW-17) the current laboratory analysis shows a contaminant reduction in VOC concentrations by an average of approximately 73% since groundwater monitoring of these wells began in 2002.

Monitoring well MW-1 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at monitoring well MW-1 for the June 2016 sampling event is 580 parts per billion (ppb), a decrease from the November 2015 value of 1,530 ppb. Since activation of the GTS, detected VOCs at MW-1 have decreased by 0.2%.

Monitoring well MW-11 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-11 for the June 2016 sampling event is 550 ppb, a decrease from the November 2015 value of 1,060 ppb. Since activation of the GTS, detected VOCs at MW-11 have decreased by 88%.

Monitoring well MW-12 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-12 for the June 2015 sampling event is 15.8 ppb, a decrease from the November 2015 value of 28.8 ppb. MW-12 is nearest to recovery well DR-2, in close proximity to the center of the building. Since activation of the GTS in May 2005, detected VOCs at MW-12 have decreased by 100%.

Monitoring well MW-14 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-14 for the June 2016 sampling event is 57 ppb, a decrease from the November 2015 value of 81 ppb. MW-14 is nearest to recovery well DR-3. Since activation of the GTS in May 2005 detected VOCs at MW-14 have decreased by 82%.

Monitoring well MW-15 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-15 for the June 2016 sampling event is 11 ppb, an increase from the November 2015 value of 9.9 ppb. MW-15 is nearest to recovery well DR-4. Since activation of the GTS the detected VOCs at MW-15 have decreased by 99%.

Five groundwater monitoring wells are located along the subject property's north perimeter, down-gradient from the area of impacted groundwater. The north perimeter monitoring wells consist of wells MW-5, MW-6, MW-7, MW-16, MW-17 and MW-21. MW-5 has not been sampled since the March 2008 sampling event. Analytical results are discussed below. The current analytical results exhibit an increase in targeted VOCs at the sampled monitoring wells along the north perimeter.

Monitoring wells MW-18, MW-19R and MW-21 are located off-site along Torrance Place. These three wells are considered to be beyond the radius of influence for the Day Habilitation groundwater treatment system. The current results indicate non-detect for MW-18 and MW-19R. Monitoring well MW-21 was added to the sampling list at the request of the NYSDEC beginning with the June 2015 sampling event. The total VOC concentration at MW-21 for the June 2016 sampling event is 8.7 ppb, a decrease from the November 2015 value of 20 ppb. Monitoring well MW-21 is located north-northwest of the Site, on the opposite side of Thatcher Brook.

Laboratory analytical results are included in Appendix A. Monitoring well locations and distribution of analytical results are shown on Figure 2 – November 2015 Distribution of Groundwater Analytical Results: Monitoring Wells.

4.3 Sentry Well Groundwater Analysis Summary

Sentry groundwater monitoring wells monitor a separate occurrence of contaminated groundwater at the Gowanda Electronics site (NYSDEC Site 905025), immediately east of Industrial Place and east of the Day Habilitation Center property. The eastern sentry wells sampled for this event included MW-19R, MW-20 and MW-4. The current results indicate non-detect for all three samples from the eastern sentry wells.

The Gowanda Electronics impacted groundwater plume may be migrating to an area near Industrial Place and has intermittently impacted MW-19R. The Gowanda Electronics impacted groundwater plume does not appear to extend to the Day Habilitation Center property, based on consistent non-detect values at the eastern sentry wells. Conversely, impacted groundwater from the Day Habilitation Center does not appear to extend off-site to the east toward Industrial Place. According to Mr. Chris Sanson, an Environmental Scientist for Groundwater & Environmental Services, Inc. (GES), an ISCO was implemented for the Gowanda Electronics site in March 2014.

Laboratory analytical results are included in Appendix A. Sentry well locations and analytical results are shown on Figure 2.

4.4 Recovery Well Groundwater Analysis Summary

During the June 2016 sampling event, 6 of the 7 recovery wells were sampled. Recovery well G-2 was dry and was therefore not sampled. Recovery well G-3 was mislabeled in the field as G-2. Sample results on the laboratory analytical report included in Appendix A referring to G-2 are the results for G-3.

The June 2016 analytical results indicate detection of 2 chlorinated VOCs in recovery well samples: TCE and Cis-DCE. Chlorinated VOCs were detected in samples from all 6 of the sampled recovery wells. Total VOCs at the 6 recovery wells for which past data is available have decreased since activation of the GTS in May 2005. The average reduction in VOCs for the current sampling event is 47% relative to concentrations prior to GTS activation in 2005. Relative percent reductions in total VOCs for all monitoring wells and recovery wells are shown on Table 4 – Percent Reductions in Total Groundwater VOCs.

Recovery well DR-1 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-1 for the June 2016 sampling event is 910 ppb, an increase from the November 2015 value of 319 ppb. The current sampling event indicates an increase in VOCs at DR-1 of 37% since activation of the GTS. Recovery well DR-1 is located closest to MW-1 in the area of historically highest concentrations.

Recovery well DR-2 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-2 for the June 2016 sampling event is 215 ppb, an increase from the November 2015 value of 199 ppb. The current sampling event indicates a decrease in VOCs at DR-2 of 61% since activation of the GTS.

Recovery well DR-3 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-3 for the June 2016 sampling event is 62 ppb, an increase from the November 2015 value of 45 ppb. The current sampling event indicates a decrease in VOCs at DR-3 of 59% since activation of the GTS.

Recovery well DR-4 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-4 for the June 2016 sampling event is 63 ppb, a decrease from the November 2015 value of 94 ppb. The current sampling event indicates a decrease in VOCs at DR-4 of 93% since activation of the GTS.

Recovery well G-1 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at G-1 for the June 2016 sampling event was 60 ppb, a decrease from the November

2015 value of 80 ppb. The current sampling event indicates a decrease in VOCs at G-1 of 93% since activation of the GTS.

Recovery well G-2 was dry during the June 2016 sampling event and was therefore not sampled. During the June 2016 sampling event, the sample collected from recovery well G-3 was mislabeled as G-2.

Recovery well G-3 (labeled in the field and on the laboratory analytical report as G-2) increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at G-3 for the June 2016 sampling event is 420 ppb, an increase from the November 2015 value of 262 ppb. The current sampling event indicates an increase in VOCs at G-3 of 4% since activation of the GTS. Recovery well G-3 is located along the northern property boundary.

Laboratory analytical results are included in Appendix A. Recovery well locations and analytical results are shown on Figure 3 – June 2016 Distribution of Groundwater Analytical Results: Recovery Wells.

4.5 Quality Assurance and Quality Control Samples

For quality assurance purposes a duplicate groundwater sample was collected from monitoring well MW-1, designated sample "MW-X." Results from sample MW-X were consistent with the sample collected from MW-1.

A trip blank was not supplied by the laboratory for the June 2016 sampling event. An equipment blank was collected to ensure proper cleaning of the sampling equipment. The equipment blank, designated as EB, was non-detect for chlorinated halogens.

Laboratory analytical results are included in Appendix A.

5.0 Remediation System Efficiency

5.1 Impact of the GTS Recovery Wells

Groundwater control charts for the 6 sampled recovery wells and the nearest relative monitoring well were created to illustrate the impact of the GTS on recovery wells at the Day Habilitation Center. Chart 1 presents a summary of the sampled groundwater recovery wells. Since activation of the GTS in May 2005, all 7 groundwater recovery wells have demonstrated a general decrease in VOC concentration.

The current sampling event results represent an increase of total VOCs at 4 recovery wells (DR-1, DR-2, DR-3 and G-3) when compared to the November 2015 sampling event. This increase may be attributed to residual contamination in the sand pack of the recovery wells due to the shutdown of the GTS and the movement of sand pack and sediment during the ISCO injections completed in May 2015 and September 2015.

Chart 2 displays the relationship between monitoring wells MW-1, MW-11 and recovery well DR-1. The current total VOCs at MW-1 (580 ppb) show a decrease from the November 2015 sampling event (1,000 ppb). The current total VOCs at MW-11 (550 ppb) shows a decrease from the November 2015 sampling event (1,060 ppb). The current total VOCs at DR-1 (910 ppb) show an increase from the November 2015 sampling event (319 ppb). This increase may be attributed to residual contamination in the sand pack of the recovery wells due to the shutdown of the GTS and the movement of sand pack and sediment during the ISCO injections completed in May 2015 and September 2015.

Chart 3 compares laboratory results between recovery well DR-2 and MW-12. These wells are located north of the wells outlined in Chart 1 and represent the northern limit of the highest concentration within the impacted area. The current total VOCs at MW-12 (15.8 ppb) show a decrease from the November 2015 sampling event (28.8 ppb). The current total VOCs at recovery well DR-2 (215 ppb) show a slight increase from the November 2015 sampling event (199 ppb).

Chart 4 compares the relationship between wells DR-3 and MW-14 which are located in the central portion of the Gowanda Day Habilitation building. The current total VOCs at MW-14 (57 ppb) show a decrease from the November 2015 sampling event (81 ppb). The current total VOCs at recovery well DR-3 (62 ppb) show an increase from the November 2015 sampling event (45 ppb).

Chart 5 compares laboratory results between recovery well DR-4 and MW-15. These wells are located at the center-north portion of the building. The current total VOCs at MW-15 (11 ppb) show a slight increase from the November 2015 sampling event (9.9 ppb). The current total VOCs at recovery well DR-4 (63 ppb) show a decrease from the November 2015 sampling event (94 ppb).

Chart 6 compares laboratory results between recovery well G-1 and monitoring well MW-17. The recovery well is located in the northern portion of the building and MW-17 is located along the northern property line. The current total VOCs at recovery well G-1 (59.7 ppb) show a decrease from the November 2015 sampling event (80.3 ppb).

Chart 7 compares laboratory results between recovery well G-2 and MW-7 which are located at the northeastern portion of the building. This area is at the apparent western perimeter of the area of impacted groundwater. Recovery well G-2 was not sampled during the June 2016 or November 2015 sampling events, as the well was dry during these events. The August 2015 total VOCs (28 ppb) showed a decrease from the March 2015 sampling event (48 ppb).

Chart 8 compares laboratory results between recovery well G-3 which is located at the northeastern portion of the building and MW-17 which is located along the northern property boundary. This area is at the western perimeter of the apparent area of impacted groundwater. The current total VOCs at recovery well G-3 (420 ppb) show an increase from the November 2015 sampling event (262 ppb). Groundwater sampling results from monitoring wells along the western and eastern perimeters have consistently been non-detect.

5.2 Extent of Impacted Groundwater

The area of highest impacted groundwater is consistent with prior sampling events. The bulk of the contaminant mass appears to be concentrated beneath the building in the source area, in the vicinity of monitoring well MW-1 and MW-11, extending north to recovery well DR-2. Concentration of VOCs in the source area have been reduced as a result of cleanup activities.

When operating, the GTS maintained an area of hydraulic containment for recovery wells within the source area of impacted groundwater. The GTS was successful in hydraulically containing most of the contaminant plume on the property and minimizing further migration. The GTS was not operating during this monitoring period and overall sample results are similar to previous quarterly sampling results. Therefore, residual VOCs in the plume have not migrated and appear to be stabilized when compared to sample results with operation of the GTS during previous monitoring events.

VOCs were not detected at MW-19R during the June 2016 sampling event. Monitoring well MW-21 was added to the sampling plan at the request of the NYSDEC. The total VOC concentration at MW-21 for the current sampling event (8.7 ppb) is the lower than the November concentration (20 ppb). MW-19R, MW-18 and MW-21 are off-site monitoring wells located north of the facility. These monitoring points are inferred as beyond the area of hydraulic influence of the recovery wells. Impacted groundwater at these areas was detected prior to activation of the GTS in May 2005.

The redevelopment of wells performed in fall 2015 at the Site was performed to remove sediment from wells at the Site after the ISCO in-situ injections. Overall reduction of contaminants in the majority of the monitoring and recovery wells has occurred at the Site when viewed over the past 10 years of sampling. A meeting with Bergmann, DASNY and NYSDEC should be scheduled to determine next steps for further contaminant reduction and eventual spill closure.

5.3 Future Groundwater Monitoring and Analysis Activities

The condition of the SVE and GTS was discussed with the NYSDEC representative and it was agreed that these systems would be inactivated to allow for groundwater level recovery during the implementation of an ISCO groundwater treatment and subsequent sampling events. Bergmann performed an ISCO RAP in May (round 1) and September (round 2) 2015 to address remaining residual contamination at the Site in lieu of costly repair of the SVE and GTS. The SVE and GTS equipment remains on site in the event that re-activation is required in the future; however, system components may need repair and/or replacement. Three routine quarterly monitoring events are required to complete NYSDEC requirements for the ISCO groundwater treatment.

Activities scheduled for the 2nd Quarter 2016 include:

- 2nd t Quarter groundwater sampling event.

Activities scheduled for the 3rd Quarter 2016 include:

- 3rd Quarter groundwater sampling event.
- Disposal of waste material associated with GTS.

The next site-wide groundwater sampling and laboratory analysis event is scheduled for September 2016. This sampling event will include sampling and laboratory analysis for the limited number of wells as determined by Bergmann correspondence with the NYSDEC. Future sampling and analytical events will be conducted to track the effects of the treatment system and ISCO treatment on impacted groundwater and to evaluate seasonal changes in water table elevations. In addition, the evaluation of groundwater flow pattern and movement of residual impacted groundwater at the site will be performed during future sampling events.

TABLES

Table 1 Groundwater Elevations and Field Measurements June 2016
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
Casing Elevation*	778.23	778.08	778.38	778.43	778.61	781.10	780.94	781.33	782.61	780.02
Depth to Groundwater (btoc)	7.28	7.11	7.53	7.98	10.98	13.48	13.28	10.53	10.53	9.95
Groundwater Elevation	770.95	770.97	770.85	770.45	767.63	767.62	767.66	770.80	772.08	770.07
Well Diameter	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Product Thickness	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Well Depth (btoc)	16.02	17.15	16.30	15.78	13.95	22.88	21.80	17.65	20.96	19.42
Bottom of Well Elevation	762.21	760.93	762.08	762.65	764.66	758.22	759.14	763.68	761.65	760.60
Thickness of Water Column	8.74	NA	8.77	7.80	2.97	9.40	8.52	7.12	10.43	9.47
Minimum Purge Volume (gal)	1.4	NA	1.4	1.3	0.5	1.5	1.4	1.2	1.7	1.5
3 Volumes	4.3	NA	4.3	3.8	1.5	4.6	4.2	3.5	5.1	4.6
Actual volume purged	4.3	NS	NS	3.8	NS	4.6	4.2	NS	NS	NS
Comments	Flush = -0.29'	Flush = -0.30'	Flush = -0.23'	Flush = -0.34'	Flush = -0.24'	Stickup=2.17'	Stickup=2.17'	Stickup=2.84'	Stickup=2.05'	Stickup=2.56'

	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19R	MW-20	MW-21
Casing Elevation	778.58	778.50	778.39	778.43	778.38	780.43	779.85	776.39	774.2	778.04	774.76
Depth to Groundwater (btoc)	7.88	7.88	10.07	10.62	10.62	12.72	13.37	9.78	8.54	10.13	9.54
Groundwater Elevation	770.70	770.62	768.32	767.81	767.76	767.71	766.48	766.61	765.66	767.91	765.22
Well Diameter	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Product Thickness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Well Depth (btoc)	15.48	17.38	17.40	18.15	19.80	23.26	25.18	25.0	17.67	14.75	15.82
Bottom of Well Elevation	763.10	761.12	760.99	760.28	758.58	757.17	754.67	751.39	756.53	763.29	758.94
Thickness of Water Column	7.60	9.50	7.33	7.53	9.18	10.54	NA	15.22	9.13	4.62	6.28
Minimum Purge Volume (gal)	1.2	1.5	1.2	1.2	1.5	1.7	NS	2.5	1.5	0.8	1.02
3 Volumes	3.7	4.6	3.6	3.7	4.5	5.2	NS	7.4	4.5	2.3	3.1
Actual volume purged	3.7	4.6	NS	3.7	4.5	5.2	NS	7.4	4.5	2.3	NS
Comments	Flush = -0.23'	Flush = -0.35'	Flush = -0.48'	Flush = -0.39'	Flush = -0.38	Stickup=2.26'	Stickup=1.18'	Flush =-0.26'	Flush ='0.36'	Flush=-0.43'	Flush =-.71'

	DR-1	DR-2	DR-3	DR-4	G-1	G-2	G-3
Casing Elevation	779.66	779.93	779.78	779.64	779.83	779.72	NA
Depth to Groundwater (btoc)	8.10	8.33	11.23	11.25	11.45	NA	10.60
Groundwater Elevation	771.56	771.60	768.55	768.39	768.38	NA	NA
Well Diameter	4"	4"	4"	4"	4"	4"	4"
Product Thickness	ND	ND	ND	ND	ND	ND	ND
Well Depth (btoc)	18.06	18.06	20.45	19.69	22.98	20.72	~27.00
Bottom of Well Elevation	761.6	761.87	759.33	759.95	756.85	759	NA
Thickness of Water Column	9.96	9.73	9.22	8.44	11.53	NA	NA
Minimum Purge Volume (gal)	6.50	6.35	6.02	5.51	7.53	NS	NS
3 Volumes	19.51	19.06	18.06	16.53	22.59	NS	NS
Actual volume purged	19.51	19.06	18.06	16.53	22.59	NS	NS
Comments	Stickup=0.85'	Stickup=1.06'	Stickup=0.95'	Stickup=0.84'	Stickup=1.03'	Stickup=0.86'	

NOTES

btoc = Below top of casing (inner riser) All measurements are in feet, referenced to Mean Sea Level
ND = No floating product encountered
Minimum purge volume = 3 X well volume, 0.163 gallon per foot in a 2" diameter well. 0.653 gallon per foot in a 4" diameter well.
Monitoring well MW-19 was removed and the area restored on July 23, 2003 immediately after the well was developed, purged of 3 volumes and sampled.
The borehole for MW-19 was backfilled with a cement-bentonite grout after the PVC screening and casing was successfully removed.
Wells MW-19R, MW-20 and MW-21 were installed in October 2004.

Table 2 June 2016 Analytical Results Summary

Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-1 Sample Date: 06/29/2016

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**390**	**1,000**	5.0
CIS	**190**	**530**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	580	1,530	

Monitoring Well MW-2 Sample Date: NS

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-3 Sample Date: NS

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-4 Sample Date: 06/28/2016

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

Monitoring Well MW-5 Sample Date: NS

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-6 Sample Date: 06/28/2016

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**100**	**120**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	100	120	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 June 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-7 Sample Date: 06/28/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**83**	**49**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	83	49	

Monitoring Well MW-8 Sample Date: NS
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-9 Sample Date: NS
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-10 Sample Date: NS
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-11 Sample Date: 06/28/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**250**	**500**	5.0
CIS	**300**	**560**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	550	1,060	

Monitoring Well MW-12 Sample Date: 06/28/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**5.8**	**8.8**	5.0
CIS	**10**	**20**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	15.8	28.8	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 June 2016 Analytical Results Summary

Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-13 Sample Date: NS

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-14 Sample Date: 06/28/2016

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**34**	**39**	5.0
CIS	**23**	**42**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	57	81	

Monitoring Well MW-15 Sample Date: 06/28/2016

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**11**	**9.9**	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	11	9.9	

Monitoring Well MW-16 Sample Date: 06/28/2016

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**37**	**31**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	37	31	

Monitoring Well MW-17 Sample Date: 06/29/2016

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**95**	**120**	5.0
CIS	**330**	**340**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	425	460	

Monitoring Well MW-18 Sample Date: 06/28/2016

Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**6.9**	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	6.9	ND	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 June 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-19R Sample Date: 06/28/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

Monitoring Well MW-20 Sample Date: 06/28/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

Monitoring Well MW-21 Sample Date: 06/28/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**8.7**	**20**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	8.7	20	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 June 2016 Analytical Results Summary

Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Recovery Well DR-1 Sample Date: 06/29/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**750**	**240**	5.0
CIS	**160**	**66**	5.0
TRANS	ND	**13**	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	910	319	

Recovery Well DR-2 Sample Date: 06/29/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**35**	**49**	5.0
CIS	**180**	**150**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	215	199	

Recovery Well DR-3 Sample Date: 06/29/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**31**	**29**	5.0
CIS	**31**	**16**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	62	45	

Recovery Well DR-4 Sample Date: 06/29/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**39**	**33**	5.0
CIS	**24**	**61**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	63	94	

Recovery Well G-1 Sample Date: 06/29/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**6.7**	**7.3**	5.0
CIS	**53**	**73**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	59.7	80.3	

Recovery Well G-2 Sample Date: NS
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 June 2016 Analytical Results Summary

Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Recovery Well G-3 Sample Date: 06/29/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**110**	**72**	5.0
CIS	**310**	**190**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	420	262	

Duplicate Blank Sample Date: 06/29/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	**370**	**1200**	5.0
CIS	**180**	**520**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	550	1,720	

Equipment Blank Sample Date: 06/29/2016
Sampling Events

Analyte in ppb	Jun 2016	Nov 2015	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 3 Historic Groundwater Analysis Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

MONITORING WELLS

Monitoring Well Number	Total VOCs Jun 2016 (ppb)	Total VOCs Nov 2015 (ppb)	Total VOCs Aug 2015 (ppb)	Total VOCs Jun 2015 (ppb)	Total VOCs Mar 2015 (ppb)	Total VOCs Nov 2014 (ppb)	Total VOCs Sep 2014 (ppb)	Total VOCs Jun 2014 (ppb)	Total VOCs Mar 2014 (ppb)	Total VOCs Dec 2013 (ppb)	Total VOCs Jul 2013 (ppb)	Total VOCs Apr 2013 (ppb)	Total VOCs Dec 2012 (ppb)	Total VOCs Jun 2012 (ppb)	Total VOCs Mar 2012 (ppb)	Total VOCs Sep 2011 (ppb)	Total VOCs Jun 2011 (ppb)	Total VOCs Mar 2011 (ppb)	Total VOCs Dec 2010 (ppb)	Total VOCs Sep 2010 (ppb)	Total VOCs Jun 2010 (ppb)	Total VOCs Jul 2009 (ppb)	Total VOCs Feb 2009 (ppb)	Total VOCs Sep 2008 (ppb)	Total VOCs Jun 2008 (ppb)	Total VOCs Mar 2008 (ppb)	Total VOCs Sep 2007 (ppb)	Total VOCs May 2007 (ppb)	Total VOCs Oct 2006 (ppb)	Total VOCs Nov 2005 (ppb)	Total VOCs Oct 2004 (ppb)	Total VOCs Jul 2003 (ppb)	Total VOCs Aug 2002 (ppb)
MW-1	580	1,530	1,470	350	430	300	420	990	990	1,740	830	910	1,440	528	889	442	1,318.1	583	564	649	778	1107.16	677	860	705	1,463	1,481	2,046	1,769	1,128	1,250	2,879	768
MW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	ND	ND	ND	ND	ND	7.1	23
MW-3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	2.4	ND	ND	8.42	5.6	3.1	15
MW-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	3.8
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	3.41	ND	ND	5.13	6.7	7.3	14
MW-6	100	120	96	86	81	110	110	96	94	130	99	93	99	86.7	85.7	101	79	73.2	81.8	107	96	92.8	87.8	113	123	105	171	151	173	233	280	333	406
MW-7	83	49	130	58	ND	180	190	29	ND	ND	18	ND	ND	151.56	30.5	209.16	70.9	22.3	58.2	160.5	114.46	213	92.34	347.8	244	196.7	360	330.5	420	455.7	508	534	450
MW-8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	1.4
MW-9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	4.2
MW-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	2.6
MW-11	550	1,060	630	444	500	451	375	450	710	880	510	570	790	498	617	508.7	722	623	588	630.7	765	625.9	790	437.3	564.9	1,023	398.6	1,189	2,600	1,101	2,355	34,169	4,647
MW-12	15.8	28.8	52	97	120	126	136	200	212	173	149.3	186.6	142	86.5	148.22	92.8	162.9	90.82	90.4	100	159.8	82	279.01	65.8	159	165.6	196.9	429	1,082	4,776	6,900	12,100	12,643
MW-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	2.02	ND	ND	ND	ND	31	315
MW-14	57	81	96	52	99	68	68	54	73	94	49	71	47	39.7	76.6	77.3	104.98	31.9	24.33	38.93	65.22	40.72	34.9	17.8	38.15	29.3	103.2	106.8	293.9	139.9	67	140	315
MW-15	11	9.9	14	8.1	9.8	32	31	6.1	ND	6.8	7	ND	12.9	26.26	6.25	32.46	16.18	6.92	16.85	62	22.93	64.8	4.9	113.3	77.3	18.2	149.6	60.4	149.9	271	320	258	730
MW-16	37	31	13	6.8	ND	5.2	9.4	21	24	20	8.4	24	18	4.36	12.2	6.07	23.1	28.9	7.21	2.53	ND	22	22.2	16.2	21.3	8.56	24.7	60.0	51.2	65.4	82	38	NA
MW-17	425	460	410	NS	336	394	410	339	167	420	400	21.3	430	381	260.1	449	225.2	26.7	48.1	312.3	232.1	228.8	4.41	728	599	610	903.0	777	1,011	1,006	1,154	810	NA
MW-18	6.9	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	16.6	2.33	28.7	13.9	6.43	17.9	40.77	27.5	196	13.07	238.6	115.2	56.0	719	442	392	375	460	159	NA
MW-19R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	ND	ND	ND	ND	ND	ND	2.67	ND	4.27	ND	13.7	10.57	ND	22.1	2.64	11.4	20.2	14	10*	NA
MW-20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	NA	NA
MW-21	8.7	20	20	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	141.8	NS	14.3	533	318	29	495.6	436	NA	NA
MW-X (DUP)	550	1,720	410	360	407	300	400	870	990	1,850	540	186.8	1,450	521	913	457	1,022.2	Sample loss*	588	611	264	598	678	902	648	12.41	888	437	1,350	1031.49	540.6	7.1	133.63
EB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	ND	ND	NS	ND	0.001

RECOVERY WELLS

Recovery Well Number	Total VOCs Jun 2016 (ppb)	Total VOCs Nov 2015 (ppb)	Total VOCs Aug 2015 (ppb)	Total VOCs Jun 2015 (ppb)	Total VOCs Mar 2015 (ppb)	Total VOCs Nov 2014 (ppb)	Total VOCs Sep 2014 (ppb)	Total VOCs Jun 2014 (ppb)	Total VOCs Mar 2014 (ppb)	Total VOCs Dec 2013 (ppb)	Total VOCs Jul 2013 (ppb)	Total VOCs Apr 2013 (ppb)	Total VOCs Dec 2012 (ppb)	Total VOCs Jun 2012 (ppb)	Total VOCs Mar 2012 (ppb)	Total VOCs Sep 2011 (ppb)	Total VOCs Jun 2011 (ppb)	Total VOCs Mar 2011 (ppb)	Total VOCs Dec 2010 (ppb)	Total VOCs Sep 2010 (ppb)	Total VOCs Jun 2010 (ppb)	Total VOCs Jul 2009 (ppb)	Total VOCs Feb 2009 (ppb)	Total VOCs Sep 2008 (ppb)	Total VOCs Jun 2008 (ppb)	Total VOCs Mar 2008 (ppb)	Total VOCs Sep 2007 (ppb)	Total VOCs May 2007 (ppb)	Total VOCs Oct 2006 (ppb)	Total VOCs Feb 2005 (ppb)	Total VOCs Oct 2004 (ppb)	Total VOCs Jul 2003 (ppb)	Total VOCs Aug 2002 (ppb)
DR-1	910	319	160	NS	21.7	63	55	75	132	87	73	82	43	29.38	673	166.5	154.5	250.1	355.5	442.5	60.3	392.28	260	724	864	530	2,043.5	1,106	573.4	8,000	NA	NA	NA
DR-2	215	199	187	291	259	162	224	231	207	302	256	293	19	229.9	305.3	206.1	240.93	267.75	152.3	213.52	255.2	198.24	223.79	206.6	284.3	154.4	288.1	350.1	549.2	2,003	NA	NA	NA
DR-3	62	45	76	83	55	181	210	83	89	123	62	73	42	116.96	24.9	74.3	67.7	25.3	30.1	38.1	79.7	125.96	167.34	75.4	123.2	171.7	387.5	183	152.5	1,467	NA	NA	NA
DR-4	63	94	110	71	147	156	148	96	64	68	79	37	90	122.6	ND	191.03	128.4	101.4	71.7	230.58	155.04	80.3	66.3	129.1	40.2	42.1	217.0	15.21	859.0	1,760	NA	NA	NA
G-1	59.7	80.3	ND	68	146	101	105	90	78	96.2	69.1	55.8	52.6	68.55	65.58	67.52	55.81	67.02	48.8	30.5	108.3	164	126.6	120.4	170.5	186	225.0	153.3	200.8	544	NA	NA	NA
G-2	NS	NS	28	NS	48	34	37	52	14	68	81	50	132.2	75.3	41.9	29.8	65.6	47.2	51.8	6.02	8.37	56.2	231	28.3	39.1	80.92	59.3	174.92	283.4	385	NA	NA	NA
G-3	420	262	370	NS	NS	NS	NS	NS	82	NS	11	25	41.6	147.3	44.2	296.2	224.7	209.8	159.3	233.2	277.8	344	403	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NS: This well not included in this sampling event.
ND = Not Detected, results less than Method Detection Limit.
Impacted north property line wells: MW-5, MW-6, MW-7, MW-16, MW-17, MW-21
All compounds are measured in parts per billion (ppb).
VOC - Volatile Organic Compounds.
DUP - Duplicate Sample

Table 4 Percent Reductions in Total Groundwater VOCs
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

The Groundwater Treatment System was activated in May 2005

Monitoring Well	% Reduction 2002 to Jun 2016	% Reduction 2002 to Nov 2015	% Reduction 2002 to Aug 2015	% Reduction 2002 to Jun 2015	% Reduction 2002 to Mar 2015	% Reduction 2002 to Nov 2014	% Reduction 2002 to Sep 2014	% Reduction 2002 to Jun 2014	% Reduction 2002 to Mar 2014	% Reduction 2002 to Dec 2013	% Reduction 2002 to Jul 2013	% Reduction 2002 to Apr 2013	% Reduction 2002 to Dec 2012	% Reduction 2002 to Jun 2012	% Reduction 2002 to Mar 2012	% Reduction 2002 to Sep 2011	% Reduction 2002 to Jun 2011	% Reduction 2002 to Mar 2011	% Reduction 2002 to Dec 2010	% Reduction 2002 to Sep 2010	% Reduction 2002 to Jun 2010	% Reduction 2002 to Jan 2010	% Reduction 2002 to Jul 2009	% Reduction 2002 to Feb 2009	% Reduction 2002 to Sep 2008	% Reduction 2002 to Jun 2008	% Reduction 2002 to Mar 2008	% Reduction 2002 to Nov 2005
MW-1†	0.2%	-99.2%	-91.4%	54.4%	44.0%	60.9%	45.3%	-28.9%	-28.9%	-126.6%	-8.1%	-19.5%	-87.5%	31.3%	-15.8%	42.4%	-71.6%	24.1%	26.6%	15.5%	-1.3%	15.8%	-44.2%	11.8%	-12.0%	8.2%	-90.5%	-46.9%	
MW-2	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.6%	Not Sampled	99.6%	99.6%	
MW-3	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.3%	99.3%	
MW-4	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.00%	100.0%	100.0%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	
MW-5	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.3%	63.4%	
MW-6	75.4%	70.4%	76.4%	78.8%	80.0%	72.9%	72.9%	76.4%	76.8%	68.0%	75.6%	77.1%	75.6%	78.6%	78.9%	75.1%	80.5%	82.0%	79.9%	73.6%	76.4%	81.3%	77.1%	78.4%	72.2%	69.7%	74.1%	42.6%	
MW-7	81.6%	89.1%	71.1%	87.1%	100.0%	60.0%	57.8%	93.6%	100.0%	100.0%	96.0%	100.0%	100.0%	66.3%	93.2%	53.5%	84.2%	95.0%	87.1%	64.3%	74.6%	96.6%	52.7%	79.5%	22.7%	45.8%	56.3%	-1.3%	
MW-8	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	92.9%	92.9%	
MW-9	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	97.6%	97.6%	
MW-10	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	96.2%	96.2%	
MW-11	88.2%	77.2%	86.4%	90.4%	89.2%	90.3%	91.9%	90.3%	84.7%	81.1%	89.0%	87.7%	83.0%	89.3%	86.7%	89.1%	84.5%	86.6%	87.3%	86.4%	83.5%	83.3%	86.5%	83.0%	90.6%	87.8%	78.0%	76.3%	
MW-12	99.9%	99.8%	99.6%	99.2%	99.1%	99.0%	98.4%	98.4%	98.3%	98.6%	98.8%	98.5%	98.9%	99.3%	98.8%	99.3%	98.7%	99.3%	99.3%	99.2%	98.7%	98.1%	99.4%	97.8%	99.5%	98.7%	98.7%	62.2%	
MW-13	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	100.0%	Not Sampled	100.0%	100.0%
MW-14	81.9%	74.3%	69.5%	83.5%	68.6%	78.4%	78.4%	82.9%	76.8%	70.2%	84.4%	77.5%	85.1%	87.4%	75.7%	75.5%	66.7%	89.9%	92.3%	87.6%	79.3%	85.9%	87.1%	88.9%	94.3%	87.9%	90.7%	55.6%	
MW-15	98.5%	98.6%	98.1%	98.9%	98.7%	95.6%	95.8%	99.2%	100.0%	99.1%	99.0%	100.0%	98.2%	96.4%	99.1%	95.6%	97.8%	99.1%	97.7%	91.5%	96.9%	98.3%	91.1%	99.3%	84.5%	89.4%	97.5%	62.9%	
MW:16*	27.7%	39.5%	74.6%	86.7%	100.0%	89.8%	81.6%	59.0%	53.1%	60.9%	77.9%	36.8%	52.6%	88.5%	67.9%	84.0%	39.2%	23.9%	81.0%	93.3%	99.7%	94.2%	42.1%	41.6%	57.4%	43.9%	77.5%	-72.1%	
MW-17*	58.0%	54.5%	59.4%	Not Sampled	66.8%	61.0%	59.4%	66.5%	83.5%	58.5%	50.6%	97.4%	46.9%	53.0%	67.9%	44.6%	72.2%	96.7%	94.1%	61.4%	71.3%	97.7%	71.8%	99.5%	10.1%	26.0%	24.7%	-24.2%	
MW-18:*	98.2%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	Not Sampled	100.0%	100.0%	100.0%	89.6%	98.5%	81.9%	91.3%	96.0%	88.7%	74.4%	82.7%	96.0%	-23.3%	91.8%	-50.0%	27.6%	64.8%	-135.8%	
MW-19 R*	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	73.3%	99.0%	99.0%	57.3%	99.0%	-36.7%	-5.7%	99.0%	-102.0%	
MW-20**	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	
MW-21**	66.5%	23.1%	23.1%	61.5%	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	67.5%	Not Sampled	96.7%	-13.7%	
* Well installed 2003																													
** Well Installed 2004																													
Site-Wide reduction:	76.9%	66.2%	69.1%	87.7%	88.2%	85.2%	83.2%	79.8%	80.3%	67.5%	81.8%	81.2%	71.3%	82.9%	80.7%	79.7%	72.2%	83.7%	86.9%	78.3%	81.4%	87.9%	61.1%	82.1%	56.0%	59.7%	78.5%	35.7%	
Impacted Groundwater Plume Area Only:	72.9%	58.1%	58.6%	84.6%	80.8%	77.3%	75.0%	72.3%	73.9%	82.2%	73.2%	77.3%	62.5%	75.2%	73.1%	71.9%	64.1%	84.1%	83.0%	72.5%	72.4%	82.1%	65.2%	79.8%	57.7%	64.2%	53.7%	28.4%	

Plume Area = MW-1, MW-11, MW-12, MW-14, MW-15, MW-7, MW-17, MW-6
% reduction = percent reduction in total Volatile Organic Compounds (VOCs) since groundwater monitoring was initiated
†Negative values indicate an increase in total VOCs since monitoring commenced in 2002. The percent increase in total groundwater VOCs is shown below for MW-1.

Recovery Well	% Reduction 2002 to Jun 2016	% Reduction 2002 to Nov 2015	% Reduction 2002 to Aug 2015	% Reduction 2002 to Jun 2015	% Reduction 2002 to Mar 2015	% Reduction 2002 to Nov 2014	% Reduction 2002 to Sep 2014	% Reduction 2002 to Jun 2014	% Reduction 2002 to Mar 2014	% Reduction 2002 to Dec 2013	% Reduction 2002 to Jul 2013	% Reduction 2002 to Apr 2013	% Reduction 2002 to Dec 2012	% Reduction 2002 to Jun 2012	% Reduction 2002 to Mar 2012	% Reduction 2002 to Sep 2011	% Reduction 2002 to Jun 2011	% Reduction 2002 to Mar 2011	% Reduction 2002 to Dec 2010	% Reduction 2002 to Sep 2010	% Reduction 2002 to Jun 2010	% Reduction 2002 to Jan 2010	% Reduction 2002 to Jul 2009	% Reduction 2002 to Feb 2009	% Reduction 2002 to Sep 2008	% Reduction 2002 to Jun 2008	% Reduction 2002 to Mar 2008
DR-1	-58.7%	44.4%	72.1%	Not Sampled	96.2%	89.0%	90.4%	86.9%	77.0%	84.8%	99.1%	99.0%	99.5%	99.8%	91.6%	97.9%	98.1%	96.9%	95.6%	94.5%	99.2%	98.0%	95.1%	96.8%	91.0%	89.2%	93.4%
DR-2	60.9%	63.8%	66.0%	47.0%	52.8%	70.5%	59.2%	58.0%	62.3%	45.0%	87.2%	85.4%	99.1%	88.5%	83.9%	89.7%	88.0%	86.6%	92.4%	89.3%	87.3%	90.6%	90.1%	88.8%	89.7%	85.8%	92.3%
DR-3	59.3%	70.5%	50.2%	45.6%	63.9%	-18.7%	-37.7%	45.6%	41.6%	19.3%	95.8%	95.1%	97.2%	92.1%	98.3%	95.0%	95.4%	98.3%	98.0%	97.4%	94.6%	91.6%	91.5%	88.7%	94.9%	91.7%	88.4%
DR-4	92.7%	89.1%	87.2%	91.7%	82.9%	81.8%	82.8%	88.8%	92.5%	90.8%	95.5%	97.9%	94.9%	93.1%	100.0%	89.2%	92.7%	94.3%	95.9%	86.9%	91.2%	95.4%	95.5%	96.2%	92.7%	97.7%	97.6%
G-1	92.7%	60.0%	100.0%	66.1%	27.3%	49.8%	47.7%	55.0%	61.3%	65.6%	87.3%	89.8%	90.3%	87.4%	88.0%	87.6%	89.8%	87.7%	91.0%	94.4%	80.1%	76.0%	69.9%	76.7%	77.9%	68.7%	65.8%
G-2	Not Sampled	Not Sampled	90.1%	Not Sampled	83.1%	88.0%	86.9%	81.7%	95.1%	71.4%	79.0%	87.0%	65.7%	80.4%	89.1%	92.3%	83.0%	87.7%	86.5%	98.4%	97.8%	98.5%	85.4%	40.0%	92.6%	89.8%	79.0%
G-3	-4.2%	35.0%	8.2%	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	79.7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Overall Reduction	40.4%	60.4%	67.7%	62.6%	67.7%	60.1%	54.9%	69.3%	72.8%	62.8%	90.7%	92.3%	91.1%	90.2%	91.8%	91.9%	91.1%	91.9%	93.2%	93.5%	91.7%	91.7%	87.9%	81.2%	89.8%	87.2%	86.1%

*Sampling of recovery wells initiated in 2005

Monitoring Well	% Increase 2002 to Jun 2016	% Increase 2002 to Nov 2015	% Increase 2002 to Aug 2015	% Increase 2002 to Jun 2015	% Increase 2002 to Mar 2015	% Increase 2002 to Nov 2014	% Increase 2002 to Sep 2014	% Increase 2002 to Jun 2014	% Increase 2002 to Mar 2014	% Increase 2002 to Dec 2013	% Increase 2002 to Jul 2013	% Increase 2002 to Apr 2013	% Increase 2002 to Dec 2012		% Increase 2002 to Mar 2012		% Increase 2002 to Jun 2011				% Increase 2002 to Jun 2010		% Increase 2002 to Jul 2009		% Increase 2002 to Sep 2008		% Increase 2002 to Mar 2008	% Increase 2002 to Nov 2005
MW-1†	NA	49.8%	47.8%	NA	NA	NA	NA	22.4%	22.4%	55.9%	7.5%	16.3%	46.7%	NA	13.6%	NA	41.7%	NA	NA	NA	100.0%	NA	30.6%	NA	100.0%	NA	47.5%	31.9%
DR-1†	37.0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DR-3†	NA	NA	NA	NA	NA	15.7%	27.4%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G-3	4.0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

†Negative values indicate an increase in total VOCs since monitoring commenced in 2002. The percent increase in total groundwater VOCs is shown above for MW-1 and DR-3.

FIGURES

DASNY

Gowanda Day Habilitation Center

4 Industrial Place
Gowanda, NY

Bergmann associates
architects // engineers // planners

Figure 1

June 2016 Groundwater Contour Map

0 30 60 90 120 Feet

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DASNY

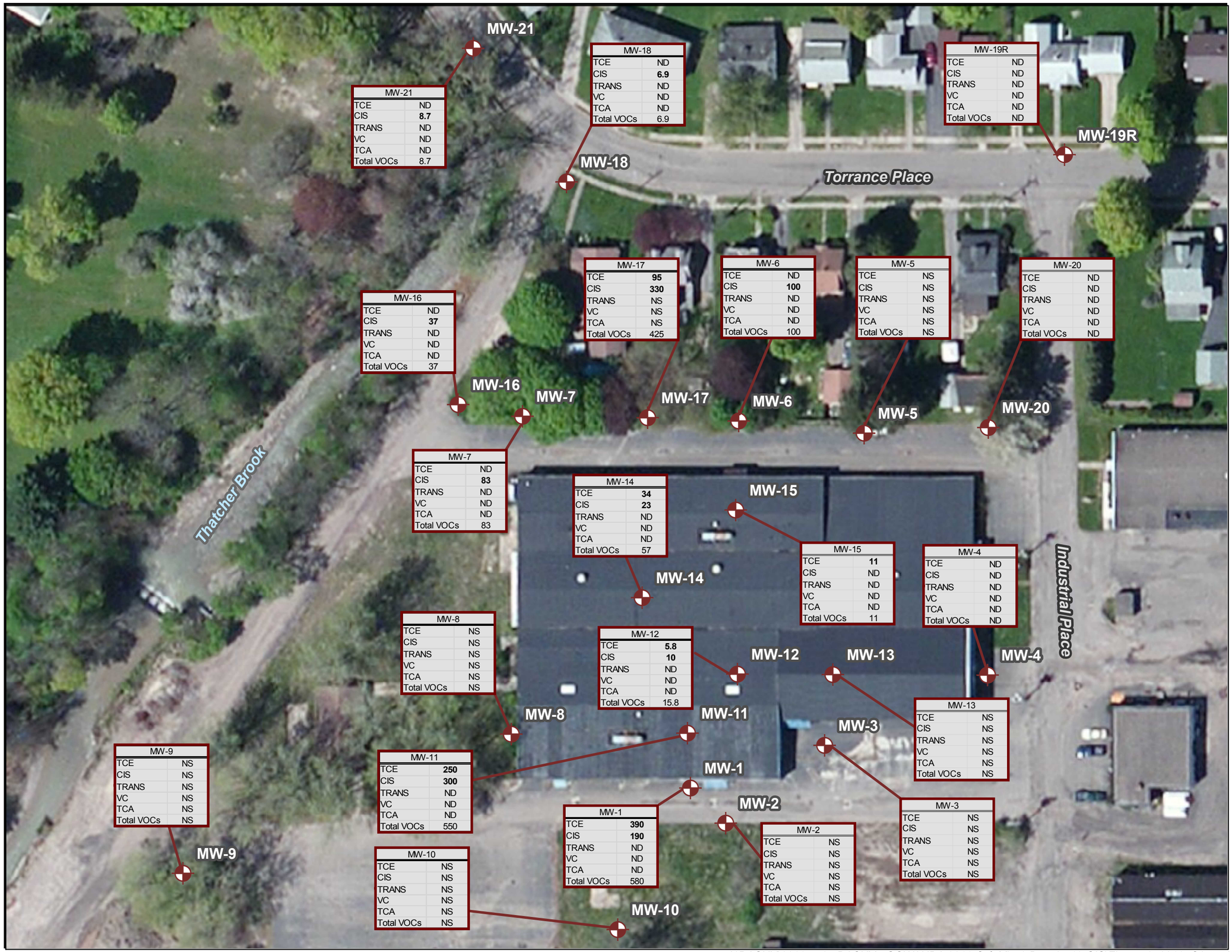
Gowanda Day Habilitation Center

4 Industrial Place
Gowanda, NY

Bergmann associates
architects // engineers // planners

Figure 2

June 2016 Distribution of Groundwater Analytical Results: Monitoring Wells



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DASNY

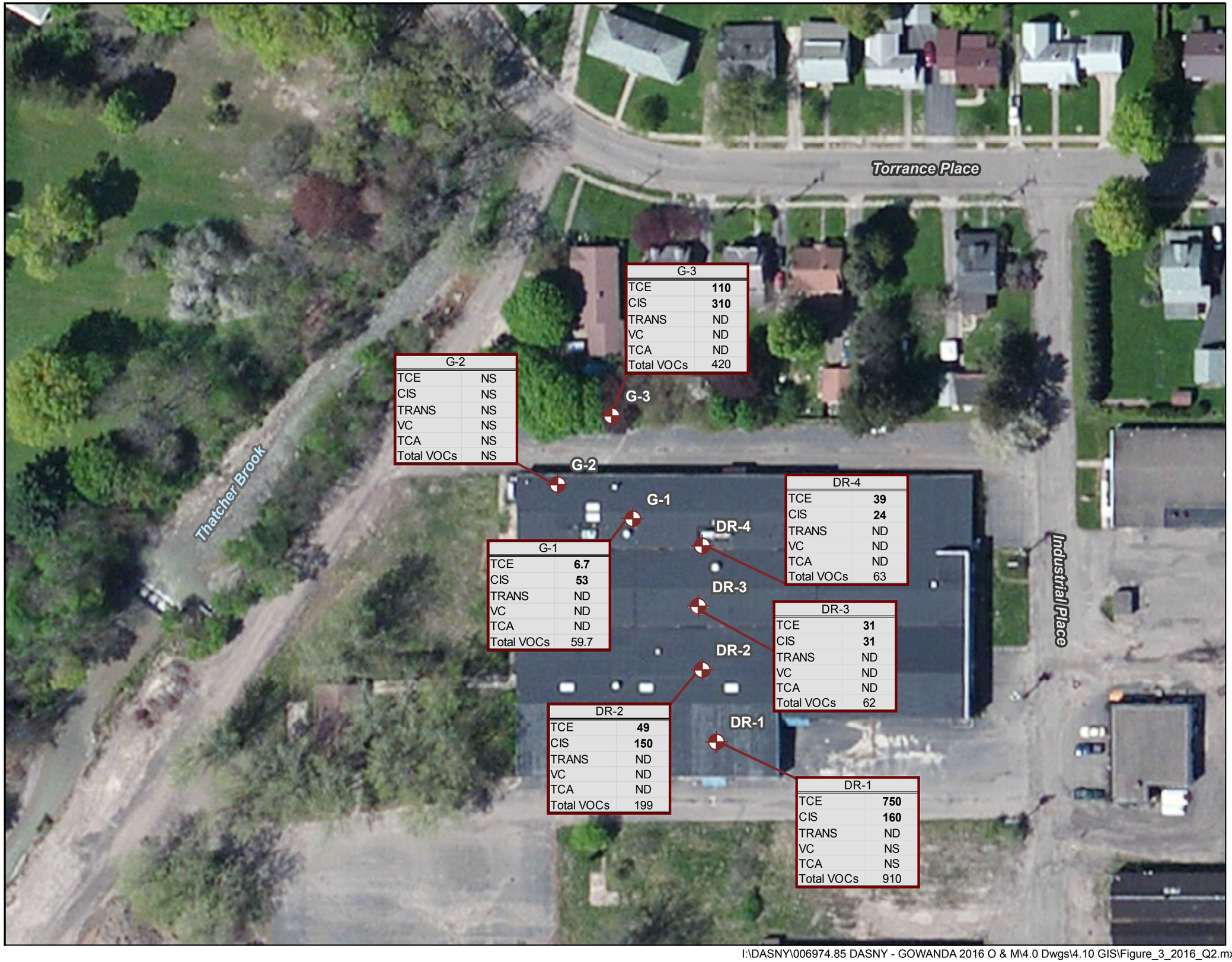
Gowanda Day Habilitation Center

4 Industrial Place
Gowanda, NY

Bergmann associates
architects // engineers // planners

Figure 3

June 2016 Distribution of Groundwater Analytical Results: Recovery Wells



0 25 50 75 100
Feet

N

I:\DASNY\006974.85 DASNY - GOWANDA 2016 O & M\4.0 Dwgs\4.10 GIS\Figure_3_2016_Q2.mxd

CHARTS

Chart 1: Groundwater Recovery Wells Summary

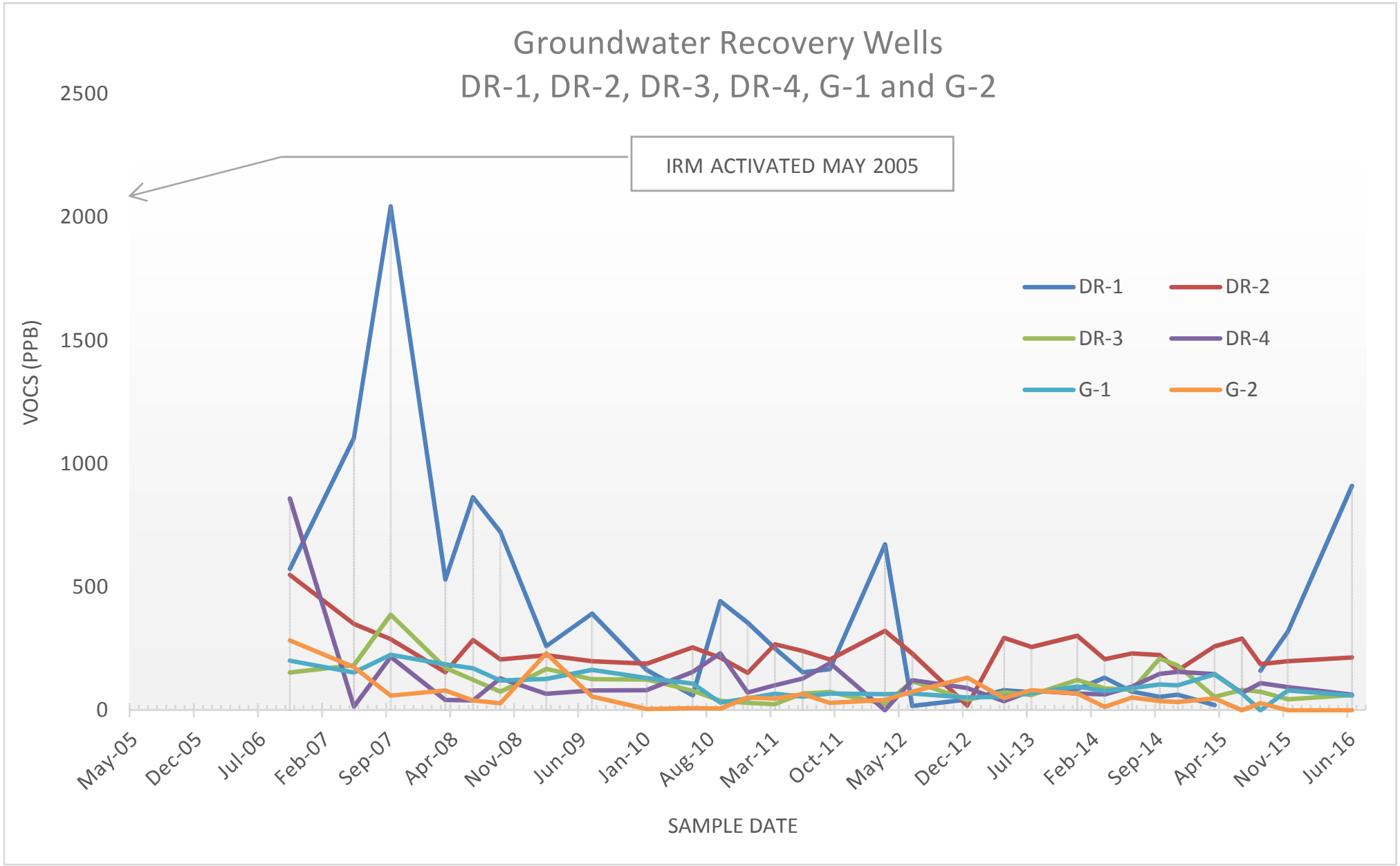


Chart 2: MW-1, DR-1 and MW-11 Groundwater Volatile Organic Compound Concentrations

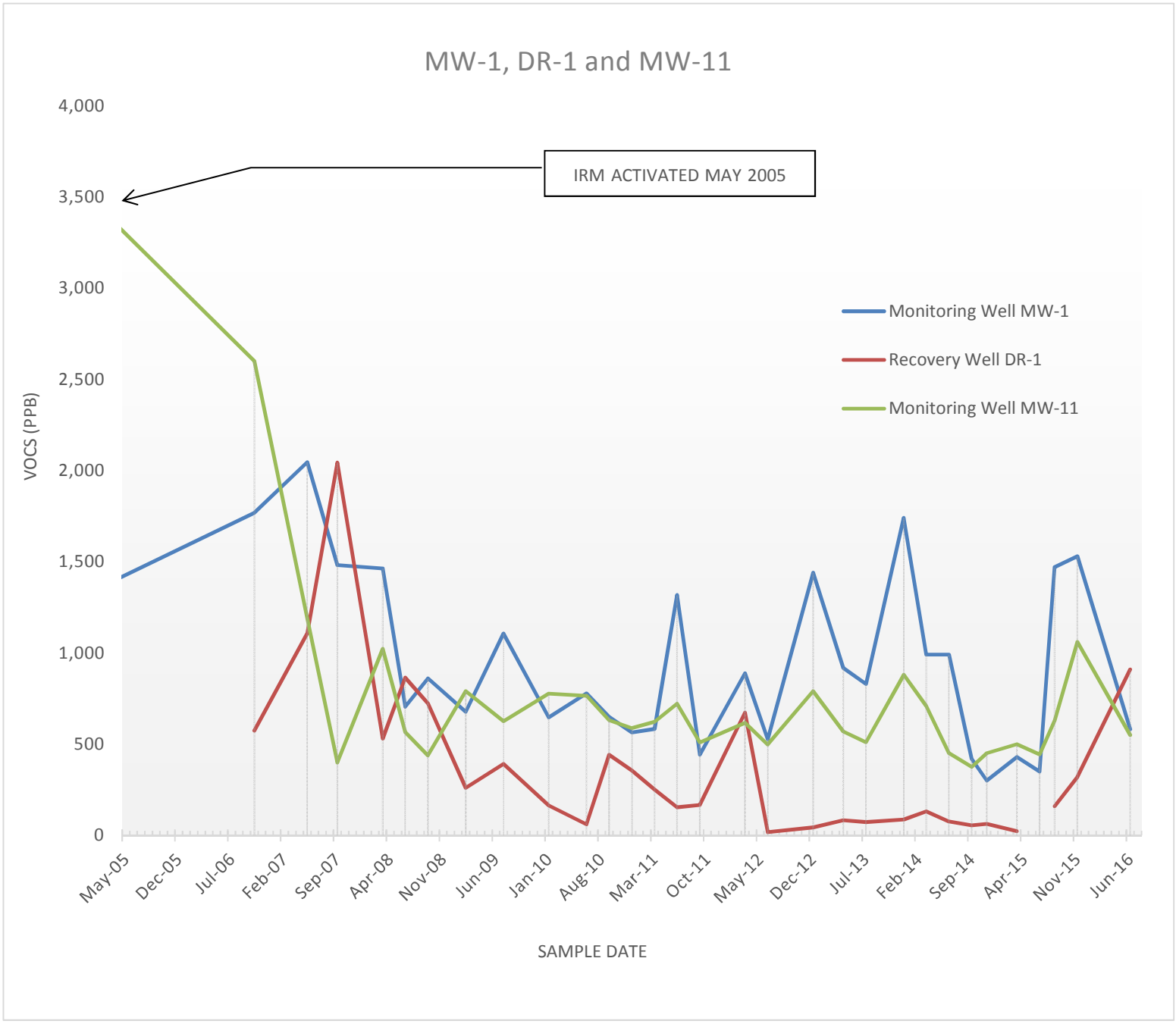


Chart 3: MW-12 and DR-2 Groundwater Volatile Organic Compound Concentrations

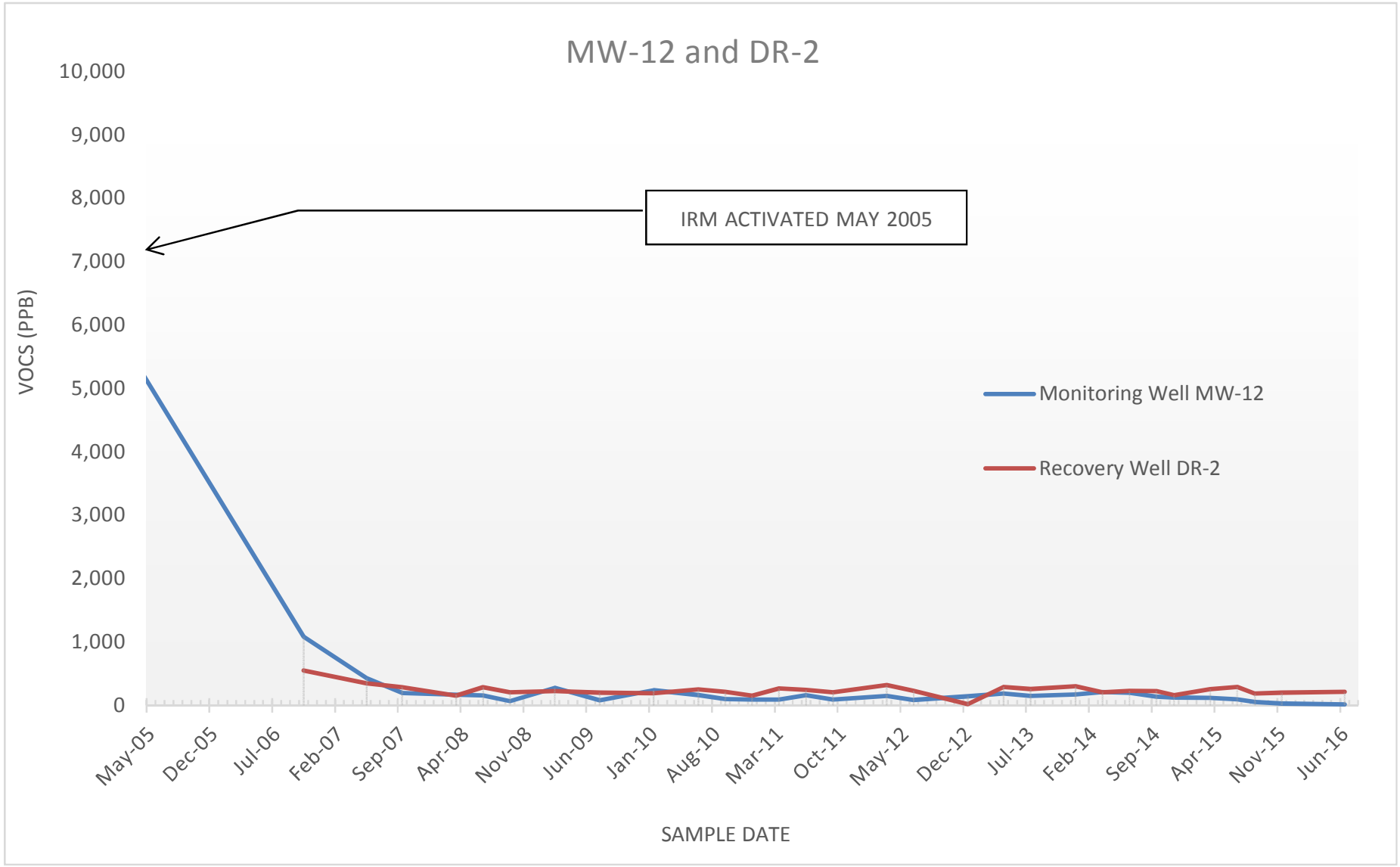


Chart 4: MW-14 and DR-3 Groundwater Volatile Organic Compound Concentrations

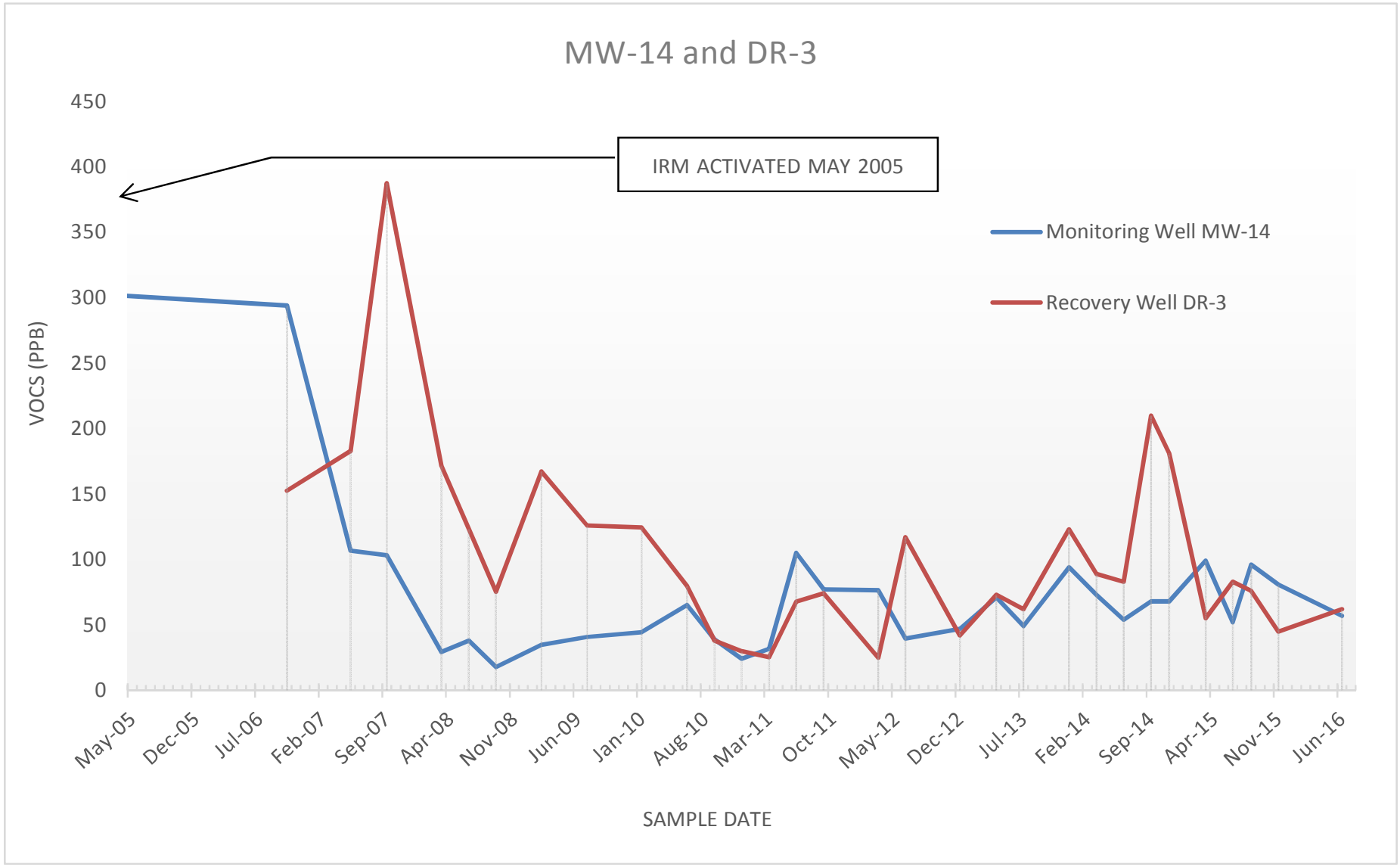


Chart 5: MW-15 and DR-4 Groundwater Volatile Organic Compound Concentrations

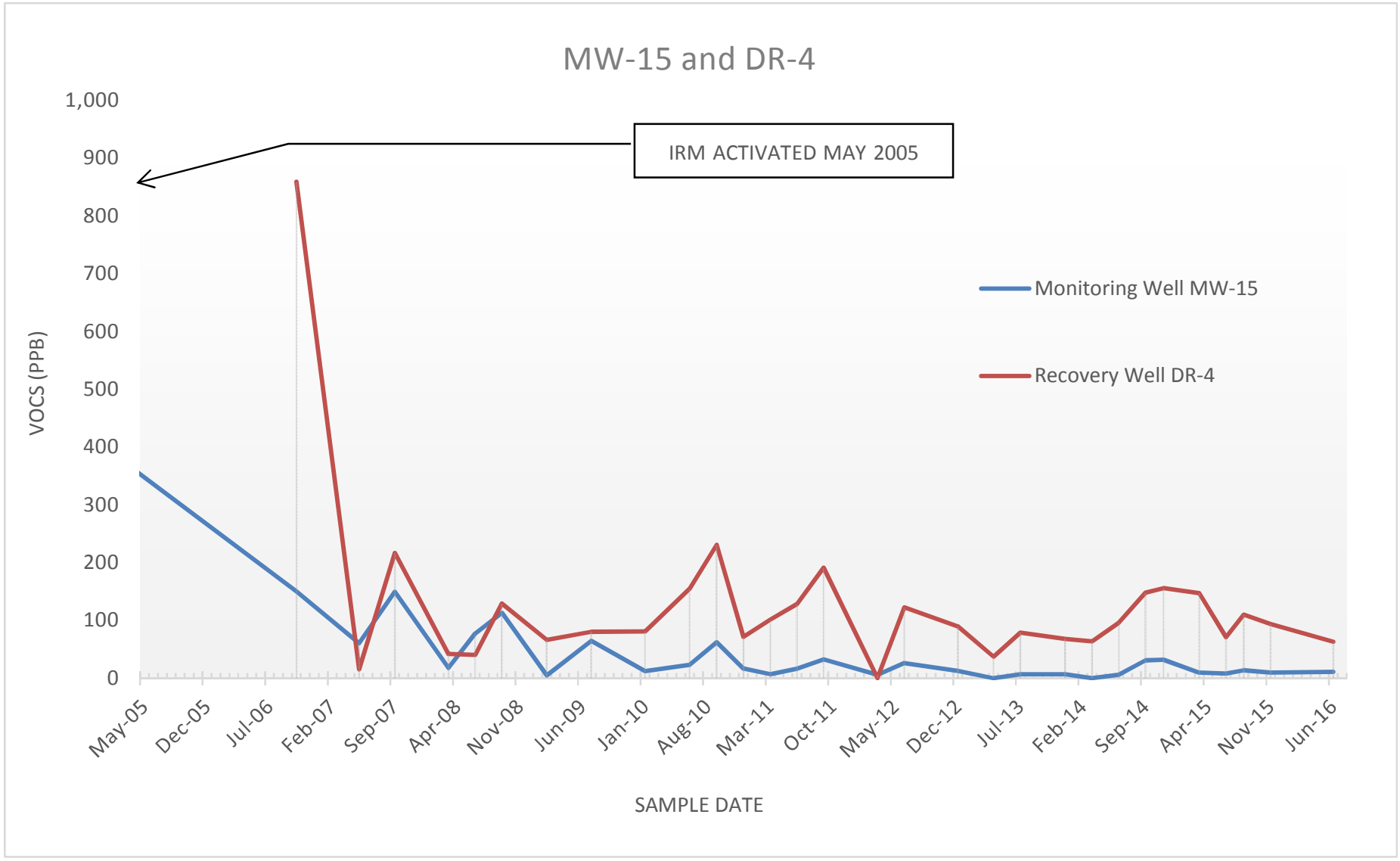


Chart 6: MW-17 and G-1 Groundwater Volatile Organic Compound Concentrations

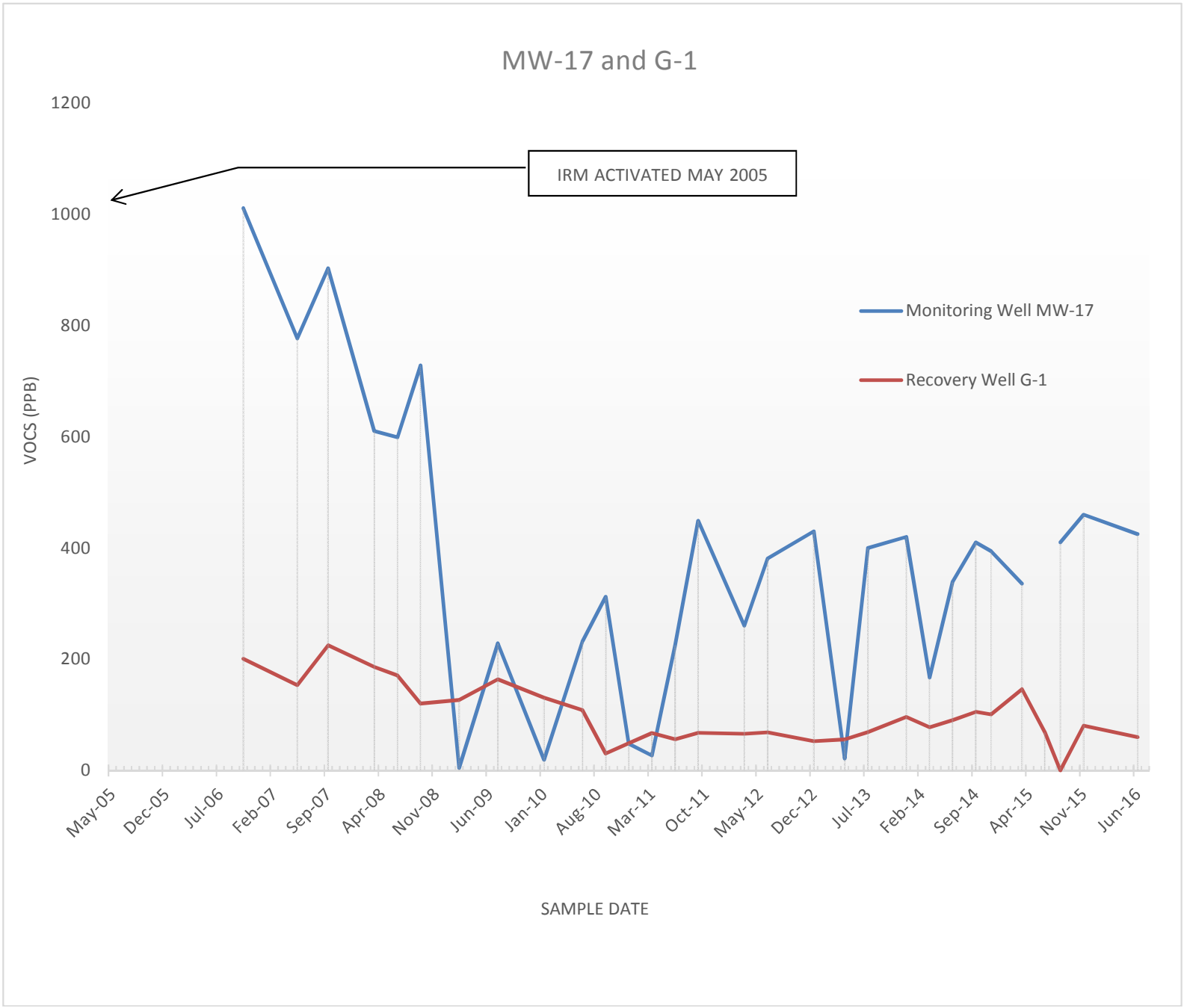


Chart 7: MW-7 and G-2 Groundwater Volatile Organic Compound Concentrations

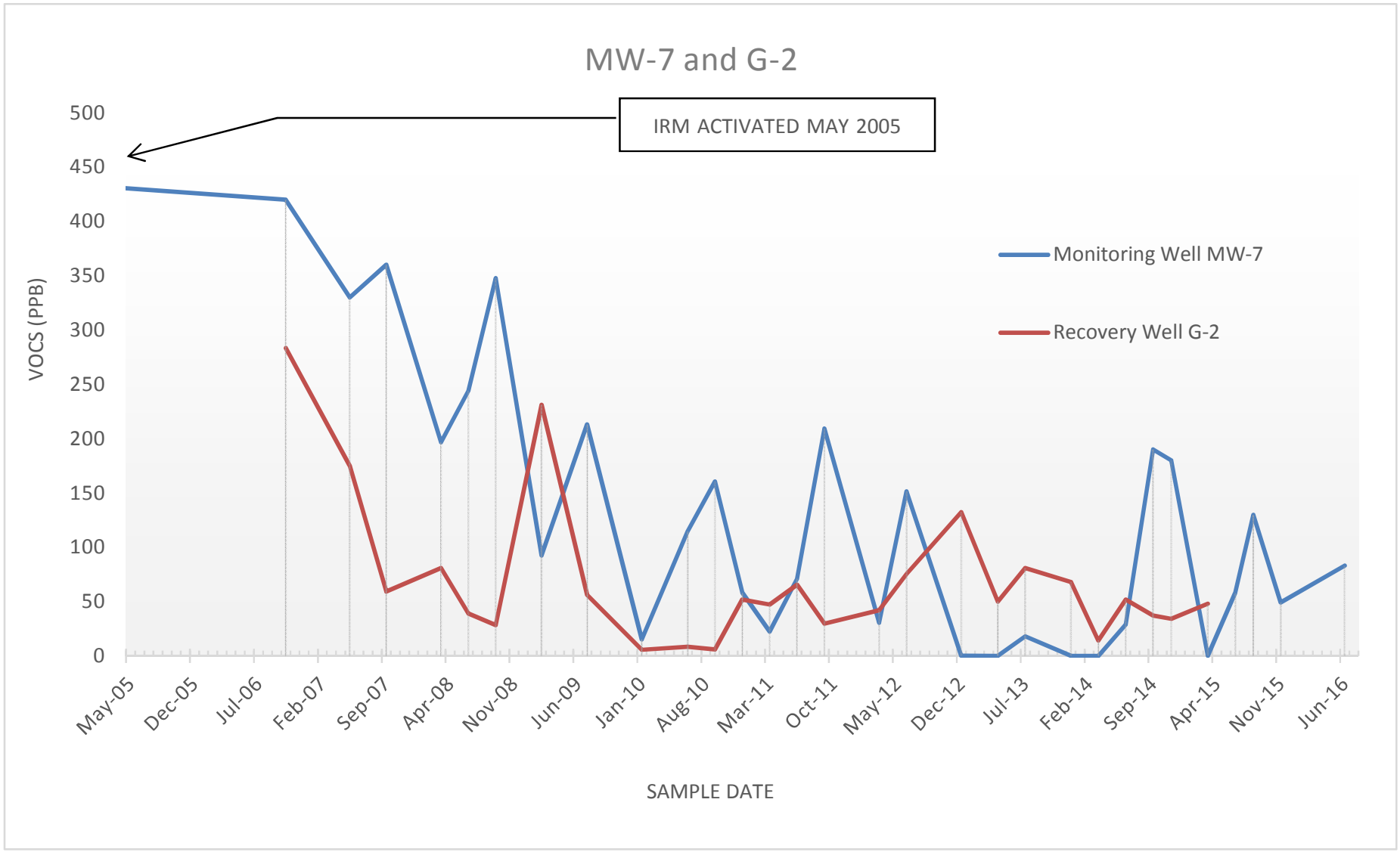
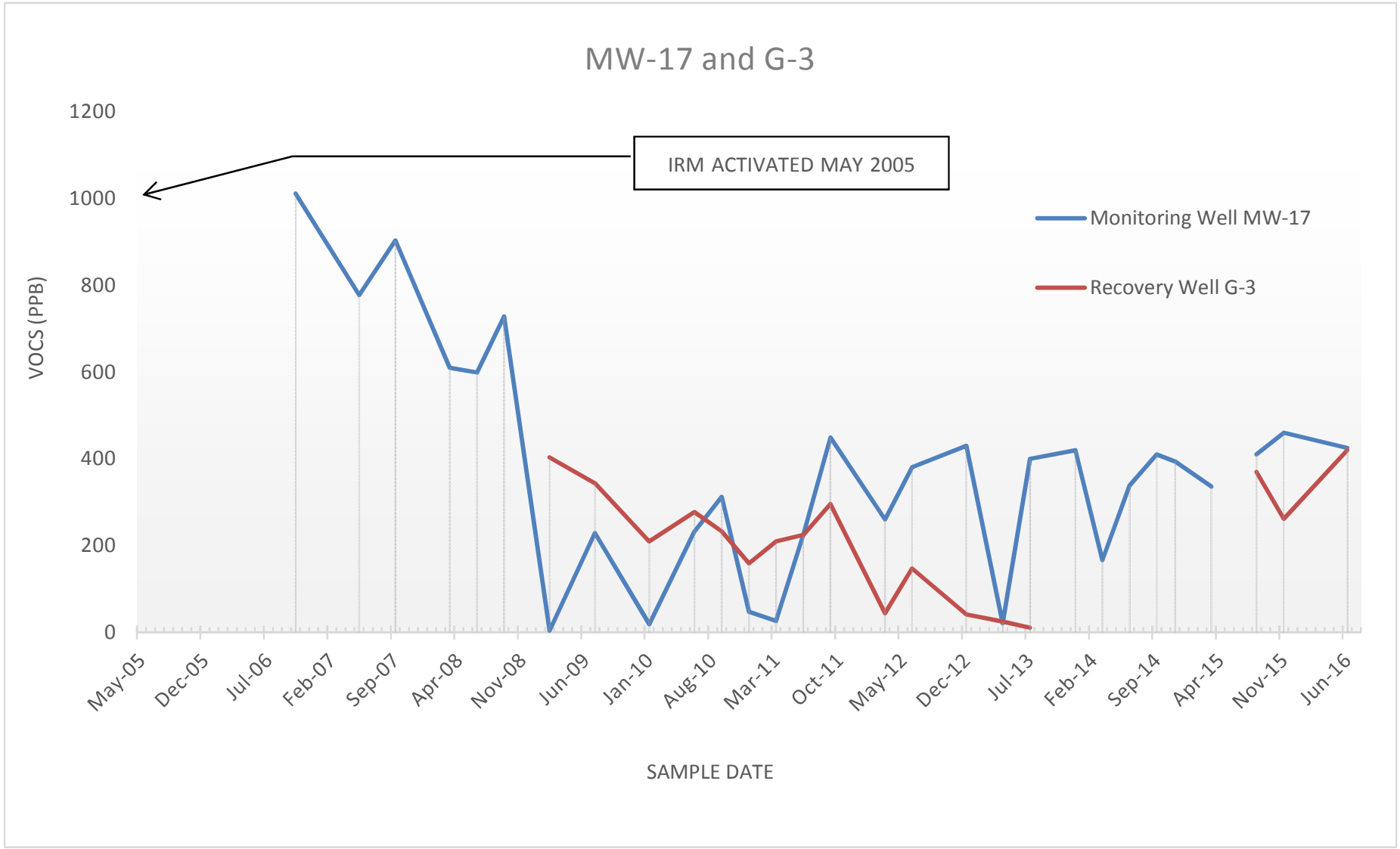


Chart 8: MW-17 and G-3 Groundwater Volatile Organic Compound Concentrations



APPENDIX A

LABORATORY ANALYTICAL RESULTS REPORT
JUNE 2016 SAMPLING EVENT

July 08, 2016 Service Request No:R1606856

Ms. Megan Borruso
Bergmann Associates, Incorporated
200 First Federal Plaza
28 East Main St.
Rochester, NY 14614

Laboratory Results for: Gowanda

Dear Ms.Borruso,

Enclosed are the results of the sample(s) submitted to our laboratory June 29, 2016
For your reference, these analyses have been assigned our service request number **R1606856.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7478. You may also contact me via email at Vanessa.Badman@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Vanessa Badman
Customer Service
Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

CASE NARRATIVE

This report contains analytical results for the following samples:

Service Request Number: R1606856

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1606856-001	MW-4	6/28/2016	1110
R1606856-002	MW-20	6/28/2016	1130
R1606856-003	MW-19R	6/28/2016	1210
R1606856-004	MW-15	6/28/2016	1230
R1606856-005	MW-14	6/28/2016	1250
R1606856-006	MW-18	6/28/2016	1320
R1606856-007	MW-21	6/28/2016	1345
R1606856-008	MW-16	6/28/2016	1500
R1606856-009	MW-7	6/28/2016	1520
R1606856-010	MW-6	6/28/2016	1540
R1606856-011	MW-12	6/28/2016	1600
R1606856-012	MW-11	6/28/2016	1615
R1606856-013	MW-1	6/29/2016	0930
R1606856-014	MW-X	6/29/2016	1200
R1606856-015	MW-17	6/29/2016	1000
R1606856-016	DR-1	6/29/2016	1025
R1606856-017	DR-2	6/29/2016	1035
R1606856-018	DR-3	6/29/2016	1100
R1606856-019	DR-4	6/29/2016	1120
R1606856-020	G-1	6/29/2016	1140
R1606856-021	G-2	6/29/2016	1150
R1606856-022	EQUIPMENT BLANK	6/29/2016	1200

All samples were received in good condition unless otherwise noted on the cooler receipt and preservation check form located at the end of this report.

All samples were preserved in accordance with approved analytical methods.

All samples have been analyzed by the approved methods cited on the analytical results pages.

All holding times and associated QC were within limits.

No analytical or QC problems were encountered.

All sampling activities performed by ALS personnel have been in accordance with “ALS Field Procedures and Measurements Manual” or by client specifications.

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-15	Lab ID: R1606856-004					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Trichloroethene (TCE)	11		0.22	5.0	ug/L	8260C

CLIENT ID: MW-14	Lab ID: R1606856-005					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	23		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	34		0.22	5.0	ug/L	8260C

CLIENT ID: MW-18	Lab ID: R1606856-006					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	6.9		0.30	5.0	ug/L	8260C

CLIENT ID: MW-21	Lab ID: R1606856-007					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	8.7		0.30	5.0	ug/L	8260C

CLIENT ID: MW-16	Lab ID: R1606856-008					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	37		0.30	5.0	ug/L	8260C

CLIENT ID: MW-7	Lab ID: R1606856-009					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	83		0.30	5.0	ug/L	8260C

CLIENT ID: MW-6	Lab ID: R1606856-010					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	100		0.30	5.0	ug/L	8260C

CLIENT ID: MW-12	Lab ID: R1606856-011					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	10		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	5.8		0.22	5.0	ug/L	8260C

CLIENT ID: MW-11	Lab ID: R1606856-012					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	300		0.75	13	ug/L	8260C
Trichloroethene (TCE)	250		0.55	13	ug/L	8260C

CLIENT ID: MW-1	Lab ID: R1606856-013					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	190		0.75	13	ug/L	8260C
Trichloroethene (TCE)	390		0.55	13	ug/L	8260C

CLIENT ID: MW-X	Lab ID: R1606856-014					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	180		0.75	13	ug/L	8260C
Trichloroethene (TCE)	370		0.55	13	ug/L	8260C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-17	Lab ID: R1606856-015					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	330		0.60	10	ug/L	8260C
Trichloroethene (TCE)	95		0.44	10	ug/L	8260C

CLIENT ID: DR-1	Lab ID: R1606856-016					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	160	D	1.5	25	ug/L	8260C
Trichloroethene (TCE)	750	D	1.1	25	ug/L	8260C

CLIENT ID: DR-2	Lab ID: R1606856-017					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	180		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	35		0.22	5.0	ug/L	8260C
Vinyl Chloride	7.0		0.32	5.0	ug/L	8260C

CLIENT ID: DR-3	Lab ID: R1606856-018					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	31		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	31		0.22	5.0	ug/L	8260C

CLIENT ID: DR-4	Lab ID: R1606856-019					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	24		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	39		0.22	5.0	ug/L	8260C

CLIENT ID: G-1	Lab ID: R1606856-020					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	53		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	6.7		0.22	5.0	ug/L	8260C

CLIENT ID: G-2	Lab ID: R1606856-021					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	310	D	0.75	13	ug/L	8260C
Trichloroethene (TCE)	110		0.22	5.0	ug/L	8260C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Bergmann Associates, Incorporated **Service Request:**R1606856
Project: Gowanda

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1606856-001	MW-4	6/28/2016	1110
R1606856-002	MW-20	6/28/2016	1130
R1606856-003	MW-19R	6/28/2016	1210
R1606856-004	MW-15	6/28/2016	1230
R1606856-005	MW-14	6/28/2016	1250
R1606856-006	MW-18	6/28/2016	1320
R1606856-007	MW-21	6/28/2016	1345
R1606856-008	MW-16	6/28/2016	1500
R1606856-009	MW-7	6/28/2016	1520
R1606856-010	MW-6	6/28/2016	1540
R1606856-011	MW-12	6/28/2016	1600
R1606856-012	MW-11	6/28/2016	1615
R1606856-013	MW-1	6/29/2016	0930
R1606856-014	MW-X	6/29/2016	1200
R1606856-015	MW-17	6/29/2016	1000
R1606856-016	DR-1	6/29/2016	1025
R1606856-017	DR-2	6/29/2016	1035
R1606856-018	DR-3	6/29/2016	1100
R1606856-019	DR-4	6/29/2016	1120
R1606856-020	G-1	6/29/2016	1140
R1606856-021	G-2	6/29/2016	1150
R1606856-022	EQUIPMENT BLANK	6/29/2016	1200

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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Project Name: Gowanda	Project Number:
Project Manager: Megan Borruso	Report CC:
Company/Address: Bergmann Associates 28 E. Main St. Rochester NY 14614	
Phone #: 585 232 5135	Email: mborruso@bergmannpc.com
Sampler's Signature: Megan E. Borruso	Sampler's Printed Name: Megan E. Borruso

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	SITE SPECIFIC	REMARKS/ ALTERNATE DESCRIPTION
MW-4		6/28/2016	1110	Aq GW	3	X								
MW-20		6/28/2016	1130	Aq GW	3	X								
MW-19R		6/28/2016	1210	Aq GW	3	X								
MW-15		6/28/2016	1230	Aq GW	3	X								
MW-14		6/28/2016	1250	Aq GW	3	X								
MW-18		6/28/2016	1320	Aq GW	3	X								
MW-21		6/28/2016	1345	Aq GW	3	X								
MW-16		6/28/2016	1500	Aq GW	3	X								
MW-7		6/28/2016	1520	Aq GW	3	X								
MW-6		6/28/2016	1540	Aq GW	3	X								
MW-12		6/28/2016	1600	Aq GW	3	X								

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
STANDARD TAT
REQUESTED REPORT DATE

REPORT REQUIREMENTS
____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
NYSDEC EQUIS
Edata X Yes ____ No

INVOICE INFORMATION
PO #
BILL TO: Bergmann Associates

STATE WHERE SAMPLES WERE COLLECTED: New York

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Megan E Borruso					
Signature: Megan E. Borruso	Signature:	Signature	Signature	Signature	Signature
Printed Name: Bergmann Associates	Printed Name:	Printed Name	Printed Name		
Firm: 1d29/16 1500	Firm:	Firm	Firm		
Date/Time	Date/Time: 6/29/16 1500	Date/Time	Date/Time		

R1606856 5
Bergmann Associates, Incorporated
Gowanda

Distribution: White - Lab Copy; Yellow - Return to Originator

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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Project Name: Gowanda	Project Number:
Project Manager: Megan Borruso	Report CC:
Company/Address: Bergmann Associates 28 E. Main St. Rochester, NY 14614	
Phone #: 585 232 5735	Email: mborruso@bergmannpc.com
Sampler's Signature: Megan E Borruso	Sampler's Printed Name: Megan E. Borruso

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	SITE SPECIFIC
MW-11		6/28/2016	1615	Aq GW	3	X							
MW-1		6/28/2016	0930	Aq GW	3	X							
MW-X		6/29/2016	1200	Aq GW	3	X							
MW-17		6/29/2016	1000	Aq GW	3	X							
DR-1		6/29/2016	1025	Aq GW	3	X							
DR-2		6/29/2016	1035	Aq GW	3	X							
DR-3		6/29/2016	1100	Aq GW	3	X							
DR-4		6/29/2016	1120	Aq GW	3	X							
G-1		6/29/2016	1140	Aq GW	3	X							
G-2		6/29/2016	1150	Aq GW	3	X							
EQUIPMENT BLANK		6/29/2016	1300	W	3	X							

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 1 day ____ 2 day ____ 3 day
____ 4 day ____ 5 day
STANDARD TAT
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
NYSDEC EQUIS
Edata X Yes ____ No

INVOICE INFORMATION
PO #
BILL TO: Bergmann Associates

STATE WHERE SAMPLES WERE COLLECTED: New York

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Megan E Borruso	Signature:	Signature	Signature	Signature	Signature
Printed Name: Megan E. Borruso	Printed Name:	Printed Name	Printed Name	Printed Name	
Firm: Bergmann Associates	Firm:	Firm	Firm	Firm	
Date/Time: 6/29/16 1500	Date/Time: 6/29/16 1500	Date/Time	Date/Time	Date/Time	

R1606856 5
Bergmann Associates, Incorporated
Gowanda

Distribution: White - Lab Copy; Yellow - Return to Originator

ALS Group

R1606856 5
Bergmann Associates, Incorporated
Gowanda

Cooler Receipt and Preservation Check For

Project/Client GOWANDA Folder Number R16-6856

Cooler received on 6/29/16 by: SY

COURIER: ALS UPS FEDEX VELOCITY (CLIENT)

1	Were **Custody seals** on outside of cooler?	(Y) N	5a	**Perchlorate** samples have required headspace?	(Y) N NA
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y (N) NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	ALS/ROC (CLIENT)
4	Circle: (Wet Ice) **Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	NA

8. Temperature Readings Date: 6/29/16 Time: 313p ID: (IR#3) IR#5 From: Temp Blank Sample Bottle

Observed Temp (°C)	1.9						
Correction Factor (°C)	-0.1						
Corrected Temp (°C)	1.8						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y (N)	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by SY on 6/29/16 at 319p
5035 samples placed in storage location: _____ by _____ on _____ at _____

PC Secondary Review: _____

Cooler Breakdown: Date: 6/29/16 Time: 2226 by: DW

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? ~~YES~~ NO
2. Did all bottle labels and tags agree with custody papers? ~~YES~~ NO
3. Were correct containers used for the tests indicated? ~~YES~~ NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (N/A)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
≤4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**	4114070	5/17				

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: G-060-004

Other Comments:

PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% (25% for CLP) difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Bergmann Associates, Incorporated
Project: Gowanda
Service Request: R1606856

Sample Name: MW-4
Lab Code: R1606856-001
Sample Matrix: Water
Date Collected: 06/28/16
Date Received: 06/29/16

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-20
Lab Code: R1606856-002
Sample Matrix: Water
Date Collected: 06/28/16
Date Received: 06/29/16

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-19R
Lab Code: R1606856-003
Sample Matrix: Water
Date Collected: 06/28/16
Date Received: 06/29/16

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-15
Lab Code: R1606856-004
Sample Matrix: Water
Date Collected: 06/28/16
Date Received: 06/29/16

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-14
Lab Code: R1606856-005
Sample Matrix: Water
Date Collected: 06/28/16
Date Received: 06/29/16

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client: Bergmann Associates, Incorporated **Service Request:** R1606856
Project: Gowanda

Sample Name: MW-14 **Date Collected:** 06/28/16
Lab Code: R1606856-005 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By

Sample Name: MW-18 **Date Collected:** 06/28/16
Lab Code: R1606856-006 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-21 **Date Collected:** 06/28/16
Lab Code: R1606856-007 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-16 **Date Collected:** 06/28/16
Lab Code: R1606856-008 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-7 **Date Collected:** 06/28/16
Lab Code: R1606856-009 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client: Bergmann Associates, Incorporated **Service Request:** R1606856
Project: Gowanda

Sample Name: MW-6 **Date Collected:** 06/28/16
Lab Code: R1606856-010 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-12 **Date Collected:** 06/28/16
Lab Code: R1606856-011 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-11 **Date Collected:** 06/28/16
Lab Code: R1606856-012 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-1 **Date Collected:** 06/29/16
Lab Code: R1606856-013 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-X **Date Collected:** 06/29/16
Lab Code: R1606856-014 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client: Bergmann Associates, Incorporated **Service Request:** R1606856
Project: Gowanda

Sample Name: MW-X **Date Collected:** 06/29/16
Lab Code: R1606856-014 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By

Sample Name: MW-17 **Date Collected:** 06/29/16
Lab Code: R1606856-015 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: DR-1 **Date Collected:** 06/29/16
Lab Code: R1606856-016 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: DR-2 **Date Collected:** 06/29/16
Lab Code: R1606856-017 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: DR-3 **Date Collected:** 06/29/16
Lab Code: R1606856-018 **Date Received:** 06/29/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client: Bergmann Associates, Incorporated
Project: Gowanda
Service Request: R1606856

Sample Name: DR-4
Lab Code: R1606856-019
Sample Matrix: Water
Date Collected: 06/29/16
Date Received: 06/29/16

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: G-1
Lab Code: R1606856-020
Sample Matrix: Water
Date Collected: 06/29/16
Date Received: 06/29/16

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: G-2
Lab Code: R1606856-021
Sample Matrix: Water
Date Collected: 06/29/16
Date Received: 06/29/16

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: EQUIPMENT BLANK
Lab Code: R1606856-022
Sample Matrix: Water
Date Collected: 06/29/16
Date Received: 06/29/16

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 11:10
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-4	**Units:**	ug/L
Lab Code:	R1606856-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	07/01/16 13:20	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 13:20	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 13:20	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 13:20	
Trichloroethene (TCE)	ND U	5.0	1	07/01/16 13:20	
Vinyl Chloride	ND U	5.0	1	07/01/16 13:20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	07/01/16 13:20	
Dibromofluoromethane	115	89 - 119	07/01/16 13:20	
Toluene-d8	110	87 - 121	07/01/16 13:20	

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 11:30
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-20	**Units:**	ug/L
Lab Code:	R1606856-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	07/01/16 13:51	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 13:51	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 13:51	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 13:51	
Trichloroethene (TCE)	ND U	5.0	1	07/01/16 13:51	
Vinyl Chloride	ND U	5.0	1	07/01/16 13:51	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	07/01/16 13:51	
Dibromofluoromethane	112	89 - 119	07/01/16 13:51	
Toluene-d8	114	87 - 121	07/01/16 13:51	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 12:10
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-19R	**Units:**	ug/L
Lab Code:	R1606856-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	07/01/16 14:21	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 14:21	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 14:21	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 14:21	
Trichloroethene (TCE)	ND U	5.0	1	07/01/16 14:21	
Vinyl Chloride	ND U	5.0	1	07/01/16 14:21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	07/01/16 14:21	
Dibromofluoromethane	111	89 - 119	07/01/16 14:21	
Toluene-d8	115	87 - 121	07/01/16 14:21	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 12:30
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-15	**Units:**	ug/L
Lab Code:	R1606856-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND	U	5.0	1	07/01/16 14:52	
trans-1,2-Dichloroethene	ND	U	5.0	1	07/01/16 14:52	
Tetrachloroethene (PCE)	ND	U	5.0	1	07/01/16 14:52	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	07/01/16 14:52	
Trichloroethene (TCE)	**11**		5.0	1	07/01/16 14:52	
Vinyl Chloride	ND	U	5.0	1	07/01/16 14:52	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	07/01/16 14:52	
Dibromofluoromethane	114	89 - 119	07/01/16 14:52	
Toluene-d8	116	87 - 121	07/01/16 14:52	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 12:50
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-14	**Units:**	ug/L
Lab Code:	R1606856-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**23**	5.0	1	07/01/16 15:23	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 15:23	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 15:23	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 15:23	
Trichloroethene (TCE)	**34**	5.0	1	07/01/16 15:23	
Vinyl Chloride	ND U	5.0	1	07/01/16 15:23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	07/01/16 15:23	
Dibromofluoromethane	114	89 - 119	07/01/16 15:23	
Toluene-d8	113	87 - 121	07/01/16 15:23	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 13:20
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-18	**Units:**	ug/L
Lab Code:	R1606856-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**6.9**	5.0	1	07/01/16 15:54	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 15:54	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 15:54	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 15:54	
Trichloroethene (TCE)	ND U	5.0	1	07/01/16 15:54	
Vinyl Chloride	ND U	5.0	1	07/01/16 15:54	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	07/01/16 15:54	
Dibromofluoromethane	111	89 - 119	07/01/16 15:54	
Toluene-d8	109	87 - 121	07/01/16 15:54	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 13:45
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-21	**Units:**	ug/L
Lab Code:	R1606856-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**8.7**	5.0	1	07/01/16 16:24	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 16:24	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 16:24	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 16:24	
Trichloroethene (TCE)	ND U	5.0	1	07/01/16 16:24	
Vinyl Chloride	ND U	5.0	1	07/01/16 16:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	07/01/16 16:24	
Dibromofluoromethane	112	89 - 119	07/01/16 16:24	
Toluene-d8	114	87 - 121	07/01/16 16:24	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 15:00
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-16	**Units:**	ug/L
Lab Code:	R1606856-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**37**	5.0	1	07/01/16 16:55	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 16:55	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 16:55	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 16:55	
Trichloroethene (TCE)	ND U	5.0	1	07/01/16 16:55	
Vinyl Chloride	ND U	5.0	1	07/01/16 16:55	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	07/01/16 16:55	
Dibromofluoromethane	110	89 - 119	07/01/16 16:55	
Toluene-d8	110	87 - 121	07/01/16 16:55	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 15:20
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-7	**Units:**	ug/L
Lab Code:	R1606856-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**83**	5.0	1	07/01/16 17:26	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 17:26	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 17:26	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 17:26	
Trichloroethene (TCE)	ND U	5.0	1	07/01/16 17:26	
Vinyl Chloride	ND U	5.0	1	07/01/16 17:26	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	07/01/16 17:26	
Dibromofluoromethane	113	89 - 119	07/01/16 17:26	
Toluene-d8	115	87 - 121	07/01/16 17:26	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 15:40
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-6	**Units:**	ug/L
Lab Code:	R1606856-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**100**	5.0	1	07/01/16 17:56	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 17:56	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 17:56	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 17:56	
Trichloroethene (TCE)	ND U	5.0	1	07/01/16 17:56	
Vinyl Chloride	ND U	5.0	1	07/01/16 17:56	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	07/01/16 17:56	
Dibromofluoromethane	112	89 - 119	07/01/16 17:56	
Toluene-d8	113	87 - 121	07/01/16 17:56	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 16:00
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-12	**Units:**	ug/L
Lab Code:	R1606856-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**10**	5.0	1	07/01/16 18:27	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 18:27	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 18:27	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 18:27	
Trichloroethene (TCE)	**5.8**	5.0	1	07/01/16 18:27	
Vinyl Chloride	ND U	5.0	1	07/01/16 18:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	07/01/16 18:27	
Dibromofluoromethane	112	89 - 119	07/01/16 18:27	
Toluene-d8	108	87 - 121	07/01/16 18:27	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/28/16 16:15
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-11	**Units:**	ug/L
Lab Code:	R1606856-012	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**300**	13	2.5	07/05/16 19:07	
trans-1,2-Dichloroethene	ND U	13	2.5	07/05/16 19:07	
Tetrachloroethene (PCE)	ND U	13	2.5	07/05/16 19:07	
1,1,1-Trichloroethane (TCA)	ND U	13	2.5	07/05/16 19:07	
Trichloroethene (TCE)	**250**	13	2.5	07/05/16 19:07	
Vinyl Chloride	ND U	13	2.5	07/05/16 19:07	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	07/05/16 19:07	
Dibromofluoromethane	113	89 - 119	07/05/16 19:07	
Toluene-d8	110	87 - 121	07/05/16 19:07	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 09:30
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-1	**Units:**	ug/L
Lab Code:	R1606856-013	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**190**	13	2.5	07/05/16 19:38	
trans-1,2-Dichloroethene	ND U	13	2.5	07/05/16 19:38	
Tetrachloroethene (PCE)	ND U	13	2.5	07/05/16 19:38	
1,1,1-Trichloroethane (TCA)	ND U	13	2.5	07/05/16 19:38	
Trichloroethene (TCE)	**390**	13	2.5	07/05/16 19:38	
Vinyl Chloride	ND U	13	2.5	07/05/16 19:38	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	07/05/16 19:38	
Dibromofluoromethane	111	89 - 119	07/05/16 19:38	
Toluene-d8	113	87 - 121	07/05/16 19:38	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 12:00
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-X	**Units:**	ug/L
Lab Code:	R1606856-014	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**180**	13	2.5	07/05/16 15:02	
trans-1,2-Dichloroethene	ND U	13	2.5	07/05/16 15:02	
Tetrachloroethene (PCE)	ND U	13	2.5	07/05/16 15:02	
1,1,1-Trichloroethane (TCA)	ND U	13	2.5	07/05/16 15:02	
Trichloroethene (TCE)	**370**	13	2.5	07/05/16 15:02	
Vinyl Chloride	ND U	13	2.5	07/05/16 15:02	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	07/05/16 15:02	
Dibromofluoromethane	112	89 - 119	07/05/16 15:02	
Toluene-d8	114	87 - 121	07/05/16 15:02	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 10:00
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	MW-17	**Units:**	ug/L
Lab Code:	R1606856-015	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**330**	10	2	07/05/16 14:31	
trans-1,2-Dichloroethene	ND U	10	2	07/05/16 14:31	
Tetrachloroethene (PCE)	ND U	10	2	07/05/16 14:31	
1,1,1-Trichloroethane (TCA)	ND U	10	2	07/05/16 14:31	
Trichloroethene (TCE)	**95**	10	2	07/05/16 14:31	
Vinyl Chloride	ND U	10	2	07/05/16 14:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	07/05/16 14:31	
Dibromofluoromethane	114	89 - 119	07/05/16 14:31	
Toluene-d8	104	87 - 121	07/05/16 14:31	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 10:25
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	DR-1	**Units:**	ug/L
Lab Code:	R1606856-016	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**160**	**D**	25	5	07/05/16 20:08	
trans-1,2-Dichloroethene	ND	U	25	5	07/05/16 20:08	
Tetrachloroethene (PCE)	ND	U	25	5	07/05/16 20:08	
1,1,1-Trichloroethane (TCA)	ND	U	25	5	07/05/16 20:08	
Trichloroethene (TCE)	**750**	**D**	25	5	07/05/16 20:08	
Vinyl Chloride	ND	U	25	5	07/05/16 20:08	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	07/05/16 20:08	
Dibromofluoromethane	113	89 - 119	07/05/16 20:08	
Toluene-d8	115	87 - 121	07/05/16 20:08	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 10:35
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	DR-2	**Units:**	ug/L
Lab Code:	R1606856-017	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**180**	5.0	1	07/05/16 16:34	
trans-1,2-Dichloroethene	ND U	5.0	1	07/05/16 16:34	
Tetrachloroethene (PCE)	ND U	5.0	1	07/05/16 16:34	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/05/16 16:34	
Trichloroethene (TCE)	**35**	5.0	1	07/05/16 16:34	
Vinyl Chloride	**7.0**	5.0	1	07/05/16 16:34	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	07/05/16 16:34	
Dibromofluoromethane	113	89 - 119	07/05/16 16:34	
Toluene-d8	112	87 - 121	07/05/16 16:34	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 11:00
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	DR-3	**Units:**	ug/L
Lab Code:	R1606856-018	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**31**	5.0	1	07/05/16 17:04	
trans-1,2-Dichloroethene	ND U	5.0	1	07/05/16 17:04	
Tetrachloroethene (PCE)	ND U	5.0	1	07/05/16 17:04	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/05/16 17:04	
Trichloroethene (TCE)	**31**	5.0	1	07/05/16 17:04	
Vinyl Chloride	ND U	5.0	1	07/05/16 17:04	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	07/05/16 17:04	
Dibromofluoromethane	112	89 - 119	07/05/16 17:04	
Toluene-d8	115	87 - 121	07/05/16 17:04	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 11:20
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	DR-4	**Units:**	ug/L
Lab Code:	R1606856-019	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**24**	5.0	1	07/05/16 17:35	
trans-1,2-Dichloroethene	ND U	5.0	1	07/05/16 17:35	
Tetrachloroethene (PCE)	ND U	5.0	1	07/05/16 17:35	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/05/16 17:35	
Trichloroethene (TCE)	**39**	5.0	1	07/05/16 17:35	
Vinyl Chloride	ND U	5.0	1	07/05/16 17:35	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	07/05/16 17:35	
Dibromofluoromethane	112	89 - 119	07/05/16 17:35	
Toluene-d8	116	87 - 121	07/05/16 17:35	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 11:40
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	G-1	**Units:**	ug/L
Lab Code:	R1606856-020	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**53**	5.0	1	07/05/16 18:06	
trans-1,2-Dichloroethene	ND U	5.0	1	07/05/16 18:06	
Tetrachloroethene (PCE)	ND U	5.0	1	07/05/16 18:06	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/05/16 18:06	
Trichloroethene (TCE)	**6.7**	5.0	1	07/05/16 18:06	
Vinyl Chloride	ND U	5.0	1	07/05/16 18:06	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	07/05/16 18:06	
Dibromofluoromethane	111	89 - 119	07/05/16 18:06	
Toluene-d8	109	87 - 121	07/05/16 18:06	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 11:50
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	G-2	**Units:**	ug/L
Lab Code:	R1606856-021	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**310**	**D**	13	2.5	07/06/16 20:52	
trans-1,2-Dichloroethene	ND	U	5.0	1	07/05/16 18:36	
Tetrachloroethene (PCE)	ND	U	5.0	1	07/05/16 18:36	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	07/05/16 18:36	
Trichloroethene (TCE)	**110**		5.0	1	07/05/16 18:36	
Vinyl Chloride	ND	U	5.0	1	07/05/16 18:36	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	07/05/16 18:36	
Dibromofluoromethane	113	89 - 119	07/05/16 18:36	
Toluene-d8	113	87 - 121	07/05/16 18:36	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16 12:00
Sample Matrix:	Water	**Date Received:**	06/29/16 15:00
Sample Name:	EQUIPMENT BLANK	**Units:**	ug/L
Lab Code:	R1606856-022	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	07/05/16 16:03	
trans-1,2-Dichloroethene	ND U	5.0	1	07/05/16 16:03	
Tetrachloroethene (PCE)	ND U	5.0	1	07/05/16 16:03	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/05/16 16:03	
Trichloroethene (TCE)	ND U	5.0	1	07/05/16 16:03	
Vinyl Chloride	ND U	5.0	1	07/05/16 16:03	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	07/05/16 16:03	
Dibromofluoromethane	112	89 - 119	07/05/16 16:03	
Toluene-d8	114	87 - 121	07/05/16 16:03	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Bergmann Associates, Incorporated **Service Request:** R1606856
Project: Gowanda
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 85 - 122	Dibromofluoromethane 89 - 119	Toluene-d8 87 - 121
MW-4	R1606856-001	104	115	110
MW-20	R1606856-002	107	112	114
MW-19R	R1606856-003	108	111	115
MW-15	R1606856-004	107	114	116
MW-14	R1606856-005	105	114	113
MW-18	R1606856-006	105	111	109
MW-21	R1606856-007	108	112	114
MW-16	R1606856-008	108	110	110
MW-7	R1606856-009	107	113	115
MW-6	R1606856-010	105	112	113
MW-12	R1606856-011	106	112	108
MW-11	R1606856-012	107	113	110
MW-1	R1606856-013	107	111	113
MW-X	R1606856-014	107	112	114
MW-17	R1606856-015	108	114	104
DR-1	R1606856-016	108	113	115
DR-2	R1606856-017	107	113	112
DR-3	R1606856-018	109	112	115
DR-4	R1606856-019	109	112	116
G-1	R1606856-020	108	111	109
G-2	R1606856-021	108	113	113
EQUIPMENT BLANK	R1606856-022	106	112	114
Lab Control Sample	RQ1607829-07	107	110	115
Method Blank	RQ1607829-08	106	113	115
Lab Control Sample	RQ1607892-03	110	111	114
Method Blank	RQ1607892-04	110	112	117
DR-1 MS	RQ1607892-05	111	112	116
DR-1 DMS	RQ1607892-06	112	113	115
Lab Control Sample	RQ1607961-03	108	111	116
Method Blank	RQ1607961-04	108	111	116

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QA/QC Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	06/29/16
Sample Matrix:	Water	**Date Received:**	06/29/16
		Date Analyzed:	07/5/16
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	DR-1	**Units:**	ug/L
Lab Code:	R1606856-016	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike RQ1607892-05			Duplicate Matrix Spike RQ1607892-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1-Trichloroethane (TCA)	ND U	226	250	90	232	250	93	74-127	3	30
cis-1,2-Dichloroethene	160 D	433	250	110	438	250	112	72-133	1	30
Tetrachloroethene (PCE)	ND U	256	250	102	262	250	105	67-137	3	30
trans-1,2-Dichloroethene	ND U	258	250	103	264	250	106	77-125	2	30
Trichloroethene (TCE)	750 D	1040	250	115	1060	250	123	62-142	2	30
Vinyl Chloride	ND U	257	250	103	264	250	105	60-157	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1607829-08	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	07/01/16 10:47	
trans-1,2-Dichloroethene	ND U	5.0	1	07/01/16 10:47	
Tetrachloroethene (PCE)	ND U	5.0	1	07/01/16 10:47	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/01/16 10:47	
Trichloroethene (TCE)	ND U	5.0	1	07/01/16 10:47	
Vinyl Chloride	ND U	5.0	1	07/01/16 10:47	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	07/01/16 10:47	
Dibromofluoromethane	113	89 - 119	07/01/16 10:47	
Toluene-d8	115	87 - 121	07/01/16 10:47	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1607892-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	07/05/16 11:57	
trans-1,2-Dichloroethene	ND U	5.0	1	07/05/16 11:57	
Tetrachloroethene (PCE)	ND U	5.0	1	07/05/16 11:57	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	07/05/16 11:57	
Trichloroethene (TCE)	ND U	5.0	1	07/05/16 11:57	
Vinyl Chloride	ND U	5.0	1	07/05/16 11:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	110	85 - 122	07/05/16 11:57	
Dibromofluoromethane	112	89 - 119	07/05/16 11:57	
Toluene-d8	117	87 - 121	07/05/16 11:57	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1606856
Project:	Gowanda	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1607961-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND	U	5.0	1	07/06/16 12:10	
trans-1,2-Dichloroethene	ND	U	5.0	1	07/06/16 12:10	
Tetrachloroethene (PCE)	ND	U	5.0	1	07/06/16 12:10	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	07/06/16 12:10	
Trichloroethene (TCE)	ND	U	5.0	1	07/06/16 12:10	
Vinyl Chloride	ND	U	5.0	1	07/06/16 12:10	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	07/06/16 12:10	
Dibromofluoromethane	111	89 - 119	07/06/16 12:10	
Toluene-d8	116	87 - 121	07/06/16 12:10	

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QA/QC Report

Client: Bergmann Associates, Incorporated
Project: Gowanda
Sample Matrix: Water

Service Request: R1606856
Date Analyzed: 07/01/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1607829-07

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
cis-1,2-Dichloroethene	8260C	20.1	20.0	100	80-121
trans-1,2-Dichloroethene	8260C	20.8	20.0	104	80-120
Tetrachloroethene (PCE)	8260C	22.7	20.0	113	78-124
1,1,1-Trichloroethane (TCA)	8260C	19.2	20.0	96	74-120
Trichloroethene (TCE)	8260C	21.0	20.0	105	78-123
Vinyl Chloride	8260C	20.9	20.0	105	69-133

Client: Bergmann Associates, Incorporated
Project: Gowanda
Sample Matrix: Water

Service Request: R1606856
Date Analyzed: 07/05/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1607892-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
cis-1,2-Dichloroethene	8260C	22.5	20.0	112	80-121
trans-1,2-Dichloroethene	8260C	20.7	20.0	104	80-120
Tetrachloroethene (PCE)	8260C	22.8	20.0	114	78-124
1,1,1-Trichloroethane (TCA)	8260C	18.5	20.0	92	74-120
Trichloroethene (TCE)	8260C	21.6	20.0	108	78-123
Vinyl Chloride	8260C	20.7	20.0	103	69-133

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QA/QC Report

Client: Bergmann Associates, Incorporated
Project: Gowanda
Sample Matrix: Water

Service Request: R1606856
Date Analyzed: 07/06/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1607961-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
cis-1,2-Dichloroethene	8260C	21.6	20.0	108	80-121
trans-1,2-Dichloroethene	8260C	20.3	20.0	102	80-120
Tetrachloroethene (PCE)	8260C	21.1	20.0	105	78-124
1,1,1-Trichloroethane (TCA)	8260C	18.8	20.0	94	74-120
Trichloroethene (TCE)	8260C	22.7	20.0	114	78-123
Vinyl Chloride	8260C	21.2	20.0	106	69-133

Bergmann associates
architects // engineers // planners

SEPTEMBER 2016

GROUNDWATER CHARACTERIZATION REPORT

NEW YORK STATE OFFICE OF PEOPLE WITH DEVELOPMENTAL DISABILITIES

GROUNDWATER CHARACTERIZATION REPORT
SEPTEMBER 2016 SAMPLING EVENT

Former Gowanda Day Habilitation Center
4 Industrial Place
Town of Gowanda, Cattaraugus County
Voluntary Cleanup Program Agreement V-00463-9

Prepared for:

Dormitory Authority & New York State Office of People with Developmental Disabilities

Bergmann Project No. 6974.85

Issuance Date: April 6, 2017

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CHARTS

APPENDICES

1.0 Introduction

Bergmann Associates (Bergmann) is submitting this groundwater characterization report for the September 2016 sampling event on behalf of the Dormitory Authority of the State of New York (DASNY) and the New York State Office of People with Developmental Disabilities (OPWDD) for activities conducted at the former Gowanda Day Habilitation Center facility at 4 Industrial Place, Gowanda, NY. The OPWDD, as the volunteer, has entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC) to conduct investigations and implement remedial measures in accordance with VCA Site No. V-00463-9, effective August 16, 2001.

1.1 Scope of Work

This report documents the site-wide groundwater monitoring and laboratory analytical sampling event conducted on September 14-15, 2016. Field measurements, sampling procedures and laboratory analysis were conducted in accordance with the October 2006 Operations, Monitoring and Maintenance (OM&M) Manual and as modified with NYSDEC approval. During this sampling event, groundwater from 14 of 21 site-related groundwater monitoring wells and 7 of 7 groundwater recovery wells were sampled for laboratory analysis. Of the 8 monitoring wells determined by the NYSDEC and Bergmann personnel in 2008 to be outside the area of impact by the Groundwater Treatment System (GTS), 7 were not sampled. These monitoring wells include MW-2, MW-3, MW-5, MW-8, MW-9, MW-10 and MW-13. Monitoring well MW-21 was added to the well sampling plan permanently by NYSDEC to monitor groundwater migration off-site.

The prior groundwater sampling event was conducted in June 2016 and included analysis of groundwater samples from 14 of 21 site-related groundwater monitoring wells and 6 of 7 groundwater recovery wells. Results of the June 2016 sampling event were summarized in a report dated March 21, 2016.

1.2 Site Background

The Gowanda Day Habilitation site consists of a 5.94 acre parcel located at 4 Industrial Place. The building, previously used by several manufacturing operations, was built in stages between circa 1948 and 1987 and was renovated in 1987-1988. New York State agencies have occupied the building since 1982. New York State acquired the parcel in 1989. The building was most recently operated by the OPWDD, which at that time was known as the Western New York Developmental Disabilities Services Office, as a Day Habilitation Center for mental care clients. In April 2001, on-site operations ceased. The nature and extent of contamination at the Gowanda Day Habilitation Center was detailed as part of the 2003 Site Investigation and 2004 Supplemental Site Investigation Reports. Trichloroethene (TCE) was the most commonly detected compound. TCE degradation products cis-1,2,Dichloroethene (Cis-1,2-DCE), trans-1,2-Dichloroethene (Trans-1,2-DCE) and Vinyl Chloride (VC) were also detected.

Following Interim Remedial Measure (IRM) system installation, the Groundwater Treatment System (GTS) and the Soil Vapor Extraction System (SVES) were activated on May 10, 2005, recovering 2-5 gallons per minute (gpm) of groundwater. An additional groundwater recovery well, designated G-3, was installed outside the building and adjacent to MW-17 in November 2008. The GTS portion consists of 7 groundwater recovery wells (4 dual phase recovery wells and 3 groundwater-only recovery wells), an air compressor, a network of controller-less pneumatic pumps and an air stripper treatment system to process recovered groundwater. Recovered groundwater was pumped to the equalization tank for settling of the sediment and transferred to the air stripper using a consistent flow rate. Air discharge from the air stripper was routed to the EVE for treatment prior to discharge. Groundwater was discharged to the village of Gowanda Sewage Treatment Plant (STP).

In January 2008, the building was decommissioned. The GTS was winterized with the addition of heat tape and insulation to conveyance lines and the installation of an independently operated suspended heater in the treatment area for the GTS and SVES (former Machine Shop). Quarterly groundwater sampling with Operation and Maintenance of the remediation system has been ongoing since 2002.

In January 2014, the condition of the SVE and GTS was discussed with the NYSDEC representative and it was agreed that these systems would be inactivated to allow for groundwater level recovery during the preparation of an ISCO remedial action plan (RAP) and implementation of an ISCO treatment. Bergmann submitted an ISCO RAP for groundwater treatment to the NYSDEC to address remaining contamination at the Site in lieu of costly repair of the SVE and GTS. The SVE and GTS equipment will remain on site in the event that re-activation is required in the future. The ISCO was implemented in May 2015 and a second round was implemented in September 2015. An ISCO Report was prepared under separate cover.

2.0 Groundwater Sampling Overview and Methods

2.1 Well Maintenance Activities

During the September 2016 site visit, all monitoring wells were accessible and the integrity of the wells was not compromised. Repairs or maintenance to the network of groundwater monitoring wells or recovery wells has not been required since June 2007, with the exception of redevelopment activities performed on August 19, 2015. All protective casings and flush-mount curb boxes were found to be intact and secure. Exterior monitoring wells are secured with locking stick-up protective casings. The monitoring wells within the building are secured with flush-mount roadway covers. Well maintenance was not performed during the September 2016 sampling event.

2.2 Groundwater Field Monitoring and Sampling Activities

Groundwater measurements and sampling activities were conducted in accordance with the October 2006 OM&M Manual. The depths to groundwater for groundwater monitoring wells are determined on a regular basis to track site-wide changes in the water table elevation and to allow for adjustment at recovery wells. Past operation of the recovery wells was intended to establish hydraulic containment of the plume of impacted groundwater beneath the former Day Habilitation building and improve recovery and treatment of impacted groundwater. Groundwater samples were collected from 14 of the 21 site-related groundwater monitoring wells for laboratory analysis on September 14-15, 2016. Depth to groundwater measurements were obtained from 27 wells (including recovery wells).

Groundwater samples were collected from monitoring wells after each well was gauged and purged of standing water via low-flow pumping using a Geo-pump electric peristaltic pump. Sample parameters including turbidity, temperature, pH, oxygen, salinity and conductivity were monitored using a Horiba U-53 to ensure sufficient well purging prior to sampling. Groundwater samples were collected from recovery wells using dedicated bailers, to allow for an accurate representation of groundwater to reduce collection of sediment from within the wells. A single duplicate sample and a field blank sample were collected and submitted for laboratory analysis. The duplicate sample was collected after sampling MW-1, the well with the highest concentration of contamination for historic sampling events.

Groundwater samples were delivered via chain-of-custody protocol to ALS Environmental Services located in Rochester, NY, a NYSDOH certified laboratory, for testing using EPA Method 8260B for targeted chlorinated volatile organic compounds (VOCs) of concern. Analytical results for each individual monitoring well have been posted for comparative purposes from sampling events completed 2002 – 2015.

3.0 Local Groundwater Flow Characterization

The Site water table potentiometric surface pattern and groundwater flow direction was determined for September 2016 using elevations measured at each well. Groundwater elevations and well reference elevations were calculated using depth to water values obtained on September 14, 2016. The well gauging values and groundwater elevations are provided in Table 1 – Groundwater Elevations and Field Measurements September 2016.

The September 2016 groundwater contour map shows a flow pattern similar to groundwater contours observed historically since 2002. Groundwater at the Site is flowing in a northerly direction. Torrance Place is hydraulically down-gradient from the Day Habilitation Center building. The September 2016 depths to groundwater range from 7.56 ft below top of casing (btoc) at MW-2, located on the south side of the property to 13.72 ft btoc at MW-17 located at the northern property line. The average depth to groundwater at the wells measured was 10.28 ft bgs.

The site-wide average depth to water table increased by approximately 0.25 ft when compared to the June 2016 sampling event. This increase in the water table is inferred as seasonal.

Measured depth to water at all gauged monitoring and recovery wells is presented Table 1 and Groundwater Contours are presented on Figure 1 – September 2016 Groundwater Contour Map.

4.0 Laboratory Analysis

4.1 Laboratory Analysis on Groundwater Samples

Laboratory analysis was completed on the groundwater samples from 14 monitoring wells and 7 recovery wells collected September 14-15, 2016. Samples were analyzed for VOCs via EPA Method 8260B. Analysis was performed in accordance with the October 2006 OM&M Manual. The following halogenated VOCs were analyzed for:

- Trichloroethene (TCE)
- 1,1,1 Trichloroethane (TCA)
- Cis-1,2-Dichloroethene (Cis-DCE)
- Trans-1,2-Dichloroethene (Trans-DCE)
- Vinyl Chloride (VC)

4.2 Monitoring Well Groundwater Analysis Summary

The September 2016 analytical results indicate 3 chlorinated VOCs in monitoring well samples: TCE, Cis-DCE, and Vinyl Chloride. Chlorinated VOCs were detected in groundwater from 11 of the 14 sampled monitoring wells. Analytical results are summarized in Table 2 – September 2016 Analytical Results Summary, which compares detected VOCs and applicable NYSDEC Class GA Standards for each analyte. The complete laboratory analytical reporting package is provided in Appendix A – Laboratory Analytical Results Report September 2016 Sampling Event. Table 3 – Historic Groundwater Analysis Results Summary includes the historical total VOC concentrations at each well since sampling of the monitoring wells began in 2002.

VOCs were not detected in groundwater from 3 of the sampled monitoring wells (MW-4, MW-19R, and MW-20). Sample results from these wells have historically indicated low to non-detect levels of VOCs.

Groundwater samples from 11 monitoring wells had detectable chlorinated VOCs at concentrations above applicable Class GA Standards. The monitoring well with the highest total VOCs, MW-1 (838 ppb), is located in the area of the historically greatest impacted groundwater.

Concentrations in 7 of the 14 monitoring well groundwater samples increased when compared to the June 2016 sampling event while concentrations in 4 of the 14 monitoring well groundwater samples decreased. Concentrations in 3 groundwater samples from monitoring wells had no change. The current sampling analytical results indicate an average site-wide decrease in total VOCs of approximately 69% since activation of the GTS in May 2005.

Due to high concentrations of TCE and Cis-DCE in the samples from monitoring wells MW-1, MW-4, MW-11, MW-17, DR-1 and G-3, diluted analysis and correspondingly elevated detection limits were required. It is possible that related chlorinated VOCs Trans-1,2 DCE and Vinyl Chloride may be present at concentrations below the elevated detection limits for these samples.

The area of highest impacted groundwater exists at the area centered between monitoring wells MW-1 and MW-11, which has historically indicated the highest levels of VOCs and is inferred as the source area of impacted groundwater. In the area where the plume of impacted groundwater is inferred (monitoring wells MW-1, MW-6, MW-7, MW-11, MW-12, MW-14, MW-15, and MW-17) the current laboratory analysis shows a contaminant reduction in VOC concentrations by an average of approximately 70% since groundwater monitoring of these wells began in 2002.

Monitoring well MW-1 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at monitoring well MW-1 for the September 2016 sampling event is 838 parts per billion (ppb), an increase from the June 2016 value of 580 ppb. Since activation of the GTS, detected VOCs at MW-1 have increased by 8%.

Monitoring well MW-11 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-11 for the September 2016 sampling event is 445 ppb, a decrease from the June 2016 value of 550 ppb. Since activation of the GTS, detected VOCs at MW-11 have decreased by 90%.

Monitoring well MW-12 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-12 for the September 2016 sampling event is 7.8 ppb, a decrease from the June 2016 value of 15.8 ppb. MW-12 is nearest to recovery well DR-2, in close proximity to the center of the building. Since activation of the GTS in May 2005, detected VOCs at MW-12 have decreased by 100%.

Monitoring well MW-14 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-14 for the September 2016 sampling event is 100 ppb, an increase from the June 2016 value of 57 ppb. MW-14 is nearest to recovery well DR-3. Since activation of the GTS in May 2005 detected VOCs at MW-14 have decreased by 68%.

Monitoring well MW-15 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-15 for the September 2016 sampling event is 23.8 ppb, an increase from the June 2016 value of 11 ppb. MW-15 is nearest to recovery well DR-4. Since activation of the GTS the detected VOCs at MW-15 have decreased by 97%.

Five groundwater monitoring wells are located along the subject property's north perimeter, down-gradient from the area of impacted groundwater. The north perimeter monitoring wells consist of wells MW-5, MW-6, MW-7, MW-16, MW-17 and MW-21. MW-5 has not been sampled since the March 2008 sampling event. Analytical results are discussed below. The current analytical results exhibit an increase in targeted VOCs at the sampled monitoring wells along the north perimeter.

Monitoring wells MW-18, MW-19R and MW-21 are located off-site along Torrance Place. These three wells are considered to be beyond the radius of influence for the Day Habilitation groundwater treatment system. The current results indicate non-detect for MW-18 and MW-19R. Monitoring well MW-21 was added to the sampling list at the request of the NYSDEC beginning with the June 2016 sampling event. The total VOC concentration at MW-21 for the September 2016 sampling event is 39 ppb, an increase from the June 2016 value of 8.7 ppb. Monitoring well MW-21 is located north-northwest of the Site, on the opposite side of Thatcher Brook.

Laboratory analytical results are included in Appendix A. Monitoring well locations and distribution of analytical results are shown on Figure 2 – September 2016 Distribution of Groundwater Analytical Results: Monitoring Wells.

4.3 Sentry Well Groundwater Analysis Summary

Sentry groundwater monitoring wells monitor a separate occurrence of contaminated groundwater at the Gowanda Electronics site (NYSDEC Site 905025), immediately east of Industrial Place and east of the Day Habilitation Center property. The eastern sentry wells sampled for this event included MW-19R, MW-20 and MW-4. The current results indicate non-detect for all three samples from the eastern sentry wells.

The Gowanda Electronics impacted groundwater plume may be migrating to an area near Industrial Place and has intermittently impacted MW-19R. The Gowanda Electronics impacted groundwater plume does not appear to extend to the Day Habilitation Center property, based on consistent non-detect values at the eastern sentry wells. Conversely, impacted groundwater from the Day Habilitation Center does not appear to extend off-site to the east toward Industrial Place. According to Mr. Chris Sanson, an Environmental Scientist for Groundwater & Environmental Services, Inc. (GES), an ISCO was implemented for the Gowanda Electronics site in March 2014.

Laboratory analytical results are included in Appendix A. Sentry well locations and analytical results are shown on Figure 2.

4.4 Recovery Well Groundwater Analysis Summary

During the September 2016 sampling event, 7 of the 7 recovery wells were sampled. The September 2016 analytical results indicate detection of 2 chlorinated VOCs in recovery well samples: TCE and Cis-DCE. Chlorinated VOCs were detected in samples from 6 of the 7 sampled recovery wells. Total VOCs at the 7 recovery wells for which past data is available have decreased since activation of the GTS in May 2005. The average reduction in VOCs for the current sampling event is 41% relative to concentrations prior to GTS activation in 2005. Relative percent reductions in total VOCs for all monitoring wells and recovery wells are shown on Table 4 – Percent Reductions in Total Groundwater VOCs.

Recovery well DR-1 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-1 for the September 2016 sampling event is 610 ppb, a decrease from the June 2016 value of 910 ppb. The current sampling event indicates an increase in VOCs at DR-1 of 6% since activation of the GTS. Recovery well DR-1 is located closest to MW-1 in the area of historically highest concentrations.

Recovery well DR-2 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-2 for the September 2016 sampling event is 218 ppb, a slight increase from the June 2016 value of 215 ppb. The current sampling event indicates a decrease in VOCs at DR-2 of 60% since activation of the GTS.

Recovery well DR-3 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-3 for the September 2016 sampling event is 154 ppb, an increase from the June 2016 value of 62 ppb. The current sampling event indicates an increase in VOCs at DR-3 of 1% since activation of the GTS.

Recovery well DR-4 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-4 for the September 2016 sampling event is 95 ppb, an increase from the June 2016 value of 63 ppb. The current sampling event indicates a decrease in VOCs at DR-4 of 89% since activation of the GTS.

Recovery well G-1 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at G-1 for the September 2016 sampling event was 105.6 ppb, an increase from the June 2016 value of 59.7 ppb. The current sampling event indicates a decrease in VOCs at G-1 of 47% since activation of the GTS.

Recovery well G-2 last sampled in August 2015. Recovery well G-2 decreased in targeted chlorinated VOCs relative to the August 2015 sampling event. The total VOC concentration at G-1 for the September 2016 sampling event was non-detect, a decrease from the August 2015 value of 28 ppb. The current sampling event indicates a decrease in VOCs at G-2 of 100% since activation of the GTS.

Recovery well G-3 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at G-3 for the September 2016 sampling event is 404 ppb, a decrease from the June 2016 value of 420 ppb. The current sampling event indicates an increase in VOCs at G-3 of 0.2% since activation of the GTS. Recovery well G-3 is located along the northern property boundary.

Laboratory analytical results are included in Appendix A. Recovery well locations and analytical results are shown on Figure 3 – September 2016 Distribution of Groundwater Analytical Results: Recovery Wells.

4.5 Quality Assurance and Quality Control Samples

For quality assurance purposes a duplicate groundwater sample was collected from monitoring well MW-1, designated sample "MW-X." Results from sample MW-X were consistent with the sample collected from MW-1.

A trip blank was supplied by the laboratory and submitted for analysis along with the groundwater samples. The trip blank sample was non-detect for chlorinated halogens. An equipment blank was also collected to ensure proper cleaning of the sampling equipment. The equipment blank, designated as EB, was non-detect for chlorinated halogens.

Laboratory analytical results are included in Appendix A.

5.0 Remediation System Efficiency

5.1 Impact of the GTS Recovery Wells

Groundwater control charts for the 7 recovery wells and the nearest relative monitoring well were created to illustrate the impact of the GTS on recovery wells at the Day Habilitation Center. Chart 1 presents a summary of the sampled groundwater recovery wells. Since activation of the GTS in May 2005, all 7 groundwater recovery wells have demonstrated a general decrease in VOC concentration.

The current sampling event results represent an increase of total VOCs at 4 recovery wells (DR-2, DR-3, DR-4 and G-1) when compared to the June 2016 sampling event. This increase may be attributed to residual contamination in the sand pack of the recovery wells due to the shutdown of the GTS and the movement of sand pack and sediment during the ISCO injections completed in May and September 2015.

Chart 2 displays the relationship between monitoring wells MW-1, MW-11 and recovery well DR-1. The current total VOCs at MW-1 (838 ppb) show an increase from the June 2016 sampling event (580 ppb). This increase may be attributed to residual contamination in the sand pack of the recovery wells due to the shutdown of the GTS and the movement of sand pack and sediment during the ISCO injections completed in May 2015 and September 2015. The current total VOCs at MW-11 (445 ppb) show a decrease from the June 2016 sampling event (550 ppb). The current total VOCs at DR-1 (610 ppb) show a decrease from the June 2016 sampling event (910 ppb).

Chart 3 compares laboratory results between recovery well DR-2 and monitoring well MW-12. These wells are located north of the wells outlined in Chart 1 and represent the northern limit of the highest concentration within the impacted area. The current total VOCs at MW-12 (7.8 ppb) show a decrease from the June 2016 sampling event (15.8 ppb). The current total VOCs at recovery well DR-2 (218 ppb) show a slight increase from the June 2016 sampling event (215 ppb).

Chart 4 compares the relationship between wells DR-3 and MW-14 which are located in the central portion of the Gowanda Day Habilitation building. The current total VOCs at MW-14 (100 ppb) show an increase from the June 2016 sampling event (57 ppb). The current total VOCs at recovery well DR-3 (154 ppb) show an increase from the June 2016 sampling event (62 ppb).

Chart 5 compares laboratory results between recovery well DR-4 and MW-15. These wells are located at the center-north portion of the building. The current total VOCs at MW-15 (11 ppb) show a slight increase from the November 2015 sampling event (9.9 ppb). The current total VOCs at recovery well DR-4 (63 ppb) show a decrease from the November 2015 sampling event (94 ppb). This increase may be attributed to residual contamination in the sand pack of the recovery wells due to the shutdown of the GTS and the movement of sand pack and sediment during the ISCO injections completed in May 2015 and September 2015.

Chart 6 compares laboratory results between recovery well G-1 and monitoring well MW-17. Recovery well G-1 is located in the northern portion of the building and monitoring well MW-17 is located along the northern property line. The current total VOCs at recovery well G-1 (105.6 ppb) show an increase from the June 2016 sampling event (59.7 ppb). This increase may be attributed to residual contamination in the sand pack of the recovery wells due to the shutdown of the GTS and the movement of sand pack and sediment during the ISCO injections completed in May 2015 and September 2015.

Chart 7 compares laboratory results between recovery well G-2 and monitoring well MW-7 which are located at the northeastern portion of the building. This area is at the apparent western perimeter of the area of impacted groundwater. The current total VOCs at recovery well G-2 are non-detect, which shows a decrease from the last time the well was sampled, August 2015, total VOCs (28 ppb). The current total VOCs at monitoring well

Chart 8 compares laboratory results between recovery well G-3 which is located at the northeastern portion of the building and MW-17 which is located along the northern property boundary. This area is at the western perimeter of the apparent area of impacted groundwater. The current total VOCs at recovery well G-3 (404 ppb) show a slight increase from the June 2016 sampling event (420 ppb). The current total VOCs at monitoring well MW-17 (465 ppb) show a slight increase from the June 2016 sampling event (425 ppb). Groundwater sampling results from monitoring wells along the western and eastern perimeters have consistently been non-detect.

5.2 Extent of Impacted Groundwater

The area of highest impacted groundwater is consistent with prior sampling events. The bulk of the contaminant mass appears to be concentrated beneath the building in the source area, in the vicinity of monitoring well MW-1 and MW-11, extending north to recovery well DR-2. Concentration of VOCs in the source area have been reduced as a result of cleanup activities.

When operating, the GTS maintained an area of hydraulic containment for recovery wells within the source area of impacted groundwater. The GTS was successful in hydraulically containing most of the contaminant plume on the property and minimizing further migration. The GTS was not operating during this monitoring period and overall sample results are similar to previous quarterly sampling results. Therefore, residual VOCs in the plume have not migrated and appear to be stabilized when compared to sample results with operation of the GTS during previous monitoring events.

VOCs were not detected at MW-19R during the June 2016 sampling event. Monitoring well MW-21 was added to the sampling plan at the request of the NYSDEC. The total VOC concentration at MW-21 for the current sampling event (8.7 ppb) is the lower than the November concentration (20 ppb). MW-19R, MW-18 and MW-21 are off-site monitoring wells located north of the facility. These monitoring points are inferred as beyond the area of hydraulic influence of the recovery wells. Impacted groundwater at these areas was detected prior to activation of the GTS in May 2005.

The redevelopment of wells performed in fall 2015 at the Site was performed to remove sediment from wells at the Site after the ISCO in-situ injections. Overall reduction of contaminants in the majority of the monitoring and recovery wells has occurred at the Site when viewed over the past 10 years of sampling. A meeting with Bergmann, DASNY and NYSDEC should be scheduled to determine next steps for further contaminant reduction and eventual spill closure.

5.3 Future Groundwater Monitoring and Analysis Activities

The condition of the SVE and GTS was discussed with the NYSDEC representative and it was agreed that these systems would be inactivated to allow for groundwater level recovery during the implementation of an ISCO groundwater treatment and subsequent sampling events. Bergmann performed an ISCO RAP in May (round 1) and September (round 2) 2015 to address remaining residual contamination at the Site in lieu of costly repair of the SVE and GTS. The SVE and GTS equipment remains on site in the event that re-activation is required in the future; however, system components may need repair and/or replacement. Three routine quarterly monitoring events are required to complete NYSDEC requirements for the ISCO groundwater treatment.

A site-wide groundwater sampling and laboratory analysis event occurred on November 21-22, 2016, discussed under separate cover. This sampling event included sampling and laboratory analysis for the limited number of wells as determined by Bergmann correspondence with the NYSDEC. Future sampling and analytical events will be conducted to track the effects of the treatment system and ISCO treatment on impacted groundwater and to evaluate seasonal changes in water table elevations. In addition, the evaluation of groundwater flow pattern and movement of residual impacted groundwater at the site will be performed during future sampling events.

TABLES

Table 1 Groundwater Elevations and Field Measurements September 2016
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
Casing Elevation*	778.23	778.08	778.38	778.43	778.61	781.10	780.94	781.33	782.61	780.02
Depth to Groundwater (btoc)	7.73	7.56	7.57	8.30	11.03	13.54	13.49	10.62	10.62	10.02
Groundwater Elevation	770.50	770.52	770.81	770.13	767.58	767.56	767.45	770.71	771.99	770.00
Well Diameter	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Product Thickness	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Well Depth (btoc)	16.02	17.15	16.30	15.78	13.95	22.88	21.80	17.65	20.96	19.42
Bottom of Well Elevation	762.21	760.93	762.08	762.65	764.66	758.22	759.14	763.68	761.65	760.60
Thickness of Water Column	8.29	NA	8.73	7.48	2.92	9.34	8.31	7.03	10.34	9.40
Minimum Purge Volume (gal)	1.4	NA	1.4	1.2	0.5	1.5	1.4	1.1	1.7	1.5
3 Volumes	4.1	NA	4.3	3.7	1.4	4.6	4.1	3.4	5.1	4.6
Actual volume purged	4.1	NS	NS	3.7	NS	4.6	4.1	NS	NS	NS
Comments	Flush = -0.29'	Flush = -0.30'	Flush = -0.23'	Flush = -0.34'	Flush = -0.24'	Stickup=2.17'	Stickup=2.17'	Stickup=2.84'	Stickup=2.05'	Stickup=2.56'

	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19R	MW-20	MW-21
Casing Elevation	778.58	778.50	778.39	778.43	778.38	780.43	779.85	776.39	774.2	778.04	774.76
Depth to Groundwater (btoc)	8.14	8.26	10.27	10.76	10.80	12.89	13.72	9.72	8.70	10.53	9.72
Groundwater Elevation	770.44	770.24	768.12	767.67	767.58	767.54	766.13	766.67	765.50	767.51	765.04
Well Diameter	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Product Thickness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Well Depth (btoc)	15.48	17.38	17.40	18.15	19.80	23.26	25.18	25.0	17.67	14.75	15.82
Bottom of Well Elevation	763.10	761.12	760.99	760.28	758.58	757.17	754.67	751.39	756.53	763.29	758.94
Thickness of Water Column	7.34	9.12	7.13	7.39	9.00	10.37	NA	15.28	8.97	4.22	6.10
Minimum Purge Volume (gal)	1.2	1.5	1.2	1.2	1.5	1.7	NS	2.5	1.5	0.7	0.99
3 Volumes	3.6	4.5	3.5	3.6	4.4	5.1	NS	7.5	4.4	2.1	3.0
Actual volume purged	3.6	4.5	NS	3.6	4.4	5.1	NS	7.5	4.4	2.1	NS
Comments	Flush = -0.23'	Flush = -0.35'	Flush = -0.48'	Flush = -0.39'	Flush = -0.38	Stickup=2.26'	Stickup=1.18'	Flush =-0.26'	Flush ='0.36'	Flush=-0.43'	Flush =-.71'

	DR-1	DR-2	DR-3	DR-4	G-1	G-2	G-3
Casing Elevation	779.66	779.93	779.78	779.64	779.83	779.72	NA
Depth to Groundwater (btoc)	8.65	8.76	11.46	11.38	11.63	11.46	10.62
Groundwater Elevation	771.01	771.17	768.32	768.26	768.20	768.26	NA
Well Diameter	4"	4"	4"	4"	4"	4"	4"
Product Thickness	ND	ND	ND	ND	ND	ND	ND
Well Depth (btoc)	18.06	18.06	20.45	19.69	22.98	20.72	~27.00
Bottom of Well Elevation	761.6	761.87	759.33	759.95	756.85	759	NA
Thickness of Water Column	9.41	9.30	8.99	8.31	11.35	NA	NA
Minimum Purge Volume (gal)	6.14	6.07	5.87	5.43	7.41	NS	NS
3 Volumes	18.43	18.22	17.61	16.28	22.23	NS	NS
Actual volume purged	18.43	18.22	17.61	16.28	22.23	NS	NS
Comments	Stickup=0.85'	Stickup=1.06'	Stickup=0.95'	Stickup=0.84'	Stickup=1.03'	Stickup=0.86'	

NOTES

btoc = Below top of casing (inner riser) All measurements are in feet, referenced to Mean Sea Level
ND = No floating product encountered
Minimum purge volume = 3 X well volume, 0.163 gallon per foot in a 2" diameter well. 0.653 gallon per foot in a 4" diameter well.
Monitoring well MW-19 was removed and the area restored on July 23, 2003 immediately after the well was developed, purged of 3 volumes and sampled.
The borehole for MW-19 was backfilled with a cement-bentonite grout after the PVC screening and casing was successfully removed.
Wells MW-19R, MW-20 and MW-21 were installed in October 2004.

Table 2 September 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-1 Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**410**	**390**	5.0
CIS	**410**	**190**	5.0
TRANS	ND	ND	5.0
VC	**18**	ND	2.0
TCA	ND	ND	5.0
Total VOCs	838	580	

Monitoring Well MW-2 Sample Date: NS
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-3 Sample Date: NS
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-4 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

Monitoring Well MW-5 Sample Date: NS
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-6 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**120**	**100**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	120	100	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 September 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-7 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**62**	**83**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	62	83	

Monitoring Well MW-10 Sample Date: NS
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-8 Sample Date: NS
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-11 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**130**	**250**	5.0
CIS	**300**	**300**	5.0
TRANS	ND	ND	5.0
VC	**15**	ND	2.0
TCA	ND	ND	5.0
Total VOCs	445	550	

Monitoring Well MW-9 Sample Date: NS
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-12 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	**5.8**	5.0
CIS	**7.8**	**10**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	7.8	15.8	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 September 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-13 Sample Date: NS
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-14 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**31**	**34**	5.0
CIS	**69**	**23**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	100	57	

Monitoring Well MW-15 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**17**	**11**	5.0
CIS	**6.8**	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	23.8	11	

Monitoring Well MW-16 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**20**	**37**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	20	37	

Monitoring Well MW-17 Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**95**	**95**	5.0
CIS	**370**	**330**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	465	425	

Monitoring Well MW-18 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**26**	**6.9**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	26	6.9	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 September 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-19R Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

Monitoring Well MW-20 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

Monitoring Well MW-21 Sample Date: 09/14/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**39**	**8.7**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	39	8.7	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 September 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Recovery Well DR-1 Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**500**	**750**	5.0
CIS	**110**	**160**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	610	910	

Recovery Well DR-2 Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**38**	**35**	5.0
CIS	**180**	**180**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	218	215	

Recovery Well DR-3 Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**34**	**31**	5.0
CIS	**120**	**31**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	154	62	

Recovery Well DR-4 Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**34**	**39**	5.0
CIS	**61**	**24**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	95	63	

Recovery Well G-1 Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**5.6**	**6.7**	5.0
CIS	**100**	**53**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	105.6	59.7	

Recovery Well G-2 Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	NS	5.0
CIS	ND	NS	5.0
TRANS	ND	NS	5.0
VC	ND	NS	2.0
TCA	ND	NS	5.0
Total VOCs	ND	NS	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 September 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Recovery Well G-3 Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**84**	**110**	5.0
CIS	**320**	**310**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	404	420	

Duplicate Blank Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	**430**	**370**	5.0
CIS	**430**	**180**	5.0
TRANS	ND	ND	5.0
VC	**19**	ND	2.0
TCA	ND	ND	5.0
Total VOCs	879	550	

Equipment Blank Sample Date: 09/15/2016
Sampling Events

Analyte in ppb	Sep 2016	Jun 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 3 Historic Groundwater Analysis Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

MONITORING WELLS

Monitoring Well Number	Total VOCs Sep 2016 (ppb)	Total VOCs Jun 2016 (ppb)	Total VOCs Nov 2015 (ppb)	Total VOCs Aug 2015 (ppb)	Total VOCs Jun 2015 (ppb)	Total VOCs Mar 2015 (ppb)	Total VOCs Nov 2014 (ppb)	Total VOCs Sep 2014 (ppb)	Total VOCs Jun 2014 (ppb)	Total VOCs Mar 2014 (ppb)	Total VOCs Dec 2013 (ppb)	Total VOCs Jul 2013 (ppb)	Total VOCs Apr 2013 (ppb)	Total VOCs Dec 2012 (ppb)	Total VOCs Jun 2012 (ppb)	Total VOCs Mar 2012 (ppb)	Total VOCs Sep 2011 (ppb)	Total VOCs Jun 2011 (ppb)	Total VOCs Mar 2011 (ppb)	Total VOCs Dec 2010 (ppb)	Total VOCs Sep 2010 (ppb)	Total VOCs Jun 2010 (ppb)	Total VOCs Jul 2009 (ppb)	Total VOCs Feb 2009 (ppb)	Total VOCs Sep 2008 (ppb)	Total VOCs Jun 2008 (ppb)	Total VOCs Mar 2008 (ppb)	Total VOCs Sep 2007 (ppb)	Total VOCs May 2007 (ppb)	Total VOCs Oct 2006 (ppb)	Total VOCs Nov 2005 (ppb)	Total VOCs Oct 2004 (ppb)	Total VOCs Jul 2003 (ppb)	Total VOCs Aug 2002 (ppb)
MW-1	838	580	1,530	1,470	350	430	300	420	990	990	1,740	830	910	1,440	528	889	442	1,318.1	583	564	649	778	1107.16	677	860	705	1,463	1,481	2,046	1,769	1,128	1,250	2,879	768
MW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	ND	ND	ND	ND	ND	7.1	23
MW-3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	2.4	ND	ND	8.42	5.6	3.1	15
MW-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	1.8	3.8
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	3.41	ND	ND	5.13	6.7	7.3	14
MW-6	120	100	120	96	86	81	110	110	96	94	130	99	93	99	86.7	85.7	101	79	73.2	81.8	107	96	92.8	87.8	113	123	105	171	151	173	233	280	333	406
MW-7	62	83	49	130	58	ND	180	190	29	ND	ND	18	ND	ND	151.56	30.5	209.16	70.9	22.3	58.2	160.5	114.46	213	92.34	347.8	244	196.7	360	330.5	420	455.7	508	534	450
MW-8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	1.4
MW-9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	4.2
MW-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	2.6
MW-11	445	550	1,060	630	444	500	451	375	450	710	880	510	570	790	498	617	508.7	722	623	588	630.7	765	625.9	790	437.3	564.9	1,023	398.6	1,189	2,600	1,101	2,355	34,169	4,647
MW-12	7.8	15.8	28.8	52	97	120	126	136	200	212	173	149.3	186.6	142	86.5	148.22	92.8	162.9	90.82	90.4	100	159.8	82	279.01	65.8	159	165.6	196.9	429	1,082	4,776	6,900	12,100	12,643
MW-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	2.02	ND	ND	ND	ND	31	315
MW-14	100	57	81	96	52	99	68	68	54	73	94	49	71	47	39.7	76.6	77.3	104.98	31.9	24.33	38.93	65.22	40.72	34.9	17.8	38.15	29.3	103.2	106.8	293.9	139.9	67	140	315
MW-15	23.8	11	9.9	14	8.1	9.8	32	31	6.1	ND	6.8	7	ND	12.9	26.26	6.25	32.46	16.18	6.92	16.85	62	22.93	64.8	4.9	113.3	77.3	18.2	149.6	60.4	149.9	271	320	258	730
MW-16	20	37	31	13	6.8	ND	5.2	9.4	21	24	20	8.4	24	18	4.36	12.2	6.07	23.1	28.9	7.21	2.53	ND	22	22.2	16.2	21.3	8.56	24.7	60.0	51.2	65.4	82	38	NA
MW-17	465	425	460	410	NS	336	394	410	339	167	420	400	21.3	430	381	260.1	449	225.2	26.7	48.1	312.3	232.1	228.8	4.41	728	599	610	903.0	777	1,011	1,006	1,154	810	NA
MW-18	26	6.9	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	16.6	2.33	28.7	13.9	6.43	17.9	40.77	27.5	196	13.07	238.6	115.2	56.0	719	442	392	375	460	159	NA
MW-19R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	ND	ND	ND	ND	ND	ND	2.67	ND	4.27	ND	13.7	10.57	ND	22.1	2.64	11.4	20.2	14	10*	NA
MW-20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	NA	NA
MW-21	39	8.7	20	20	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	141.8	NS	14.3	533	318	29	495.6	436	NA	NA
MW-X (DUP)	879	550	1,720	410	360	407	300	400	870	990	1,850	540	186.8	1,450	521	913	457	1,022.2	Sample loss*	588	611	264	598	678	902	648	12.41	888	437	1,350	1031.49	540.6	7.1	133.63
EB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	ND	ND	NS	ND	0.001

RECOVERY WELLS

Recovery Well Number	Total VOCs Sep 2016 (ppb)	Total VOCs Jun 2016 (ppb)	Total VOCs Nov 2015 (ppb)	Total VOCs Aug 2015 (ppb)	Total VOCs Jun 2015 (ppb)	Total VOCs Mar 2015 (ppb)	Total VOCs Nov 2014 (ppb)	Total VOCs Sep 2014 (ppb)	Total VOCs Jun 2014 (ppb)	Total VOCs Mar 2014 (ppb)	Total VOCs Dec 2013 (ppb)	Total VOCs Jul 2013 (ppb)	Total VOCs Apr 2013 (ppb)	Total VOCs Dec 2012 (ppb)	Total VOCs Jun 2012 (ppb)	Total VOCs Mar 2012 (ppb)	Total VOCs Sep 2011 (ppb)	Total VOCs Jun 2011 (ppb)	Total VOCs Mar 2011 (ppb)	Total VOCs Dec 2010 (ppb)	Total VOCs Sep 2010 (ppb)	Total VOCs Jun 2010 (ppb)	Total VOCs Jul 2009 (ppb)	Total VOCs Feb 2009 (ppb)	Total VOCs Sep 2008 (ppb)	Total VOCs Jun 2008 (ppb)	Total VOCs Mar 2008 (ppb)	Total VOCs Sep 2007 (ppb)	Total VOCs May 2007 (ppb)	Total VOCs Oct 2006 (ppb)	Total VOCs Feb 2005 (ppb)	Total VOCs Oct 2004 (ppb)	Total VOCs Jul 2003 (ppb)	Total VOCs Aug 2002 (ppb)
DR-1	610	910	319	160	NS	21.7	63	55	75	132	87	73	82	43	29.38	673	166.5	154.5	250.1	355.5	442.5	60.3	392.28	260	724	864	530	2,043.5	1,106	573.4	8,000	NA	NA	NA
DR-2	218	215	199	187	291	259	162	224	231	207	302	256	293	19	229.9	305.3	206.1	240.93	267.75	152.3	213.52	255.2	198.24	223.79	206.6	284.3	154.4	288.1	350.1	549.2	2,003	NA	NA	NA
DR-3	154	62	45	76	83	55	181	210	83	89	123	62	73	42	116.96	24.9	74.3	67.7	25.3	30.1	38.1	79.7	125.96	167.34	75.4	123.2	171.7	387.5	183	152.5	1,467	NA	NA	NA
DR-4	95	63	94	110	71	147	156	148	96	64	68	79	37	90	122.6	ND	191.03	128.4	101.4	71.7	230.58	155.04	80.3	66.3	129.1	40.2	42.1	217.0	15.21	859.0	1,760	NA	NA	NA
G-1	105.6	59.7	80.3	ND	68	146	101	105	90	78	96.2	69.1	55.8	52.6	68.55	65.58	67.52	55.81	67.02	48.8	30.5	108.3	164	126.6	120.4	170.5	186	225.0	153.3	200.8	544	NA	NA	NA
G-2	ND	NS	NS	28	NS	48	34	37	52	14	68	81	50	132.2	75.3	41.9	29.8	65.6	47.2	51.8	6.02	8.37	56.2	231	28.3	39.1	80.92	59.3	174.92	283.4	385	NA	NA	NA
G-3	404	420	262	370	NS	NS	NS	NS	NS	82	NS	11	25	41.6	147.3	44.2	296.2	224.7	209.8	159.3	233.2	277.8	344	403	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NS: This well not included in this sampling event.
ND = Not Detected, results less than Method Detection Limit.
Impacted north property line wells: MW-5, MW-6, MW-7, MW-16, MW-17, MW-21
All compounds are measured in parts per billion (ppb).
VOC - Volatile Organic Compounds.
DUP - Duplicate Sample

Table 4 Percent Reductions in Total Groundwater VOCs
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

The Groundwater Treatment System was activated in May 2005

Monitoring Well	% Reduction 2002 to Sep 2016	% Reduction 2002 to Jun 2016	% Reduction 2002 to Nov 2015	% Reduction 2002 to Aug 2015	% Reduction 2002 to Jun 2015	% Reduction 2002 to Mar 2015	% Reduction 2002 to Nov 2014	% Reduction 2002 to Sep 2014	% Reduction 2002 to Jun 2014	% Reduction 2002 to Mar 2014	% Reduction 2002 to Dec 2013	% Reduction 2002 to Jul 2013	% Reduction 2002 to Apr 2013	% Reduction 2002 to Dec 2012	% Reduction 2002 to Jun 2012	% Reduction 2002 to Mar 2012	% Reduction 2002 to Sep 2011	% Reduction 2002 to Jun 2011	% Reduction 2002 to Mar 2011	% Reduction 2002 to Dec 2010	% Reduction 2002 to Sep 2010	% Reduction 2002 to Jun 2010	% Reduction 2002 to Jan 2010	% Reduction 2002 to Jul 2009	% Reduction 2002 to Feb 2009	% Reduction 2002 to Sep 2008	% Reduction 2002 to Jun 2008	% Reduction 2002 to Mar 2008	% Reduction 2002 to Nov 2005
MW-1†	-9.1%	24.5%	-99.2%	-91.4%	54.4%	44.0%	60.9%	45.3%	-28.9%	-28.9%	-126.6%	-8.1%	-19.5%	-87.5%	31.3%	-15.8%	42.4%	-71.6%	24.1%	26.6%	15.5%	-1.3%	15.8%	-44.2%	11.8%	-12.0%	8.2%	-90.5%	-46.9%
MW-2	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.6%	Not Sampled	99.6%	99.6%
MW-3	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.3%	99.3%
MW-4	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.00%	100.0%	100.0%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%
MW-5	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.3%	63.4%
MW-6	70.4%	75.4%	70.4%	76.4%	78.8%	80.0%	72.9%	72.9%	76.4%	76.8%	68.0%	75.6%	77.1%	75.6%	78.6%	78.9%	75.1%	80.5%	82.0%	79.9%	73.6%	76.4%	81.3%	77.1%	78.4%	72.2%	69.7%	74.1%	42.6%
MW-7	86.2%	81.6%	89.1%	71.1%	87.1%	100.0%	60.0%	57.8%	93.6%	100.0%	100.0%	96.0%	100.0%	100.0%	66.3%	93.2%	53.5%	84.2%	95.0%	87.1%	64.3%	74.6%	96.6%	52.7%	79.5%	22.7%	45.8%	56.3%	-1.3%
MW-8	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	92.9%	92.9%
MW-9	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	97.6%	97.6%
MW-10	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	96.2%	96.2%
MW-11	90.4%	88.2%	77.2%	86.4%	90.4%	89.2%	90.3%	91.9%	90.3%	84.7%	81.1%	89.0%	87.7%	83.0%	89.3%	86.7%	89.1%	84.5%	86.6%	87.3%	86.4%	83.5%	83.3%	86.5%	83.0%	90.6%	87.8%	78.0%	76.3%
MW-12	99.9%	99.9%	99.8%	99.6%	99.2%	99.1%	99.0%	98.4%	98.4%	98.3%	98.6%	98.8%	98.5%	98.9%	99.3%	98.8%	99.3%	98.7%	99.3%	99.3%	99.2%	98.7%	98.1%	99.4%	97.8%	99.5%	98.7%	98.7%	62.2%
MW-13	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	100.0%	Not Sampled	100.0%	100.0%
MW-14	68.3%	81.9%	74.3%	69.5%	83.5%	68.6%	78.4%	78.4%	82.9%	76.8%	70.2%	84.4%	77.5%	85.1%	87.4%	75.7%	75.5%	66.7%	89.9%	92.3%	87.6%	79.3%	85.9%	87.1%	88.9%	94.3%	87.9%	90.7%	55.6%
MW-15	96.7%	98.5%	98.6%	98.1%	98.9%	98.7%	95.6%	95.8%	99.2%	100.0%	99.1%	99.0%	100.0%	98.2%	96.4%	99.1%	95.6%	97.8%	99.1%	97.7%	91.5%	96.9%	98.3%	91.1%	99.3%	84.5%	89.4%	97.5%	62.9%
MW-16*	60.9%	27.7%	39.5%	74.6%	86.7%	100.0%	89.8%	81.6%	59.0%	53.1%	60.9%	77.9%	36.8%	52.6%	88.5%	67.9%	84.0%	39.2%	23.9%	81.0%	93.3%	99.7%	94.2%	42.1%	41.6%	57.4%	43.9%	77.5%	-72.1%
MW-17*	54.0%	58.0%	54.5%	59.4%	Not Sampled	66.8%	61.0%	59.4%	66.5%	83.5%	58.5%	50.6%	97.4%	46.9%	53.0%	67.9%	44.6%	72.2%	96.7%	94.1%	61.4%	71.3%	97.7%	71.8%	99.5%	10.1%	26.0%	24.7%	-24.2%
MW-18:*	93.4%	98.2%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	Not Sampled	100.0%	100.0%	100.0%	89.6%	98.5%	81.9%	91.3%	96.0%	88.7%	74.4%	82.7%	96.0%	-23.3%	91.8%	-50.0%	27.6%	64.8%	-135.8%
MW-19 R*	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	73.3%	99.0%	99.0%	57.3%	99.0%	-36.7%	-5.7%	99.0%	-102.0%
MW-20**	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%
MW-21**	-50.0%	66.5%	23.1%	23.1%	61.5%	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	67.5%	Not Sampled	96.7%	-13.7%
* Well installed 2003																													
** Well Installed 2004																													
Site-Wide reduction:	68.7%	78.6%	66.2%	69.1%	87.7%	88.2%	85.2%	83.2%	79.8%	80.3%	67.5%	81.8%	81.2%	71.3%	82.9%	80.7%	79.7%	72.2%	83.7%	86.9%	78.3%	81.4%	87.9%	61.1%	82.1%	56.0%	59.7%	78.5%	35.7%
Impacted Groundwater Plume Area Only:	69.6%	76.0%	58.1%	58.6%	84.6%	80.8%	77.3%	75.0%	72.3%	73.9%	82.2%	73.2%	77.3%	62.5%	75.2%	73.1%	71.9%	64.1%	84.1%	83.0%	72.5%	72.4%	82.1%	65.2%	79.8%	57.7%	64.2%	53.7%	28.4%

Plume Area = MW-1, MW-11, MW-12, MW-14, MW-15, MW-7, MW-17, MW-6
% reduction = percent reduction in total Volatile Organic Compounds (VOCs) since groundwater monitoring was initiated
†Negative values indicate an increase in total VOCs since monitoring commenced in 2002. The percent increase in total groundwater VOCs is shown below for MW-1.

Recovery Well	% Reduction 2002 to Sep 2016	% Reduction 2002 to Jun 2016	% Reduction 2002 to Nov 2015	% Reduction 2002 to Aug 2015	% Reduction 2002 to Jun 2015	% Reduction 2002 to Mar 2015	% Reduction 2002 to Nov 2014	% Reduction 2002 to Sep 2014	% Reduction 2002 to Jun 2014	% Reduction 2002 to Mar 2014	% Reduction 2002 to Dec 2013	% Reduction 2002 to Jul 2013	% Reduction 2002 to Apr 2013	% Reduction 2002 to Dec 2012	% Reduction 2002 to Jun 2012	% Reduction 2002 to Mar 2012	% Reduction 2002 to Sep 2011	% Reduction 2002 to Jun 2011	% Reduction 2002 to Mar 2011	% Reduction 2002 to Dec 2010	% Reduction 2002 to Sep 2010	% Reduction 2002 to Jun 2010	% Reduction 2002 to Jan 2010	% Reduction 2002 to Jul 2009	% Reduction 2002 to Feb 2009	% Reduction 2002 to Sep 2008	% Reduction 2002 to Jun 2008	% Reduction 2002 to Mar 2008
DR-1	-6.4%	-58.7%	44.4%	72.1%	Not Sampled	96.2%	89.0%	90.4%	86.9%	77.0%	84.8%	99.1%	99.0%	99.5%	99.8%	91.6%	97.9%	98.1%	96.9%	95.6%	94.5%	99.2%	98.0%	95.1%	96.8%	91.0%	89.2%	93.4%
DR-2	60.3%	60.9%	63.8%	66.0%	47.0%	52.8%	70.5%	59.2%	58.0%	62.3%	45.0%	87.2%	85.4%	99.1%	88.5%	83.9%	89.7%	88.0%	86.6%	92.4%	89.3%	87.3%	90.6%	90.1%	88.8%	89.7%	85.8%	92.3%
DR-3	-1.0%	59.3%	70.5%	50.2%	45.6%	63.9%	-18.7%	-37.7%	45.6%	41.6%	19.3%	95.8%	95.1%	97.2%	92.1%	98.3%	95.0%	95.4%	98.3%	98.0%	97.4%	94.6%	91.6%	91.5%	88.7%	94.9%	91.7%	88.4%
DR-4	88.9%	92.7%	89.1%	87.2%	91.7%	82.9%	81.8%	82.8%	88.8%	92.5%	90.8%	95.5%	97.9%	94.9%	93.1%	100.0%	89.2%	92.7%	94.3%	95.9%	86.9%	91.2%	95.4%	95.5%	96.2%	92.7%	97.7%	97.6%
G-1	47.4%	92.7%	60.0%	100.0%	66.1%	27.3%	49.8%	47.7%	55.0%	61.3%	65.6%	87.3%	89.8%	90.3%	87.4%	88.0%	87.6%	89.8%	87.7%	91.0%	94.4%	80.1%	76.0%	69.9%	76.7%	77.9%	68.7%	65.8%
G-2	100.0%	Not Sampled	Not Sampled	90.1%	Not Sampled	83.1%	88.0%	86.9%	81.7%	95.1%	71.4%	79.0%	87.0%	65.7%	80.4%	89.1%	92.3%	83.0%	87.7%	86.5%	98.4%	97.8%	98.5%	85.4%	40.0%	92.6%	89.8%	79.0%
G-3	-0.2%	-4.2%	35.0%	8.2%	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	79.7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Overall Reduction	41.3%	40.4%	60.4%	67.7%	62.6%	67.7%	60.1%	54.9%	69.3%	72.8%	62.8%	90.7%	92.3%	91.1%	90.2%	91.8%	91.9%	91.1%	91.9%	93.2%	93.5%	91.7%	91.7%	87.9%	81.2%	89.8%	87.2%	86.1%

*Sampling of recovery wells initiated in 2005

Monitoring Well	% Increase 2002 to Sep 2016	% Increase 2002 to Jun 2016	% Increase 2002 to Nov 2015	% Increase 2002 to Aug 2015	% Increase 2002 to Jun 2015	% Increase 2002 to Mar 2015	% Increase 2002 to Nov 2014	% Increase 2002 to Sep 2014	% Increase 2002 to Jun 2014	% Increase 2002 to Mar 2014	% Increase 2002 to Dec 2013	% Increase 2002 to Jul 2013	% Increase 2002 to Apr 2013	% Increase 2002 to Dec 2012		% Increase 2002 to Mar 2012		% Increase 2002 to Jun 2011				% Increase 2002 to Jun 2010		% Increase 2002 to Jul 2009		% Increase 2002 to Sep 2008		% Increase 2002 to Mar 2008	% Increase 2002 to Nov 2005
MW-1†	8.4%	NA	49.8%	47.8%	NA	NA	NA	NA	22.4%	22.4%	55.9%	7.5%	16.3%	46.7%	NA	13.6%	NA	41.7%	NA	NA	NA	100.0%	NA	30.6%	NA	100.0%	NA	47.5%	31.9%
DR-1†	6.0%	37.0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DR-3†	1.0%	NA	NA	NA	NA	NA	15.7%	27.4%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G-3	0.2%	4.0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

†Negative values indicate an increase in total VOCs since monitoring commenced in 2002. The percent increase in total groundwater VOCs is shown above for MW-1 and DR-3.

FIGURES

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Gowanda, NY

Bergmann associates
architects // engineers // planners

Figure 1

September 2016 Groundwater Contour Map

MW-21
MW-18
MW-19R
766
767
MW-16
MW-7
G-3
MW-6
MW-5
MW-20
MW-17
G-2
768
MW-15
G-1
DR-4
Thatcher Brook
769
768
MW-14
DR-3
DR-2
MW-12
MW-13
MW-4
770
771
MW-8
MW-11
DR-1
MW-3
771
MW-1
MW-2
MW-9
MW-10

0 30 60 90 120
Feet
N

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DASNY

Gowanda Day Habilitation Center

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Gowanda, NY

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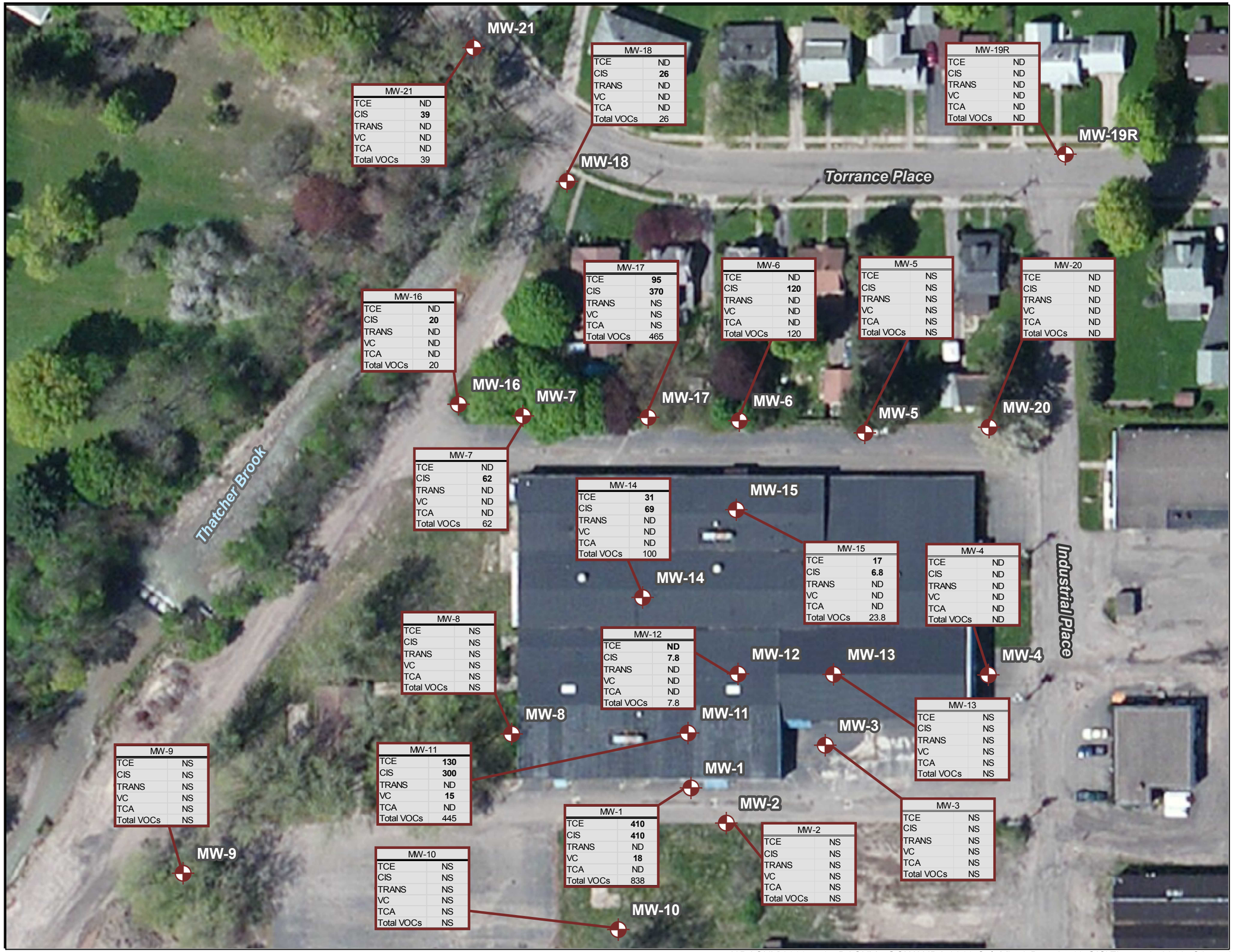
Figure 2

September 2016 Distribution of Groundwater Analytical Results: Monitoring Wells



MW-21	
TCE	ND
CIS	**39**
TRANS	ND
VC	ND
TCA	ND
Total VOCs	39

MW-18	
TCE	ND
CIS	**26**
TRANS	ND
VC	ND
TCA	ND
Total VOCs	26

MW-19R	
TCE	ND
CIS	ND
TRANS	ND
VC	ND
TCA	ND
Total VOCs	ND

MW-16	
TCE	ND
CIS	**20**
TRANS	ND
VC	ND
TCA	ND
Total VOCs	20

MW-17	
TCE	**95**
CIS	**370**
TRANS	NS
VC	NS
TCA	NS
Total VOCs	465

MW-6	
TCE	ND
CIS	**120**
TRANS	ND
VC	ND
TCA	ND
Total VOCs	120

MW-5	
TCE	NS
CIS	NS
TRANS	NS
VC	NS
TCA	NS
Total VOCs	NS

MW-20	
TCE	ND
CIS	ND
TRANS	ND
VC	ND
TCA	ND
Total VOCs	ND

MW-7	
TCE	ND
CIS	**62**
TRANS	ND
VC	ND
TCA	ND
Total VOCs	62

MW-14	
TCE	**31**
CIS	**69**
TRANS	ND
VC	ND
TCA	ND
Total VOCs	100

MW-15	
TCE	**17**
CIS	**6.8**
TRANS	ND
VC	ND
TCA	ND
Total VOCs	23.8

MW-4	
TCE	ND
CIS	ND
TRANS	ND
VC	ND
TCA	ND
Total VOCs	ND

MW-8	
TCE	NS
CIS	NS
TRANS	NS
VC	NS
TCA	NS
Total VOCs	NS

MW-12	
TCE	**ND**
CIS	**7.8**
TRANS	ND
VC	ND
TCA	ND
Total VOCs	7.8

MW-13	
TCE	NS
CIS	NS
TRANS	NS
VC	NS
TCA	NS
Total VOCs	NS

MW-9	
TCE	NS
CIS	NS
TRANS	NS
VC	NS
TCA	NS
Total VOCs	NS

MW-11	
TCE	**130**
CIS	**300**
TRANS	ND
VC	**15**
TCA	ND
Total VOCs	445

MW-1	
TCE	**410**
CIS	**410**
TRANS	ND
VC	**18**
TCA	ND
Total VOCs	838

MW-2	
TCE	NS
CIS	NS
TRANS	NS
VC	NS
TCA	NS
Total VOCs	NS

MW-3	
TCE	NS
CIS	NS
TRANS	NS
VC	NS
TCA	NS
Total VOCs	NS

MW-10	
TCE	NS
CIS	NS
TRANS	NS
VC	NS
TCA	NS
Total VOCs	NS

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Figure 3

September 2016 Distribution of Groundwater Analytical Results: Recovery Wells

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CHARTS

Chart 1: Groundwater Recovery Wells Summary

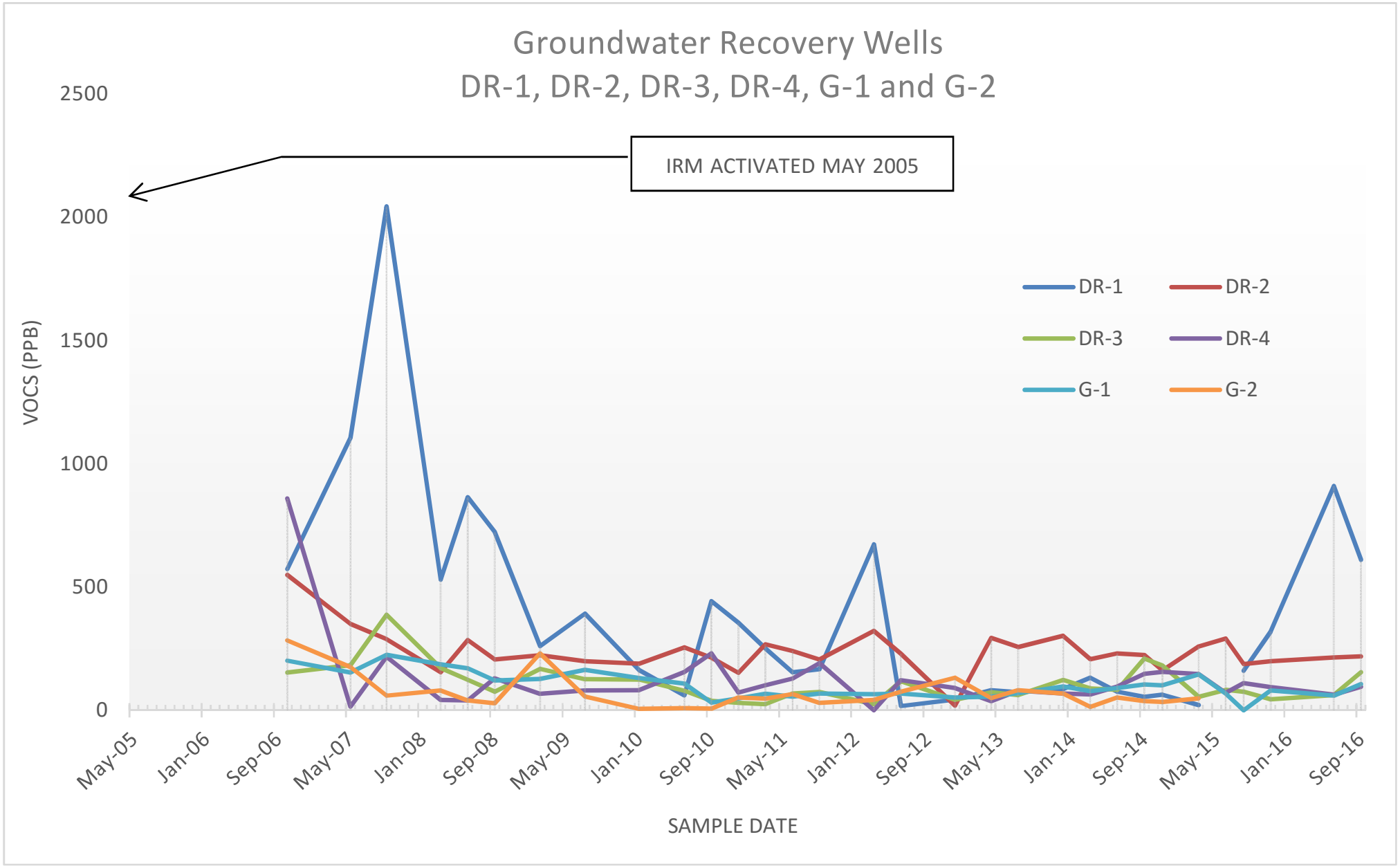


Chart 2: MW-1, DR-1 and MW-11 Groundwater Volatile Organic Compound Concentrations

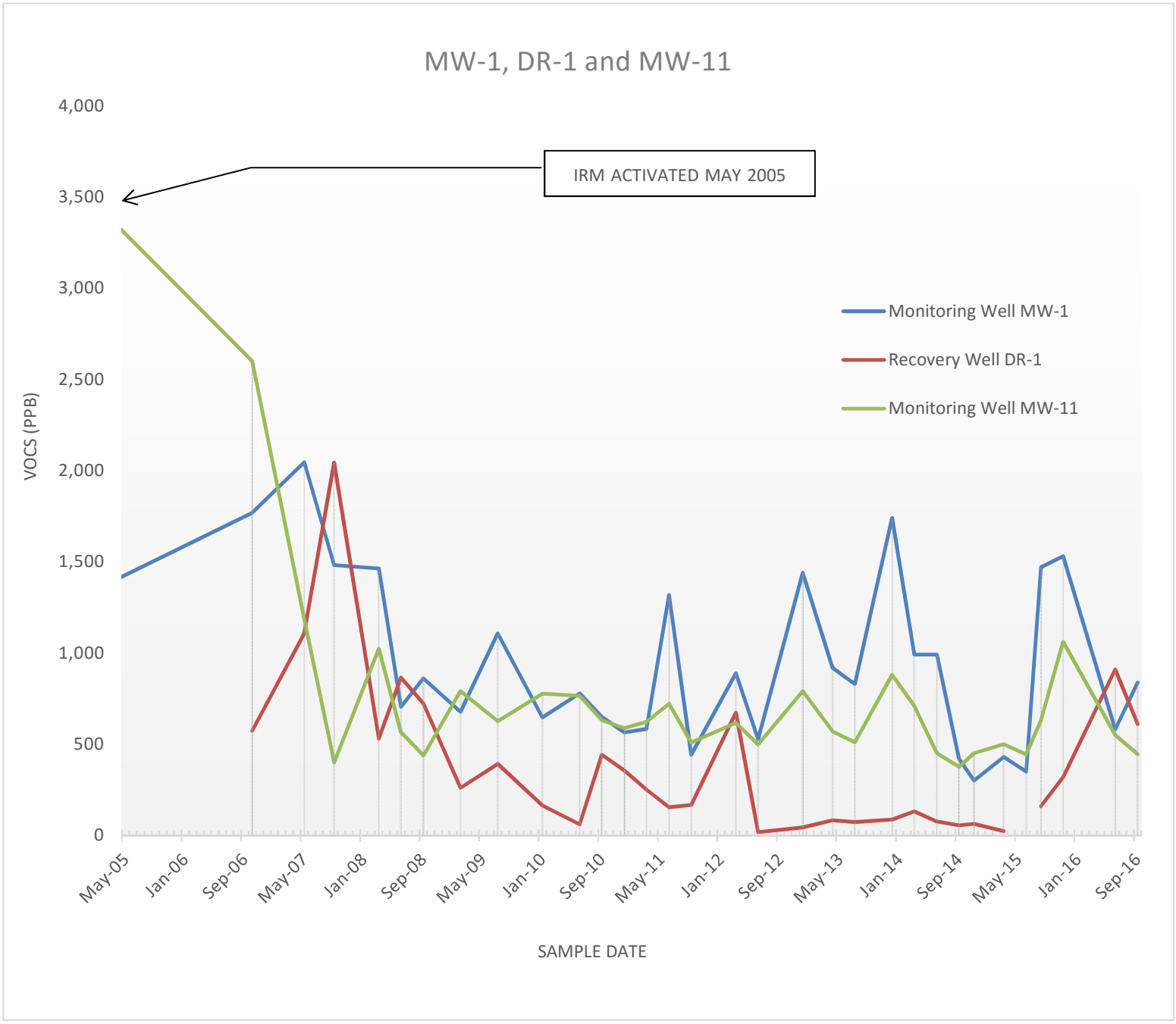


Chart 3: MW-12 and DR-2 Groundwater Volatile Organic Compound Concentrations

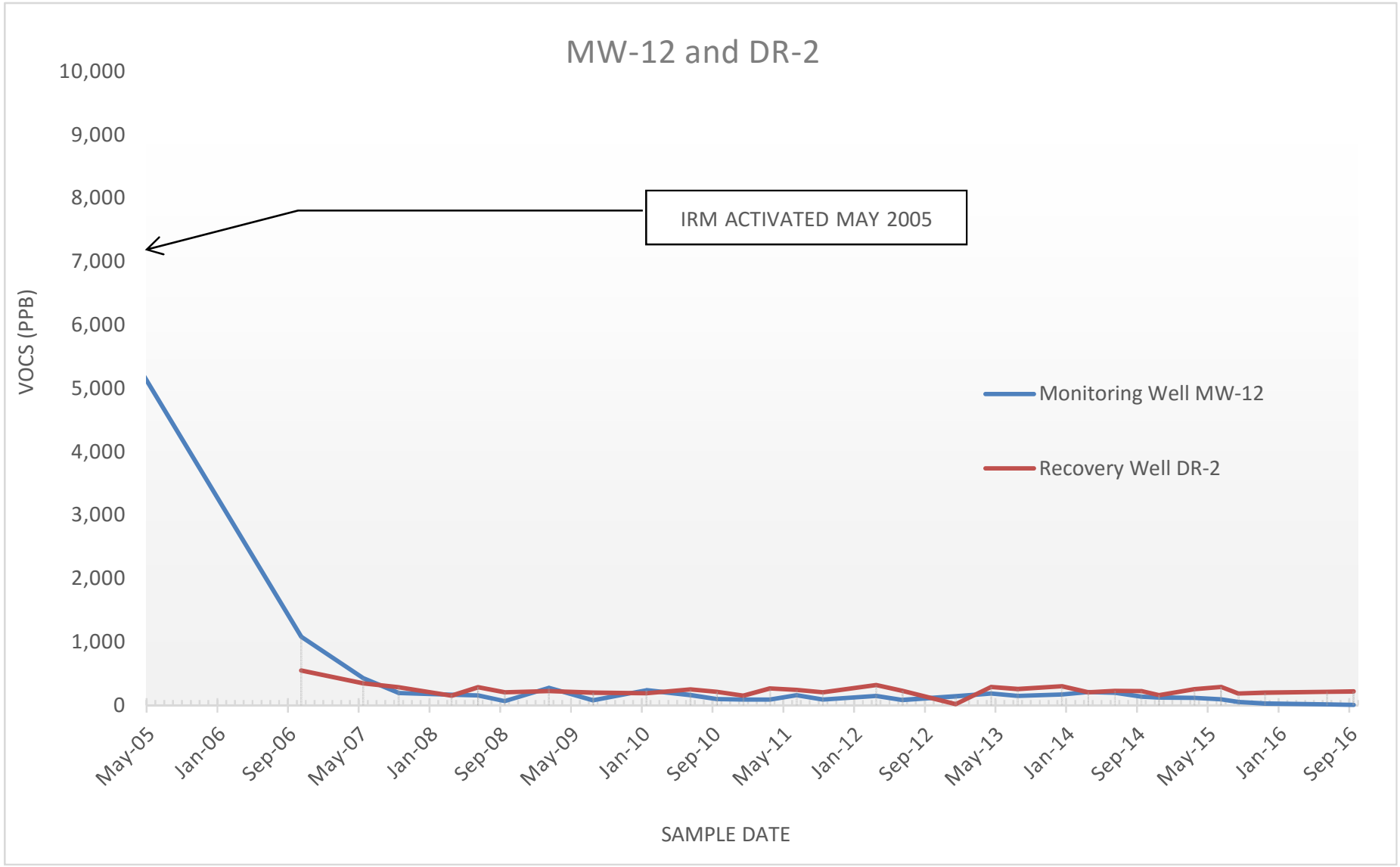


Chart 4: MW-14 and DR-3 Groundwater Volatile Organic Compound Concentrations

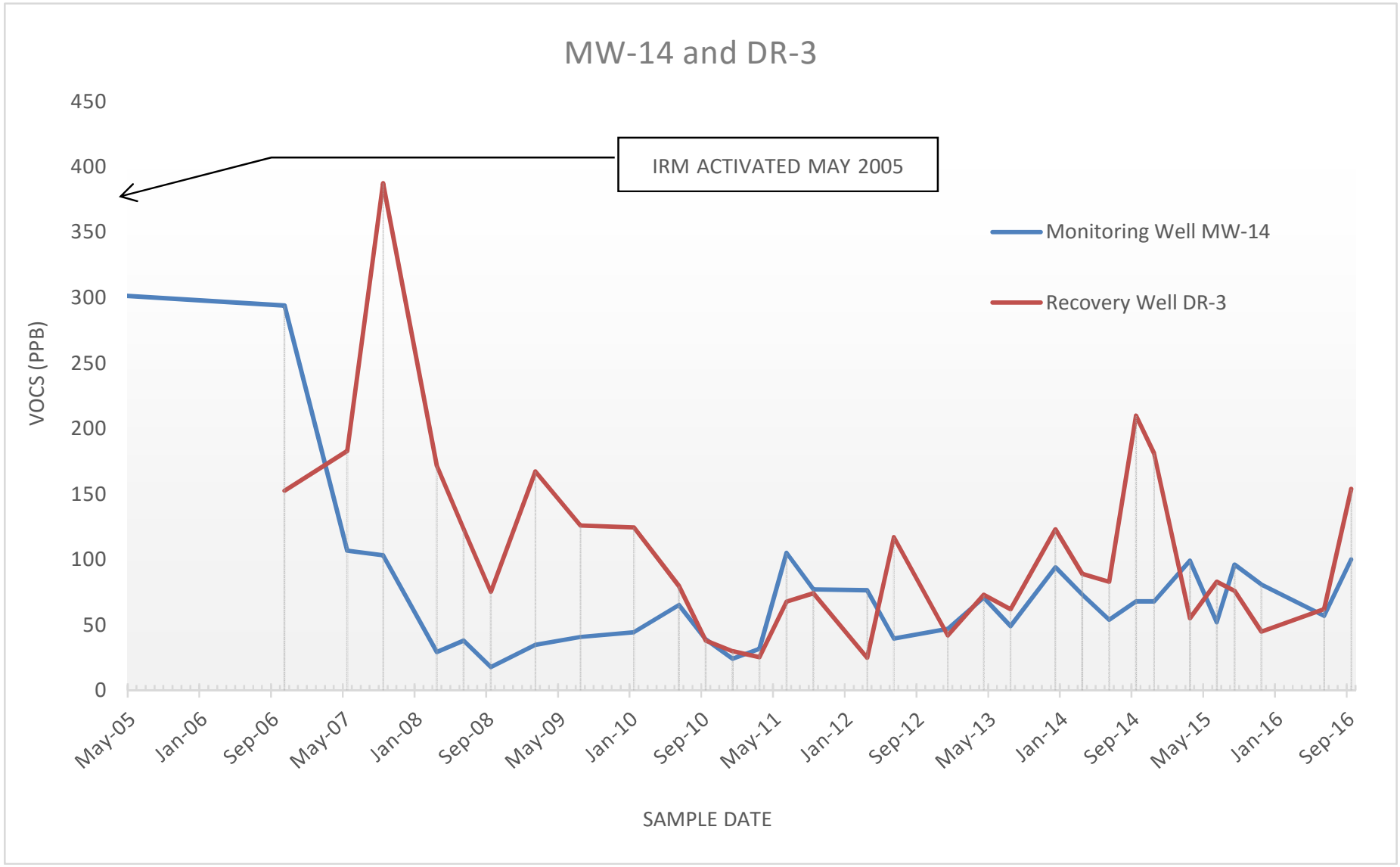


Chart 5: MW-15 and DR-4 Groundwater Volatile Organic Compound Concentrations

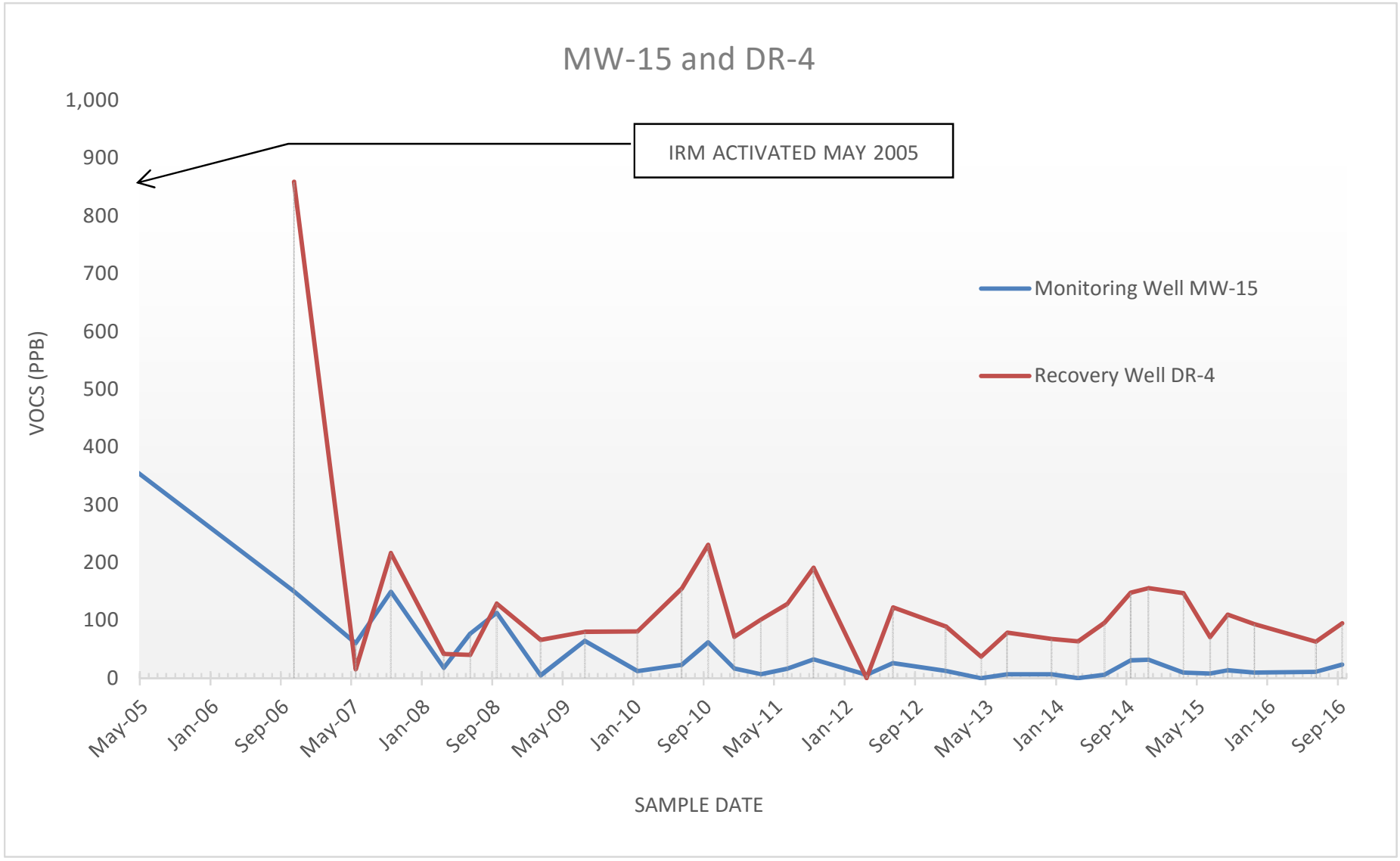


Chart 6: MW-17 and G-1 Groundwater Volatile Organic Compound Concentrations

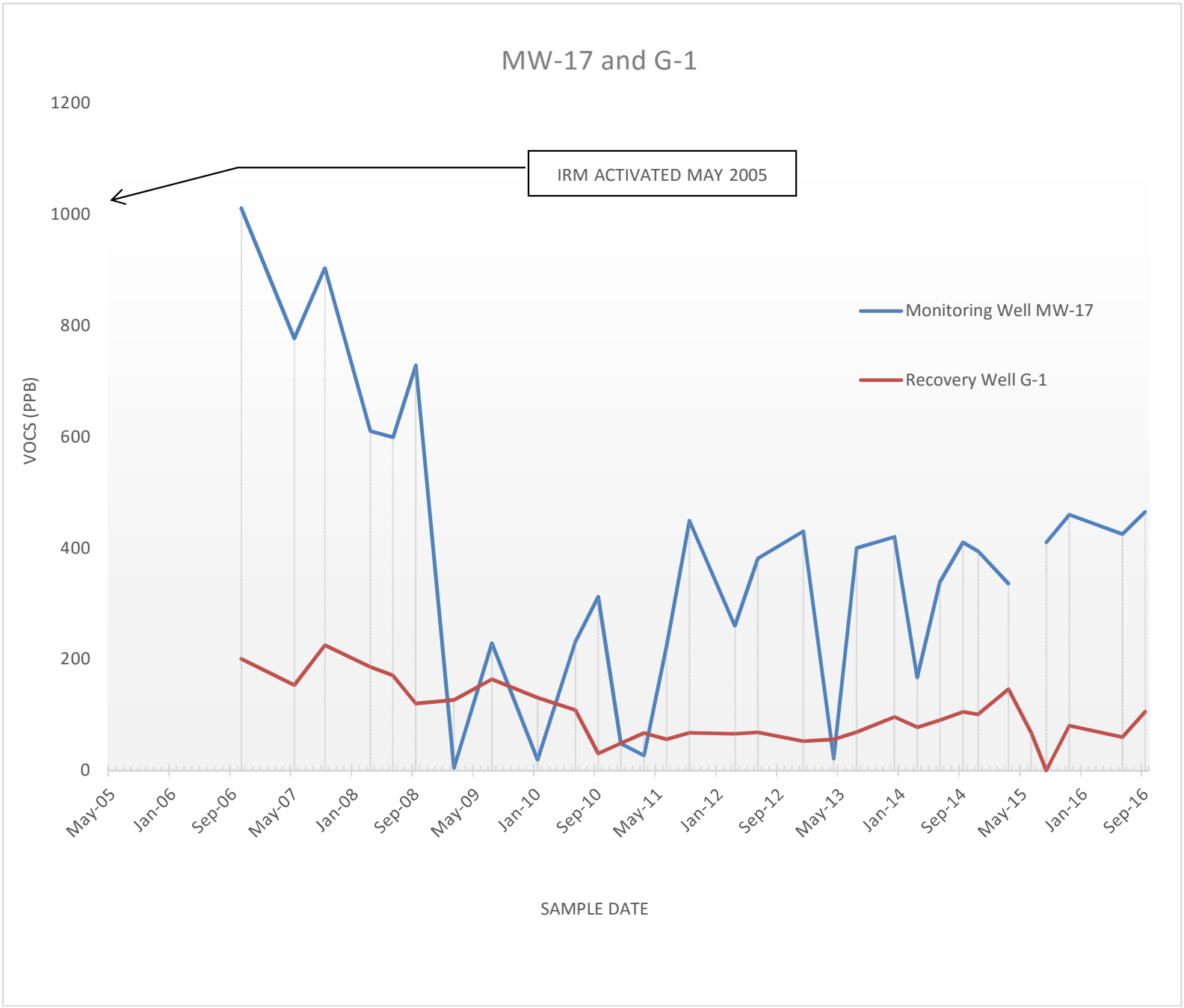


Chart 7: MW-7 and G-2 Groundwater Volatile Organic Compound Concentrations

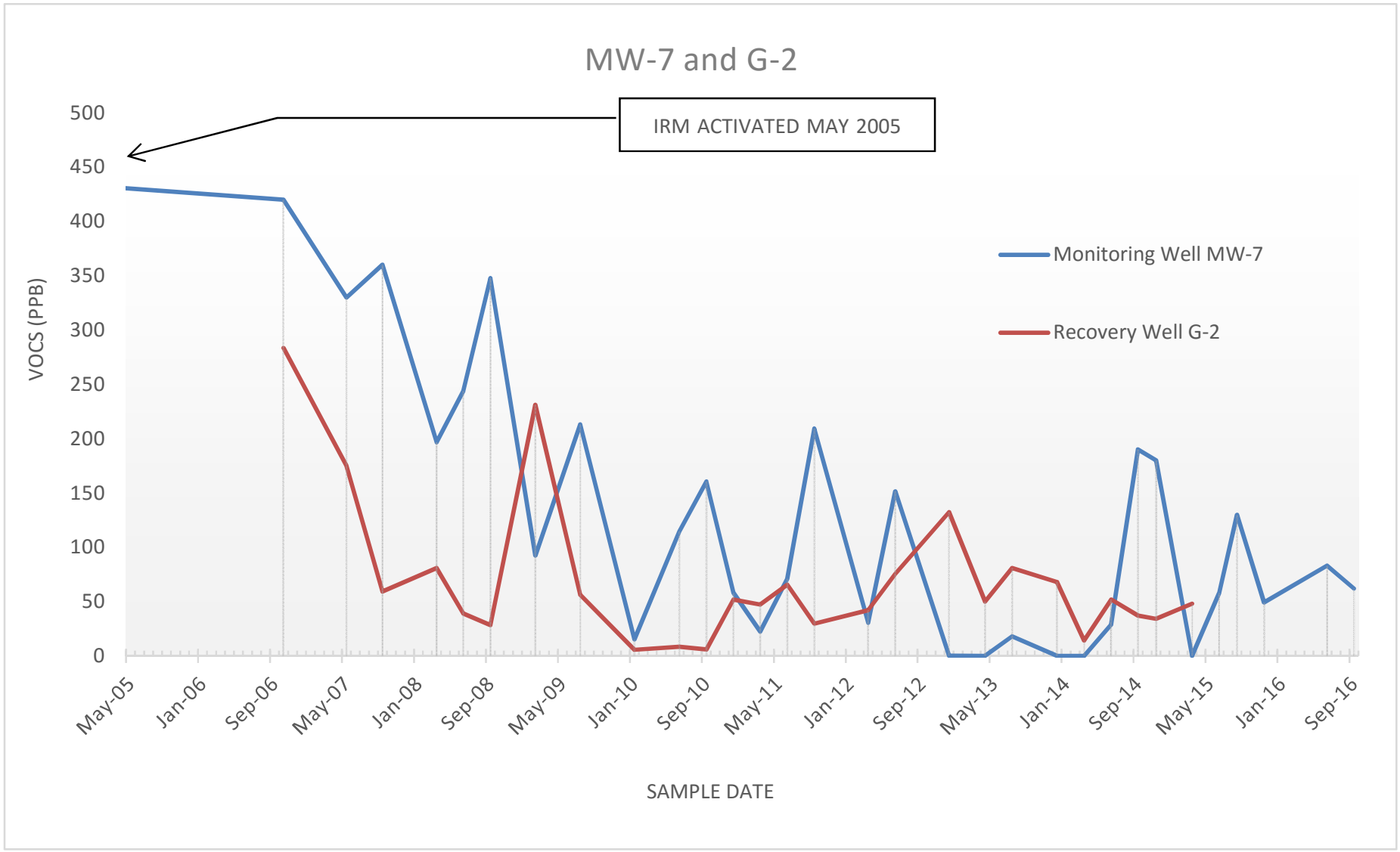
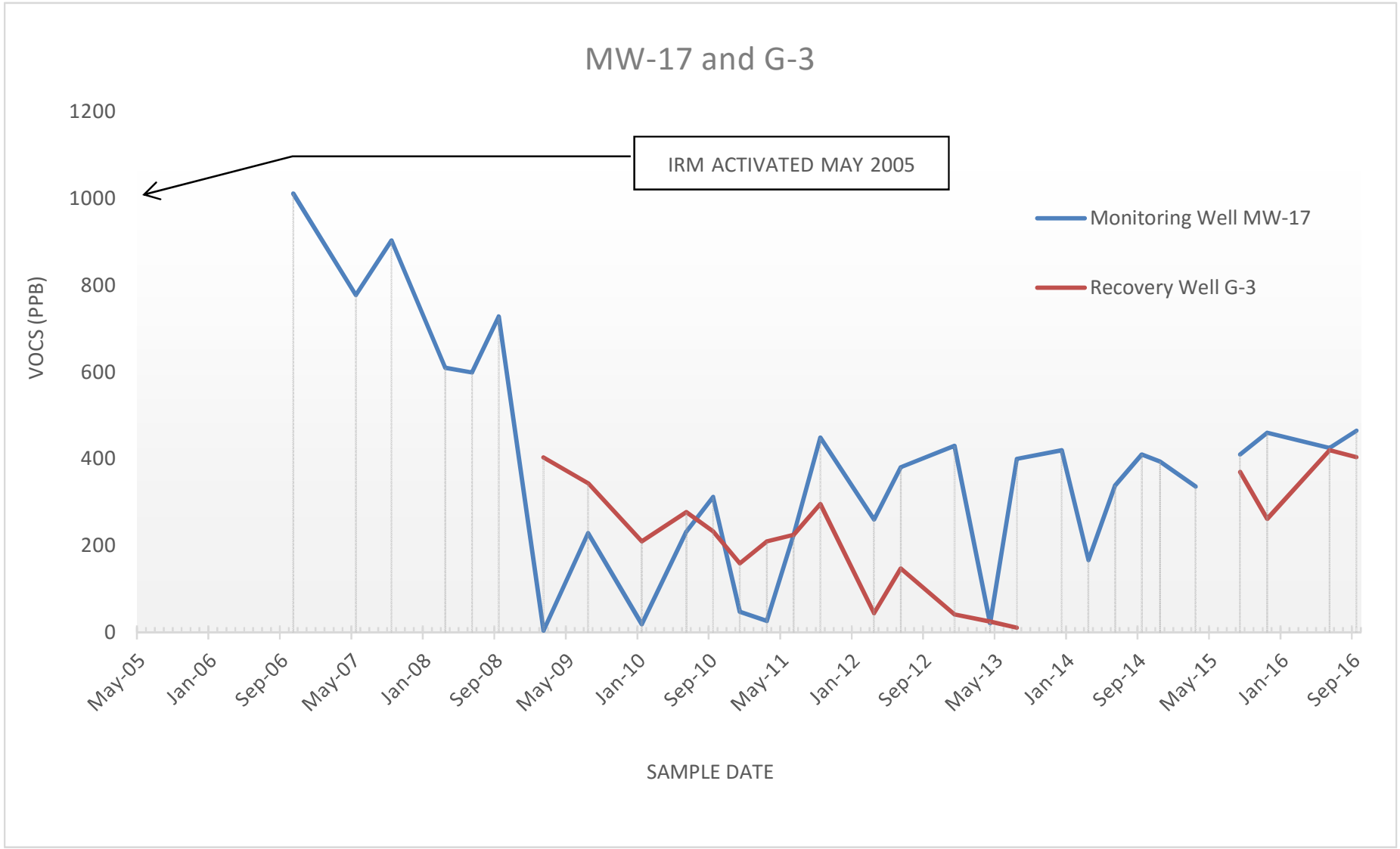


Chart 8: MW-17 and G-3 Groundwater Volatile Organic Compound Concentrations



APPENDIX A
LABORATORY ANALYTICAL RESULTS REPORT
SEPTEMBER 2016 SAMPLING EVENT

September 26, 2016 Service Request No:R1609806

Ms. Megan Borruso
Bergmann Associates, Incorporated
200 First Federal Plaza
28 East Main St.
Rochester, NY 14614

Laboratory Results for: Gowanda

Dear Ms.Borruso,

Enclosed are the results of the sample(s) submitted to our laboratory September 15, 2016
For your reference, these analyses have been assigned our service request number **R1609806.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Brady Kalkman

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Bergmann Associates, Incorporated
Project: Gowanda/6974.85
Sample Matrix: Water

Service Request:R1609806
Date Received:9/15/16

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt

Twenty four water samples were received for analysis at ALS Environmental on 09/15/2016. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Volatile Organic Analyses:

Method 8260, R1609806-001: Sample(s) required dilution due to the foaming nature of the matrix. The reporting limits are adjusted to reflect the dilution.

Approved by _____ Date 9/26/2016

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-15	Lab ID: R1609806-004					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	6.8		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	17		0.22	5.0	ug/L	8260C

CLIENT ID: MW-14	Lab ID: R1609806-005					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	69		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	31		0.22	5.0	ug/L	8260C

CLIENT ID: MW-18	Lab ID: R1609806-006					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	26		0.30	5.0	ug/L	8260C

CLIENT ID: MW-21	Lab ID: R1609806-007					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	39		0.30	5.0	ug/L	8260C

CLIENT ID: MW-16	Lab ID: R1609806-008					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	20		0.30	5.0	ug/L	8260C

CLIENT ID: MW-7	Lab ID: R1609806-009					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	62		0.30	5.0	ug/L	8260C

CLIENT ID: MW-6	Lab ID: R1609806-010					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	120		0.30	5.0	ug/L	8260C

CLIENT ID: MW-12	Lab ID: R1609806-011					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	7.8		0.30	5.0	ug/L	8260C

CLIENT ID: MW-11	Lab ID: R1609806-012					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	300		0.75	13	ug/L	8260C
Trichloroethene (TCE)	130		0.55	13	ug/L	8260C
Vinyl Chloride	15		0.80	13	ug/L	8260C

CLIENT ID: MW-1	Lab ID: R1609806-013					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	410		0.75	13	ug/L	8260C
Trichloroethene (TCE)	410		0.55	13	ug/L	8260C
Vinyl Chloride	18		0.80	13	ug/L	8260C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-X	Lab ID: R1609806-014					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	430		0.75	13	ug/L	8260C
Trichloroethene (TCE)	430		0.55	13	ug/L	8260C
Vinyl Chloride	19		0.80	13	ug/L	8260C

CLIENT ID: MW-17	Lab ID: R1609806-015					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	370		0.60	10	ug/L	8260C
Trichloroethene (TCE)	95		0.44	10	ug/L	8260C

CLIENT ID: DR-1	Lab ID: R1609806-016					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	110		1.5	25	ug/L	8260C
Trichloroethene (TCE)	500		1.1	25	ug/L	8260C

CLIENT ID: DR-2	Lab ID: R1609806-017					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	180		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	38		0.22	5.0	ug/L	8260C

CLIENT ID: DR-3	Lab ID: R1609806-018					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	120		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	34		0.22	5.0	ug/L	8260C

CLIENT ID: DR-4	Lab ID: R1609806-019					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	61		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	34		0.22	5.0	ug/L	8260C

CLIENT ID: G-1	Lab ID: R1609806-020					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	100		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	5.6		0.22	5.0	ug/L	8260C

CLIENT ID: G-3	Lab ID: R1609806-022					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	320		0.60	10	ug/L	8260C
Trichloroethene (TCE)	84		0.44	10	ug/L	8260C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Bergmann Associates, Incorporated **Service Request:**R1609806
Project: Gowanda/6974.85

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1609806-001	MW-4	9/14/2016	1115
R1609806-002	MW-20	9/14/2016	1140
R1609806-003	MW-19R	9/14/2016	1210
R1609806-004	MW-15	9/14/2016	1240
R1609806-005	MW-14	9/14/2016	1306
R1609806-006	MW-18	9/14/2016	1436
R1609806-007	MW-21	9/14/2016	1502
R1609806-008	MW-16	9/14/2016	1530
R1609806-009	MW-7	9/14/2016	1610
R1609806-010	MW-6	9/14/2016	1640
R1609806-011	MW-12	9/14/2016	1720
R1609806-012	MW-11	9/14/2016	1750
R1609806-013	MW-1	9/15/2016	1015
R1609806-014	MW-X	9/15/2016	1030
R1609806-015	MW-17	9/15/2016	1106
R1609806-016	DR-1	9/15/2016	1121
R1609806-017	DR-2	9/15/2016	1143
R1609806-018	DR-3	9/15/2016	1208
R1609806-019	DR-4	9/15/2016	1218
R1609806-020	G-1	9/15/2016	1317
R1609806-021	G-2	9/15/2016	1327
R1609806-022	G-3	9/15/2016	1352
R1609806-023	TRIP BLANK	9/15/2016	
R1609806-024	EQUIPMENT BLANK	9/15/2016	1200

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

40126

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 3

Project Name	Project Number
Gowanda	6974.85
Project Manager	**Report CC**
Megan Borruso	
Company/Address	
Bergmann Associates	
28 E. Main St / 200 First Federal Plaza	
Rochester NY 14614	
Phone #	**Email**
	mborruso@bergmannpc.com
Sampler's Signature	**Sampler's Printed Name**
Megan E. Borruso	Megan E. Borruso

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1

NUMBER OF CONTAINERS

- GC/MS VOAs ○ 8260 ○ 624 ○ CLP SITE SPECIFIC
- GC/MS SVOAs ○ 8270 ○ 625
- GC VOAs ○ 8021 ○ 601/602
- PESTICIDES ○ 8081 ○ 608
- PCBs ○ 8082 ○ 608
- METALS, TOTAL (List in comments below)
- METALS, DISSOLVED (List in comments below)

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX																	
MW-4		09/14/2016	1115	Aq GW	3	X															
MW-20		09/14/2016	1140	Aq GW	3	X															
MW-19R		09/14/2016	1210	Aq GW	3	X															
MW-15		09/14/2016	1240	Aq GW	3	X															
MW-14		09/14/2016	1306	Aq GW	3	X															
MW-18		09/14/2016	1436	Aq GW	3	X															
MW-21		09/14/2016	1502	Aq GW	3	X															
MW-16		09/14/2016	1530	Aq GW	3	X															
MW-7		09/14/2016	1610	Aq GW	3	X															
MW-6		09/14/2016	1640	Aq GW	3	X															
MW-12		09/14/2016	1720	Aq GW	3	X															

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
STANDARD TAT
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
NYSDEC EQuIS
Edata X Yes _____ No

INVOICE INFORMATION
PO # 6974.75
BILL TO: Bergmann

STATE WHERE SAMPLES WERE COLLECTED New York

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Megan E Borruso					
Signature: Megan E. Borruso	Signature: David Wirt	Signature	Signature	Signature	
Printed Name: Bergmann	Printed Name: ALS	Printed Name	Printed Name	Printed Name	
Firm: 09/15/2016 1630	Firm: 9/15/16 / 1635	Firm	Firm	Firm	
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	

R1609806 5
Bergmann Associates, Incorporated
Gowanda

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

40127

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Project Name: Gowanda	Project Number: 6974.85
Project Manager: Megan Borruso	Report CC:
Company/Address: Bergmann Associates 28 E. Main St / 200 First Federal Plaza Rochester, NY 14614	
Phone #	Email: mborruso@bergmannpc.com
Sampler's Signature: Megan E. Borruso	Sampler's Printed Name: Megan E. Borruso

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	SITE SPECIFIC	REMARKS/ ALTERNATE DESCRIPTION
MW-11		09/14/2016	1750	Aq GW	3	X								
MW-1		09/15/2016	1015	Aq GW	3	X								
MW-X		09/15/2016	1030	Aq GW	3	X								
MW-17		09/15/2016	1106	Aq GW	3	X								
DR-1		09/15/2016	1121	Aq GW	3	X								
DR-2		09/15/2016	1143	Aq GW	3	X								
DR-3		09/15/2016	1208	Aq GW	3	X								
DR-4		09/15/2016	1218	Aq GW	3	X								
G-1		09/15/2016	1317	Aq GW	3	X								
G-2		09/15/2016	1327	Aq GW	3	X								
G-3		09/15/2016	1352	Aq GW	3	X								

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
STANDARD TAT
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
NYSDEC EQUIS
Edata X Yes _____ No

INVOICE INFORMATION
PO # 6974.55
BILL TO: Bergmann

STATE WHERE SAMPLES WERE COLLECTED New York

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Megan E. Borruso	Signature: Daniel Mac	Signature	Signature	Signature	Signature
Printed Name: Bergmann	Printed Name: ALS	Printed Name	Printed Name	Printed Name	
Firm: 09/15/2016 1630	Firm: 9/15/16/1630	Firm	Firm	Firm	
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	

R1609806 5
Bergmann Associates, Incorporated
Gowanda

Distribution: White - Lab Copy; Yellow - Return to Originator

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

40128

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Project Name	Project Number
Gowanda	6974.85
Project Manager	**Report CC**
Megan Borruso	
Company Address	
Bergmann Associates	
28 E. Main St / 800 First Federal Plaza	
Rochester, NY 14614	
Phone #	**Email**
	mborruso@bergmannpc.com
Sampler's Signature	**Sampler's Printed Name**
Megan E. Borruso	Megan E. Borruso

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	TCLP Metals VOA SVO	Site Specific	REMARKS/ ALTERNATE DESCRIPTION
TRIP BLANK		—	—	Aq		3	X									
EQUIPMENT BLANK		09/15/2016	1200	Aq		3	X									
CARBON-1		09/15/2016	1500	SOLID		1								X		

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
STANDARD TAT
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
KLYSDEC ELLIS
Edata X Yes _____ No

INVOICE INFORMATION
PO # 6974.85
BILL TO: Bergmann

STATE WHERE SAMPLES WERE COLLECTED New York

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Megan E. Borruso					
Signature: Megan E. Borruso	Signature: Daniel Wirc	Signature	Signature	Signature	Signature
Printed Name: Bergmann	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: 09/15/2016 1630	Firm: 9/15/16 / 1630	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservation Check Form

R1609806 5
Bergmann Associates, Incorporated
Gowanda

Project/Client Bergmann Folder Number _____.

Cooler received on 9/15/16 by: SM COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y N	5a	**Perchlorate** samples have required headspace?	Y N NA
2	**Custody papers** properly completed (ink, signed)?	Y N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N NA
3	Did all bottles arrive in good **condition** (unbroken)?	Y N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: Wet Ice Dry Ice **Gel packs** present?	Y N	7	Soil VOA received as: Bulk Encore 5035set	NA

8. Temperature Readings Date: 9/15/16 Time: 1734 ID: IR#5 IR#6 From: Temp Blank Sample Bottle

Observed Temp (°C)	6.0	4.4					
Correction Factor (°C)	±0.0	+0.5					
Corrected Temp (°C)	6.0	4.9					
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-007 by SM on 9/15/16 at 1734
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown: Date: 9/16/16 Time: 1210 by: _____

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO
5. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**	4115022					

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 6-145-002
Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% (25% for CLP) difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Bergmann Associates, Incorporated **Service Request:** R1609806
Project: Gowanda/6974.85

Sample Name: MW-4 **Date Collected:** 09/14/16
Lab Code: R1609806-001 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-20 **Date Collected:** 09/14/16
Lab Code: R1609806-002 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-19R **Date Collected:** 09/14/16
Lab Code: R1609806-003 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-15 **Date Collected:** 09/14/16
Lab Code: R1609806-004 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: MW-14 **Date Collected:** 09/14/16
Lab Code: R1609806-005 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85		

Sample Name:	MW-18	**Date Collected:**	09/14/16
Lab Code:	R1609806-006	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-21	**Date Collected:**	09/14/16
Lab Code:	R1609806-007	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-16	**Date Collected:**	09/14/16
Lab Code:	R1609806-008	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-7	**Date Collected:**	09/14/16
Lab Code:	R1609806-009	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-6	**Date Collected:**	09/14/16
Lab Code:	R1609806-010	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85		

Sample Name:	MW-12	**Date Collected:**	09/14/16
Lab Code:	R1609806-011	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-11	**Date Collected:**	09/14/16
Lab Code:	R1609806-012	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-1	**Date Collected:**	09/15/16
Lab Code:	R1609806-013	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-X	**Date Collected:**	09/15/16
Lab Code:	R1609806-014	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-17	**Date Collected:**	09/15/16
Lab Code:	R1609806-015	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client: Bergmann Associates, Incorporated **Service Request:** R1609806
Project: Gowanda/6974.85

Sample Name: DR-1 **Date Collected:** 09/15/16
Lab Code: R1609806-016 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: DR-2 **Date Collected:** 09/15/16
Lab Code: R1609806-017 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: DR-3 **Date Collected:** 09/15/16
Lab Code: R1609806-018 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: DR-4 **Date Collected:** 09/15/16
Lab Code: R1609806-019 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name: G-1 **Date Collected:** 09/15/16
Lab Code: R1609806-020 **Date Received:** 09/15/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85		

Sample Name:	G-2	**Date Collected:**	09/15/16
Lab Code:	R1609806-021	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	G-3	**Date Collected:**	09/15/16
Lab Code:	R1609806-022	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	TRIP BLANK	**Date Collected:**	09/15/16
Lab Code:	R1609806-023	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	EQUIPMENT BLANK	**Date Collected:**	09/15/16
Lab Code:	R1609806-024	**Date Received:**	09/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 11:15
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-4	**Units:**	ug/L
Lab Code:	R1609806-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	50	10	09/21/16 18:43	
trans-1,2-Dichloroethene	ND U	50	10	09/21/16 18:43	
Tetrachloroethene (PCE)	ND U	50	10	09/21/16 18:43	
1,1,1-Trichloroethane (TCA)	ND U	50	10	09/21/16 18:43	
Trichloroethene (TCE)	ND U	50	10	09/21/16 18:43	
Vinyl Chloride	ND U	50	10	09/21/16 18:43	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	09/21/16 18:43	
Dibromofluoromethane	115	89 - 119	09/21/16 18:43	
Toluene-d8	115	87 - 121	09/21/16 18:43	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 11:40
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-20	**Units:**	ug/L
Lab Code:	R1609806-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	09/21/16 18:12	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 18:12	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 18:12	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 18:12	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 18:12	
Vinyl Chloride	ND U	5.0	1	09/21/16 18:12	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	09/21/16 18:12	
Dibromofluoromethane	112	89 - 119	09/21/16 18:12	
Toluene-d8	111	87 - 121	09/21/16 18:12	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 12:10
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-19R	**Units:**	ug/L
Lab Code:	R1609806-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	09/21/16 03:27	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 03:27	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 03:27	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 03:27	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 03:27	
Vinyl Chloride	ND U	5.0	1	09/21/16 03:27	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	09/21/16 03:27	
Dibromofluoromethane	113	89 - 119	09/21/16 03:27	
Toluene-d8	113	87 - 121	09/21/16 03:27	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 12:40
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-15	**Units:**	ug/L
Lab Code:	R1609806-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**6.8**	5.0	1	09/21/16 03:57	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 03:57	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 03:57	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 03:57	
Trichloroethene (TCE)	**17**	5.0	1	09/21/16 03:57	
Vinyl Chloride	ND U	5.0	1	09/21/16 03:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	09/21/16 03:57	
Dibromofluoromethane	111	89 - 119	09/21/16 03:57	
Toluene-d8	113	87 - 121	09/21/16 03:57	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 13:06
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-14	**Units:**	ug/L
Lab Code:	R1609806-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**69**	5.0	1	09/21/16 04:28	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 04:28	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 04:28	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 04:28	
Trichloroethene (TCE)	**31**	5.0	1	09/21/16 04:28	
Vinyl Chloride	ND U	5.0	1	09/21/16 04:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	110	85 - 122	09/21/16 04:28	
Dibromofluoromethane	115	89 - 119	09/21/16 04:28	
Toluene-d8	113	87 - 121	09/21/16 04:28	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 14:36
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-18	**Units:**	ug/L
Lab Code:	R1609806-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**26**	5.0	1	09/21/16 04:59	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 04:59	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 04:59	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 04:59	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 04:59	
Vinyl Chloride	ND U	5.0	1	09/21/16 04:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	09/21/16 04:59	
Dibromofluoromethane	111	89 - 119	09/21/16 04:59	
Toluene-d8	108	87 - 121	09/21/16 04:59	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 15:02
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-21	**Units:**	ug/L
Lab Code:	R1609806-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**39**	5.0	1	09/21/16 05:29	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 05:29	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 05:29	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 05:29	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 05:29	
Vinyl Chloride	ND U	5.0	1	09/21/16 05:29	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	110	85 - 122	09/21/16 05:29	
Dibromofluoromethane	112	89 - 119	09/21/16 05:29	
Toluene-d8	113	87 - 121	09/21/16 05:29	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 15:30
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-16	**Units:**	ug/L
Lab Code:	R1609806-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**20**	5.0	1	09/21/16 06:00	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 06:00	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 06:00	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 06:00	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 06:00	
Vinyl Chloride	ND U	5.0	1	09/21/16 06:00	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	09/21/16 06:00	
Dibromofluoromethane	112	89 - 119	09/21/16 06:00	
Toluene-d8	113	87 - 121	09/21/16 06:00	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 16:10
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-7	**Units:**	ug/L
Lab Code:	R1609806-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**62**	5.0	1	09/21/16 06:31	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 06:31	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 06:31	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 06:31	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 06:31	
Vinyl Chloride	ND U	5.0	1	09/21/16 06:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	09/21/16 06:31	
Dibromofluoromethane	112	89 - 119	09/21/16 06:31	
Toluene-d8	114	87 - 121	09/21/16 06:31	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 16:40
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-6	**Units:**	ug/L
Lab Code:	R1609806-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**120**	5.0	1	09/21/16 07:01	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 07:01	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 07:01	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 07:01	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 07:01	
Vinyl Chloride	ND U	5.0	1	09/21/16 07:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	110	85 - 122	09/21/16 07:01	
Dibromofluoromethane	113	89 - 119	09/21/16 07:01	
Toluene-d8	113	87 - 121	09/21/16 07:01	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 17:20
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-12	**Units:**	ug/L
Lab Code:	R1609806-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**7.8**	5.0	1	09/21/16 07:32	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 07:32	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 07:32	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 07:32	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 07:32	
Vinyl Chloride	ND U	5.0	1	09/21/16 07:32	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	09/21/16 07:32	
Dibromofluoromethane	111	89 - 119	09/21/16 07:32	
Toluene-d8	109	87 - 121	09/21/16 07:32	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/14/16 17:50
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-11	**Units:**	ug/L
Lab Code:	R1609806-012	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**300**	13	2.5	09/21/16 19:14	
trans-1,2-Dichloroethene	ND U	13	2.5	09/21/16 19:14	
Tetrachloroethene (PCE)	ND U	13	2.5	09/21/16 19:14	
1,1,1-Trichloroethane (TCA)	ND U	13	2.5	09/21/16 19:14	
Trichloroethene (TCE)	**130**	13	2.5	09/21/16 19:14	
Vinyl Chloride	**15**	13	2.5	09/21/16 19:14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	85 - 122	09/21/16 19:14	
Dibromofluoromethane	112	89 - 119	09/21/16 19:14	
Toluene-d8	108	87 - 121	09/21/16 19:14	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 10:15
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-1	**Units:**	ug/L
Lab Code:	R1609806-013	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**410**	13	2.5	09/21/16 19:44	
trans-1,2-Dichloroethene	ND U	13	2.5	09/21/16 19:44	
Tetrachloroethene (PCE)	ND U	13	2.5	09/21/16 19:44	
1,1,1-Trichloroethane (TCA)	ND U	13	2.5	09/21/16 19:44	
Trichloroethene (TCE)	**410**	13	2.5	09/21/16 19:44	
Vinyl Chloride	**18**	13	2.5	09/21/16 19:44	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	09/21/16 19:44	
Dibromofluoromethane	113	89 - 119	09/21/16 19:44	
Toluene-d8	111	87 - 121	09/21/16 19:44	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 10:30
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-X	**Units:**	ug/L
Lab Code:	R1609806-014	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**430**	13	2.5	09/21/16 20:15	
trans-1,2-Dichloroethene	ND U	13	2.5	09/21/16 20:15	
Tetrachloroethene (PCE)	ND U	13	2.5	09/21/16 20:15	
1,1,1-Trichloroethane (TCA)	ND U	13	2.5	09/21/16 20:15	
Trichloroethene (TCE)	**430**	13	2.5	09/21/16 20:15	
Vinyl Chloride	**19**	13	2.5	09/21/16 20:15	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	09/21/16 20:15	
Dibromofluoromethane	111	89 - 119	09/21/16 20:15	
Toluene-d8	112	87 - 121	09/21/16 20:15	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 11:06
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	MW-17	**Units:**	ug/L
Lab Code:	R1609806-015	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**370**	10	2	09/21/16 20:46	
trans-1,2-Dichloroethene	ND U	10	2	09/21/16 20:46	
Tetrachloroethene (PCE)	ND U	10	2	09/21/16 20:46	
1,1,1-Trichloroethane (TCA)	ND U	10	2	09/21/16 20:46	
Trichloroethene (TCE)	**95**	10	2	09/21/16 20:46	
Vinyl Chloride	ND U	10	2	09/21/16 20:46	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	09/21/16 20:46	
Dibromofluoromethane	114	89 - 119	09/21/16 20:46	
Toluene-d8	103	87 - 121	09/21/16 20:46	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 11:21
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	DR-1	**Units:**	ug/L
Lab Code:	R1609806-016	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**110**	25	5	09/21/16 08:03	
trans-1,2-Dichloroethene	ND U	25	5	09/21/16 08:03	
Tetrachloroethene (PCE)	ND U	25	5	09/21/16 08:03	
1,1,1-Trichloroethane (TCA)	ND U	25	5	09/21/16 08:03	
Trichloroethene (TCE)	**500**	25	5	09/21/16 08:03	
Vinyl Chloride	ND U	25	5	09/21/16 08:03	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	09/21/16 08:03	
Dibromofluoromethane	112	89 - 119	09/21/16 08:03	
Toluene-d8	114	87 - 121	09/21/16 08:03	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 11:43
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	DR-2	**Units:**	ug/L
Lab Code:	R1609806-017	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**180**	5.0	1	09/22/16 16:46	
trans-1,2-Dichloroethene	ND U	5.0	1	09/22/16 16:46	
Tetrachloroethene (PCE)	ND U	5.0	1	09/22/16 16:46	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/22/16 16:46	
Trichloroethene (TCE)	**38**	5.0	1	09/22/16 16:46	
Vinyl Chloride	ND U	5.0	1	09/22/16 16:46	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	09/22/16 16:46	
Dibromofluoromethane	111	89 - 119	09/22/16 16:46	
Toluene-d8	111	87 - 121	09/22/16 16:46	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 12:08
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	DR-3	**Units:**	ug/L
Lab Code:	R1609806-018	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**120**	5.0	1	09/22/16 17:17	
trans-1,2-Dichloroethene	ND U	5.0	1	09/22/16 17:17	
Tetrachloroethene (PCE)	ND U	5.0	1	09/22/16 17:17	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/22/16 17:17	
Trichloroethene (TCE)	**34**	5.0	1	09/22/16 17:17	
Vinyl Chloride	ND U	5.0	1	09/22/16 17:17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	85 - 122	09/22/16 17:17	
Dibromofluoromethane	111	89 - 119	09/22/16 17:17	
Toluene-d8	114	87 - 121	09/22/16 17:17	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 12:18
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	DR-4	**Units:**	ug/L
Lab Code:	R1609806-019	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**61**	5.0	1	09/22/16 17:48	
trans-1,2-Dichloroethene	ND U	5.0	1	09/22/16 17:48	
Tetrachloroethene (PCE)	ND U	5.0	1	09/22/16 17:48	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/22/16 17:48	
Trichloroethene (TCE)	**34**	5.0	1	09/22/16 17:48	
Vinyl Chloride	ND U	5.0	1	09/22/16 17:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	09/22/16 17:48	
Dibromofluoromethane	113	89 - 119	09/22/16 17:48	
Toluene-d8	114	87 - 121	09/22/16 17:48	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 13:17
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	G-1	**Units:**	ug/L
Lab Code:	R1609806-020	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**100**	5.0	1	09/22/16 18:18	
trans-1,2-Dichloroethene	ND U	5.0	1	09/22/16 18:18	
Tetrachloroethene (PCE)	ND U	5.0	1	09/22/16 18:18	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/22/16 18:18	
Trichloroethene (TCE)	**5.6**	5.0	1	09/22/16 18:18	
Vinyl Chloride	ND U	5.0	1	09/22/16 18:18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	09/22/16 18:18	
Dibromofluoromethane	113	89 - 119	09/22/16 18:18	
Toluene-d8	111	87 - 121	09/22/16 18:18	

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 13:27
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	G-2	**Units:**	ug/L
Lab Code:	R1609806-021	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	09/22/16 18:49	
trans-1,2-Dichloroethene	ND U	5.0	1	09/22/16 18:49	
Tetrachloroethene (PCE)	ND U	5.0	1	09/22/16 18:49	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/22/16 18:49	
Trichloroethene (TCE)	ND U	5.0	1	09/22/16 18:49	
Vinyl Chloride	ND U	5.0	1	09/22/16 18:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	09/22/16 18:49	
Dibromofluoromethane	114	89 - 119	09/22/16 18:49	
Toluene-d8	98	87 - 121	09/22/16 18:49	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 13:52
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	G-3	**Units:**	ug/L
Lab Code:	R1609806-022	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**320**	10	2	09/22/16 15:45	
trans-1,2-Dichloroethene	ND U	10	2	09/22/16 15:45	
Tetrachloroethene (PCE)	ND U	10	2	09/22/16 15:45	
1,1,1-Trichloroethane (TCA)	ND U	10	2	09/22/16 15:45	
Trichloroethene (TCE)	**84**	10	2	09/22/16 15:45	
Vinyl Chloride	ND U	10	2	09/22/16 15:45	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	09/22/16 15:45	
Dibromofluoromethane	113	89 - 119	09/22/16 15:45	
Toluene-d8	112	87 - 121	09/22/16 15:45	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	TRIP BLANK	**Units:**	ug/L
Lab Code:	R1609806-023	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	09/21/16 01:08	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 01:08	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 01:08	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 01:08	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 01:08	
Vinyl Chloride	ND U	5.0	1	09/21/16 01:08	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	09/21/16 01:08	
Dibromofluoromethane	113	89 - 119	09/21/16 01:08	
Toluene-d8	113	87 - 121	09/21/16 01:08	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16 12:00
Sample Matrix:	Water	**Date Received:**	09/15/16 16:30
Sample Name:	EQUIPMENT BLANK	**Units:**	ug/L
Lab Code:	R1609806-024	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	09/21/16 01:39	
trans-1,2-Dichloroethene	ND U	5.0	1	09/21/16 01:39	
Tetrachloroethene (PCE)	ND U	5.0	1	09/21/16 01:39	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	09/21/16 01:39	
Trichloroethene (TCE)	ND U	5.0	1	09/21/16 01:39	
Vinyl Chloride	ND U	5.0	1	09/21/16 01:39	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	09/21/16 01:39	
Dibromofluoromethane	113	89 - 119	09/21/16 01:39	
Toluene-d8	114	87 - 121	09/21/16 01:39	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Bergmann Associates, Incorporated **Service Request:** R1609806
Project: Gowanda/6974.85
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 85 - 122	Dibromofluoromethane 89 - 119	Toluene-d8 87 - 121
MW-4	R1609806-001	105	115	115
MW-20	R1609806-002	105	112	111
MW-19R	R1609806-003	108	113	113
MW-15	R1609806-004	107	111	113
MW-14	R1609806-005	110	115	113
MW-18	R1609806-006	105	111	108
MW-21	R1609806-007	110	112	113
MW-16	R1609806-008	108	112	113
MW-7	R1609806-009	107	112	114
MW-6	R1609806-010	110	113	113
MW-12	R1609806-011	106	111	109
MW-11	R1609806-012	102	112	108
MW-1	R1609806-013	103	113	111
MW-X	R1609806-014	103	111	112
MW-17	R1609806-015	103	114	103
DR-1	R1609806-016	108	112	114
DR-2	R1609806-017	103	111	111
DR-3	R1609806-018	102	111	114
DR-4	R1609806-019	103	113	114
G-1	R1609806-020	105	113	111
G-2	R1609806-021	104	114	98
G-3	R1609806-022	103	113	112
TRIP BLANK	R1609806-023	109	113	113
EQUIPMENT BLANK	R1609806-024	109	113	114
Lab Control Sample	RQ1611146-03	108	111	114
Method Blank	RQ1611146-04	109	114	117
DR-1 MS	RQ1611146-05	111	111	116
DR-1 DMS	RQ1611146-06	109	111	114
Lab Control Sample	RQ1611217-03	105	110	113
Method Blank	RQ1611217-04	103	113	115
Lab Control Sample	RQ1611289-03	102	111	113
Method Blank	RQ1611289-04	102	111	111
DR-3 MS	RQ1611289-05	106	113	115
DR-3 DMS	RQ1611289-06	107	113	115

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1611146-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND	U	5.0	1	09/21/16 00:37	
trans-1,2-Dichloroethene	ND	U	5.0	1	09/21/16 00:37	
Tetrachloroethene (PCE)	ND	U	5.0	1	09/21/16 00:37	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	09/21/16 00:37	
Trichloroethene (TCE)	ND	U	5.0	1	09/21/16 00:37	
Vinyl Chloride	ND	U	5.0	1	09/21/16 00:37	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	09/21/16 00:37	
Dibromofluoromethane	114	89 - 119	09/21/16 00:37	
Toluene-d8	117	87 - 121	09/21/16 00:37	

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dba ALS Environmental

QA/QC Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16
Sample Matrix:	Water	**Date Received:**	09/15/16
		Date Analyzed:	09/21/16
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	DR-1	**Units:**	ug/L
Lab Code:	R1609806-016	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike RQ1611146-05			Duplicate Matrix Spike RQ1611146-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
cis-1,2-Dichloroethene	110	393	250	114	384	250	111	72-133	2	30
trans-1,2-Dichloroethene	ND U	283	250	113	277	250	111	77-125	2	30
Tetrachloroethene (PCE)	ND U	282	250	113	273	250	109	67-137	3	30
1,1,1-Trichloroethane (TCA)	ND U	240	250	96	239	250	96	74-127	<1	30
Trichloroethene (TCE)	500	780	250	110	774	250	108	62-142	<1	30
Vinyl Chloride	ND U	286	250	114	278	250	111	60-157	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	09/15/16
Sample Matrix:	Water	**Date Received:**	09/15/16
		Date Analyzed:	09/22/16

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	DR-3	**Units:**	ug/L
Lab Code:	R1609806-018	**Basis:**	NA
Analysis Method:	8260C		

		Matrix Spike RQ1611289-05			Duplicate Matrix Spike RQ1611289-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
cis-1,2-Dichloroethene	120	162	50.0	93	171	50.0	110	72-133	5	30
trans-1,2-Dichloroethene	ND U	54.1	50.0	108	54.5	50.0	109	77-125	<1	30
Tetrachloroethene (PCE)	ND U	56.5	50.0	113	57.8	50.0	116	67-137	2	30
1,1,1-Trichloroethane (TCA)	ND U	46.4	50.0	93	47.4	50.0	95	74-127	2	30
Trichloroethene (TCE)	34	85.6	50.0	104	89.2	50.0	111	62-142	4	30
Vinyl Chloride	ND U	54.8	50.0	110	54.7	50.0	109	60-157	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1611217-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND	U	5.0	1	09/21/16 13:06	
trans-1,2-Dichloroethene	ND	U	5.0	1	09/21/16 13:06	
Tetrachloroethene (PCE)	ND	U	5.0	1	09/21/16 13:06	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	09/21/16 13:06	
Trichloroethene (TCE)	ND	U	5.0	1	09/21/16 13:06	
Vinyl Chloride	ND	U	5.0	1	09/21/16 13:06	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	09/21/16 13:06	
Dibromofluoromethane	113	89 - 119	09/21/16 13:06	
Toluene-d8	115	87 - 121	09/21/16 13:06	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1609806
Project:	Gowanda/6974.85	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1611289-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND	U	5.0	1	09/22/16 14:14	
trans-1,2-Dichloroethene	ND	U	5.0	1	09/22/16 14:14	
Tetrachloroethene (PCE)	ND	U	5.0	1	09/22/16 14:14	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	09/22/16 14:14	
Trichloroethene (TCE)	ND	U	5.0	1	09/22/16 14:14	
Vinyl Chloride	ND	U	5.0	1	09/22/16 14:14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	85 - 122	09/22/16 14:14	
Dibromofluoromethane	111	89 - 119	09/22/16 14:14	
Toluene-d8	111	87 - 121	09/22/16 14:14	

Client: Bergmann Associates, Incorporated
Project: Gowanda/6974.85
Sample Matrix: Water

Service Request: R1609806
Date Analyzed: 09/20/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1611146-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
cis-1,2-Dichloroethene	8260C	23.0	20.0	115	80-121
trans-1,2-Dichloroethene	8260C	22.6	20.0	113	80-120
Tetrachloroethene (PCE)	8260C	23.5	20.0	118	78-124
1,1,1-Trichloroethane (TCA)	8260C	20.1	20.0	101	74-120
Trichloroethene (TCE)	8260C	22.5	20.0	112	78-123
Vinyl Chloride	8260C	23.9	20.0	120	69-133

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QA/QC Report

Client: Bergmann Associates, Incorporated
Project: Gowanda/6974.85
Sample Matrix: Water

Service Request: R1609806
Date Analyzed: 09/21/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1611217-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
cis-1,2-Dichloroethene	8260C	23.0	20.0	115	80-121
trans-1,2-Dichloroethene	8260C	22.3	20.0	111	80-120
Tetrachloroethene (PCE)	8260C	23.8	20.0	119	78-124
1,1,1-Trichloroethane (TCA)	8260C	19.6	20.0	98	74-120
Trichloroethene (TCE)	8260C	22.4	20.0	112	78-123
Vinyl Chloride	8260C	22.6	20.0	113	69-133

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Bergmann Associates, Incorporated
Project: Gowanda/6974.85
Sample Matrix: Water

Service Request: R1609806
Date Analyzed: 09/22/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1611289-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
cis-1,2-Dichloroethene	8260C	21.6	20.0	108	80-121
trans-1,2-Dichloroethene	8260C	21.2	20.0	106	80-120
Tetrachloroethene (PCE)	8260C	22.5	20.0	113	78-124
1,1,1-Trichloroethane (TCA)	8260C	19.2	20.0	96	74-120
Trichloroethene (TCE)	8260C	21.9	20.0	109	78-123
Vinyl Chloride	8260C	21.3	20.0	106	69-133

Bergmann associates
architects // engineers // planners

NOVEMBER 2016

GROUNDWATER CHARACTERIZATION REPORT

NEW YORK STATE OFFICE OF PEOPLE WITH DEVELOPMENTAL DISABILITIES

GROUNDWATER CHARACTERIZATION REPORT
NOVEMBER 2016 SAMPLING EVENT

Former Gowanda Day Habilitation Center
4 Industrial Place
Town of Gowanda, Cattaraugus County
Voluntary Cleanup Program Agreement V-00463-9

Prepared for:

Dormitory Authority & New York State Office of People with Developmental Disabilities

Bergmann Project No. 6974.85

Issuance Date: April 6, 2017

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CHARTS

APPENDICES

1.0 Introduction

Bergmann Associates (Bergmann) is submitting this groundwater characterization report for the November 2016 sampling event on behalf of the Dormitory Authority of the State of New York (DASNY) and the New York State Office of People with Developmental Disabilities (OPWDD) for activities conducted at the former Gowanda Day Habilitation Center facility at 4 Industrial Place, Gowanda, NY. The OPWDD, as the volunteer, has entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC) to conduct investigations and implement remedial measures in accordance with VCA Site No. V-00463-9, effective August 16, 2001.

1.1 Scope of Work

This report documents the site-wide groundwater monitoring and laboratory analytical sampling event conducted on November 21-22, 2016. Field measurements, sampling procedures and laboratory analysis were conducted in accordance with the October 2006 Operations, Monitoring and Maintenance (OM&M) Manual and as modified with NYSDEC approval. During this sampling event, groundwater from 14 of 21 site-related groundwater monitoring wells and 6 of 7 groundwater recovery wells were sampled for laboratory analysis. Of the 8 monitoring wells determined by the NYSDEC and Bergmann personnel in 2008 to be outside the area of impact by the Groundwater Treatment System (GTS), 7 were not sampled. These monitoring wells include MW-2, MW-3, MW-5, MW-8, MW-9, MW-10 and MW-13. Monitoring well MW-21 was added to the well sampling plan permanently by NYSDEC to monitor groundwater migration off-site.

The prior groundwater sampling event was conducted in September 2016 and included analysis of groundwater samples from 14 of 21 site-related groundwater monitoring wells and 7 of 7 groundwater recovery wells. Results of the September 2016 sampling event were summarized in a report dated December 12, 2016.

1.2 Site Background

The Gowanda Day Habilitation site consists of a 5.94 acre parcel located at 4 Industrial Place. The building, previously used by several manufacturing operations, was built in stages between circa 1948 and 1987 and was renovated in 1987-1988. New York State agencies have occupied the building since 1982. New York State acquired the parcel in 1989. The building was most recently operated by the OPWDD, which at that time was known as the Western New York Developmental Disabilities Services Office, as a Day Habilitation Center for mental care clients. In April 2001, on-site operations ceased. The nature and extent of contamination at the Gowanda Day Habilitation Center was detailed as part of the 2003 Site Investigation and 2004 Supplemental Site Investigation Reports. Trichloroethene (TCE) was the most commonly detected compound. TCE degradation products cis-1,2,Dichloroethene (Cis-1,2-DCE), trans-1,2-Dichloroethene (Trans-1,2-DCE) and Vinyl Chloride (VC) were also detected.

Following Interim Remedial Measure (IRM) system installation, the Groundwater Treatment System (GTS) and the Soil Vapor Extraction System (SVES) were activated on May 10, 2005, recovering 2-5 gallons per minute (gpm) of groundwater. An additional groundwater recovery well, designated G-3, was installed outside the building and adjacent to MW-17 in November 2008. The GTS portion consists of 7 groundwater recovery wells (4 dual phase recovery wells and 3 groundwater-only recovery wells), an air compressor, a network of controller-less pneumatic pumps and an air stripper treatment system to process recovered groundwater. Recovered groundwater was pumped to the equalization tank for settling of the sediment and transferred to the air stripper using a consistent flow rate. Air discharge from the air stripper was routed to the EVE for treatment prior to discharge. Groundwater was discharged to the village of Gowanda Sewage Treatment Plant (STP).

In January 2008, the building was decommissioned. The GTS was winterized with the addition of heat tape and insulation to conveyance lines and the installation of an independently operated suspended heater in the treatment area for the GTS and SVES (former Machine Shop). Quarterly groundwater sampling with Operation and Maintenance of the remediation system has been ongoing since 2002.

In January 2014, the condition of the SVE and GTS was discussed with the NYSDEC representative and it was agreed that these systems would be inactivated to allow for groundwater level recovery during the preparation of an ISCO remedial action plan (RAP) and implementation of an ISCO treatment. Bergmann submitted an ISCO RAP for groundwater treatment to the NYSDEC to address remaining contamination at the Site in lieu of costly repair of the SVE and GTS. The SVE and GTS equipment will remain on site in the event that re-activation is required in the future. The ISCO was implemented in May 2015 and a second round was implemented in September 2015. An ISCO Report was prepared under separate cover.

2.0 Groundwater Sampling Overview and Methods

2.1 Well Maintenance Activities

During the November 2016 site visit, all monitoring wells were accessible and the integrity of the wells was not compromised. Repairs or maintenance to the network of groundwater monitoring wells or recovery wells has not been required since June 2007, with the exception of redevelopment activities performed on August 19, 2015. All protective casings and flush-mount curb boxes were found to be intact and secure. Exterior monitoring wells are secured with locking stick-up protective casings. The monitoring wells within the building are secured with flush-mount roadway covers. Well maintenance was not performed during the November 2016 sampling event.

2.2 Groundwater Field Monitoring and Sampling Activities

Groundwater measurements and sampling activities were conducted in accordance with the October 2006 OM&M Manual. The depths to groundwater for groundwater monitoring wells are determined on a regular basis to track site-wide changes in the water table elevation and to allow for adjustment at recovery wells. Past operation of the recovery wells was intended to establish hydraulic containment of the plume of impacted groundwater beneath the former Day Habilitation building and improve recovery and treatment of impacted groundwater. Groundwater samples were collected from 14 of the 21 site-related groundwater monitoring wells for laboratory analysis on November 21-22, 2016. Depth to groundwater measurements were obtained from 27 wells (including recovery wells).

Groundwater samples were collected from monitoring wells after each well was gauged and purged of standing water via low-flow pumping using a Geo-pump electric peristaltic pump. Sample parameters including turbidity, temperature, pH, oxygen, salinity and conductivity were monitored using a Horiba U-53 to ensure sufficient well purging prior to sampling. Groundwater samples were collected from recovery wells using dedicated bailers, to allow for an accurate representation of groundwater to reduce collection of sediment from within the wells. A single duplicate sample and a field blank sample were collected and submitted for laboratory analysis. The duplicate sample was collected after sampling MW-1, the well with the highest concentration of contamination for historic sampling events.

Groundwater samples were delivered via chain-of-custody protocol to ALS Environmental Services located in Rochester, NY, a NYSDOH certified laboratory, for testing using EPA Method 8260B for targeted chlorinated volatile organic compounds (VOCs) of concern. Analytical results for each individual monitoring well have been posted for comparative purposes from sampling events completed 2002 – 2015.

3.0 Local Groundwater Flow Characterization

The Site water table potentiometric surface pattern and groundwater flow direction was determined for November 2016 using elevations measured at each well. Groundwater elevations and well reference elevations were calculated using depth to water values obtained on November 21, 2016. The well gauging values and groundwater elevations are provided in Table 1 – Groundwater Elevations and Field Measurements November 2016.

The November 2016 groundwater contour map shows a flow pattern similar to groundwater contours observed historically since 2002. Groundwater at the Site is flowing in a northerly direction. Torrance Place is hydraulically down-gradient from the Day Habilitation Center building. The November 2016 depths to groundwater range from 6.07 ft below top of casing (btoc) at MW-2, located on the south side of the property to 13.22 ft btoc at MW-6 located at the northern property line. The average depth to groundwater at the wells measured was 9.62 ft bgs.

The site-wide average depth to water table decreased by approximately 0.66 ft when compared to the September 2016 sampling event. This increase in the water table is inferred as seasonal.

Measured depth to water at all gauged monitoring and recovery wells is presented Table 1 and Groundwater Contours are presented on Figure 1 – November 2016 Groundwater Contour Map.

4.0 Laboratory Analysis

4.1 Laboratory Analysis on Groundwater Samples

Laboratory analysis was completed on the groundwater samples from 14 monitoring wells and 6 recovery wells collected November 21-22, 2016. Samples were analyzed for VOCs via EPA Method 8260B. Analysis was performed in accordance with the October 2006 OM&M Manual. The following halogenated VOCs were analyzed for:

- Trichloroethene (TCE)
- 1,1,1 Trichloroethane (TCA)
- Cis-1,2-Dichloroethene (Cis-DCE)
- Trans-1,2-Dichloroethene (Trans-DCE)
- Vinyl Chloride (VC)

4.2 Monitoring Well Groundwater Analysis Summary

The November 2016 analytical results indicate 3 chlorinated VOCs in monitoring well samples: TCE, Cis-DCE, and Vinyl Chloride. Chlorinated VOCs were detected in groundwater from 11 of the 14 sampled monitoring wells. Analytical results are summarized in Table 2 – November 2016 Analytical Results Summary, which compares detected VOCs and applicable NYSDEC Class GA Standards for each analyte. The complete laboratory analytical reporting package is provided in Appendix A – Laboratory Analytical Results Report November 2016 Sampling Event. Table 3 – Historic Groundwater Analysis Results Summary includes the historical total VOC concentrations at each well since sampling of the monitoring wells began in 2002.

VOCs were not detected in groundwater from 3 of the sampled monitoring wells (MW-4, MW-19R, and MW-20). Sample results from these wells have historically indicated low to non-detect levels of VOCs.

Groundwater samples from 11 monitoring wells had detectable chlorinated VOCs at concentrations above applicable Class GA Standards. The monitoring well with the highest total VOCs, MW-1 (1,467 ppb), is located in the area of the historically greatest impacted groundwater.

Concentrations in 3 of the 14 monitoring well groundwater samples increased when compared to the September 2016 sampling event while concentrations in 8 of the 14 monitoring well groundwater samples decreased. Concentrations in 3 groundwater samples from monitoring wells had no change. The current sampling analytical results indicate an average site-wide decrease in total VOCs of approximately 71% since activation of the GTS in May 2005.

Due to high concentrations of VOCs in the samples from monitoring wells MW-1, MW-11, MW-17, DR-1 and G-3, diluted analysis and correspondingly elevated detection limits were required. It is possible that related chlorinated VOCs may be present at concentrations below the elevated detection limits for these samples.

The area of highest impacted groundwater exists at the area centered between monitoring wells MW-1 and MW-11, which has historically indicated the highest levels of VOCs and is inferred as the source area of impacted groundwater. In the area where the plume of impacted groundwater is inferred (monitoring wells MW-1, MW-6, MW-7, MW-11, MW-12, MW-14, MW-15, and MW-17) the current laboratory analysis shows a contaminant reduction in VOC concentrations by an average of approximately 61% since groundwater monitoring of these wells began in 2002.

Monitoring well MW-1 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at monitoring well MW-1 for the September 2016 sampling event is 838 parts per billion (ppb), an increase from the June 2016 value of 580 ppb. Since activation of the GTS, detected VOCs at MW-1 have increased by 8%.

Monitoring well MW-11 increased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-11 for the November 2016 sampling event is 646 ppb, an increase from the September 2016 value of 445 ppb. Since activation of the GTS, detected VOCs at MW-11 have decreased by 86%.

Monitoring well MW-12 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-12 for the November 2016 sampling event is 7.1 ppb, a decrease from the September 2016 value of 7.8 ppb. MW-12 is nearest to recovery well DR-2, in close proximity to the center of the building. Since activation of the GTS in May 2005, detected VOCs at MW-12 have decreased by 100%.

Monitoring well MW-14 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-14 for the November 2016 sampling event is 76 ppb, a decrease from the September 2016 value of 100 ppb. MW-14 is nearest to recovery well DR-3. Since activation of the GTS in May 2005 detected VOCs at MW-14 have decreased by 76%.

Monitoring well MW-15 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at MW-15 for the November 2016 sampling event is 11 ppb, a decrease from the September 2016 value of 23.8 ppb. MW-15 is nearest to recovery well DR-4. Since activation of the GTS the detected VOCs at MW-15 have decreased by 99%.

Five groundwater monitoring wells are located along the subject property's north perimeter, down-gradient from the area of impacted groundwater. The north perimeter monitoring wells consist of wells MW-5, MW-6, MW-7, MW-16, MW-17 and MW-21. MW-5 has not been sampled since the March 2008 sampling event. Analytical results are discussed below. The current analytical results exhibit an increase in targeted VOCs at the sampled monitoring wells along the north perimeter.

Monitoring wells MW-18, MW-19R and MW-21 are located off-site along Torrance Place. These three wells are considered to be beyond the radius of influence for the Day Habilitation groundwater treatment system. The current results indicate non-detect for MW-18 and MW-19R. Monitoring well MW-21 was added to the sampling list at the request of the NYSDEC beginning with the June 2016 sampling event. The total VOC concentration at MW-21 for the November 2016 sampling event is 17 ppb, a decrease from the September 2016 value of 39 ppb. Monitoring well MW-21 is located north-northwest of the Site, on the opposite side of Thatcher Brook.

Laboratory analytical results are included in Appendix A. Monitoring well locations and distribution of analytical results are shown on Figure 2 – November 2016 Distribution of Groundwater Analytical Results: Monitoring Wells.

4.3 Sentry Well Groundwater Analysis Summary

Sentry groundwater monitoring wells monitor a separate occurrence of contaminated groundwater at the Gowanda Electronics site (NYSDEC Site 905025), immediately east of Industrial Place and east of the Day Habilitation Center property. The eastern sentry wells sampled for this event included MW-19R, MW-20 and MW-4. The current results indicate non-detect for all three samples from the eastern sentry wells.

The Gowanda Electronics impacted groundwater plume may be migrating to an area near Industrial Place and has intermittently impacted MW-19R. The Gowanda Electronics impacted groundwater plume does not appear to extend to the Day Habilitation Center property, based on consistent non-detect values at the eastern sentry wells. Conversely, impacted groundwater from the Day Habilitation Center does not appear to extend off-site to the east toward Industrial Place. According to Mr. Chris Sanson, an Environmental Scientist for Groundwater & Environmental Services, Inc. (GES), an ISCO was implemented for the Gowanda Electronics site in March 2014.

Laboratory analytical results are included in Appendix A. Sentry well locations and analytical results are shown on Figure 2.

4.4 Recovery Well Groundwater Analysis Summary

During the November 2016 sampling event, 6 of the 7 recovery wells were sampled. The November 2016 analytical results indicate detection of 2 chlorinated VOCs in recovery well samples: TCE and Cis-DCE. Chlorinated VOCs were detected in samples from 6 of the 6 sampled recovery wells. Total VOCs at the 7 recovery wells for which past data is available have decreased since activation of the GTS in May 2005. The average reduction in VOCs for the current sampling event is 47% relative to concentrations prior to GTS activation in 2005. Relative percent reductions in total VOCs for all monitoring wells and recovery wells are shown on Table 4 – Percent Reductions in Total Groundwater VOCs.

Recovery well DR-1 increased slightly in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-1 for the November 2016 sampling event is 617 ppb, a slight increase from the September 2016 value of 610 ppb. The current sampling event indicates an increase in VOCs at DR-1 of 7% since activation of the GTS. Recovery well DR-1 is located closest to MW-1 in the area of historically highest concentrations.

Recovery well DR-2 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-2 for the November 2016 sampling event is 137 ppb, a decrease from the September 2016 value of 218 ppb. The current sampling event indicates a decrease in VOCs at DR-2 of 75% since activation of the GTS.

Recovery well DR-3 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-3 for the November 2016 sampling event is 98 ppb, a decrease from the September 2016 value of 154 ppb. The current sampling event indicates a decrease in VOCs at DR-3 of 36% since activation of the GTS.

Recovery well DR-4 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at DR-4 for the November 2016 sampling event is 79 ppb, a decrease from the September 2016 value of 95 ppb. The current sampling event indicates a decrease in VOCs at DR-4 of 91% since activation of the GTS.

Recovery well G-1 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at G-1 for the November 2016 sampling event was 85 ppb, a decrease from the September 2016 value of 105.6 ppb. The current sampling event indicates a decrease in VOCs at G-1 of 58% since activation of the GTS.

Recovery well G-2 was dry during the November 2016 sampling event. The total VOC concentration at G-2 for the September 2016 sampling event was non-detect, a decrease from the previous sampling of G-2 in August 2015 value of 28 ppb. The previous sampling event indicated a decrease in VOCs at G-2 of 100% since activation of the GTS.

Recovery well G-3 decreased in targeted chlorinated VOCs relative to the prior sampling event. The total VOC concentration at G-3 for the November 2016 sampling event is 293 ppb, a decrease from the September 2016 value of 404 ppb. The current sampling event indicates a decrease in VOCs at G-3 of 27% since activation of the GTS. Recovery well G-3 is located along the northern property boundary.

Laboratory analytical results are included in Appendix A. Recovery well locations and analytical results are shown on Figure 3 – November 2016 Distribution of Groundwater Analytical Results: Recovery Wells.

4.5 Quality Assurance and Quality Control Samples

For quality assurance purposes a duplicate groundwater sample was collected from monitoring well MW-1, designated sample "MW-X." Results from sample MW-X were consistent with the sample collected from MW-1.

A trip blank was supplied by the laboratory and submitted for analysis along with the groundwater samples. The trip blank sample was non-detect for chlorinated halogens. An equipment blank was also collected to ensure proper cleaning of the sampling equipment. The equipment blank, designated as EB, was non-detect for chlorinated halogens.

Laboratory analytical results are included in Appendix A.

5.0 Remediation System Efficiency

5.1 Impact of the GTS Recovery Wells

Groundwater control charts for the 7 recovery wells and the nearest relative monitoring well were created to illustrate the impact of the GTS on recovery wells at the Day Habilitation Center. Chart 1 presents a summary of the sampled groundwater recovery wells. Since activation of the GTS in May 2005, all 7 groundwater recovery wells have demonstrated a general decrease in VOC concentration.

The current sampling event results represent an increase of total VOCs at 1 recovery well (DR-1) when compared to the September 2016 sampling event. This increase may be attributed to residual contamination in the sand pack of the recovery wells due to the shutdown of the GTS and the movement of sand pack and sediment during the ISCO injections completed in May and September 2015.

Chart 2 displays the relationship between monitoring wells MW-1, MW-11 and recovery well DR-1. The current total VOCs at MW-1 (1,466.9 ppb) show an increase from the September 2016 sampling event (838 ppb). This increase may be attributed to residual contamination in the sand pack of the recovery wells due to the shutdown of the GTS and the movement of sand pack and sediment during the ISCO injections completed in May 2015 and September 2015. The current total VOCs at MW-11 (646 ppb) show an increase from the September 2016 sampling event (445 ppb). The current total VOCs at DR-1 (617 ppb) show a slight increase from the September 2016 sampling event (610 ppb).

Chart 3 compares laboratory results between recovery well DR-2 and monitoring well MW-12. These wells are located north of the wells outlined in Chart 1 and represent the northern limit of the highest concentration within the impacted area. The current total VOCs at MW-12 (7.1 ppb) show a decrease from the September 2016 sampling event (7.8 ppb). The current total VOCs at recovery well DR-2 (137 ppb) show a decrease from the September 2016 sampling event (218 ppb).

Chart 4 compares the relationship between wells DR-3 and MW-14 which are located in the central portion of the Gowanda Day Habilitation building. The current total VOCs at MW-14 (76 ppb) show a decrease from the September 2016 sampling event (100 ppb). The current total VOCs at recovery well DR-3 (98 ppb) show an increase from the September 2016 sampling event (154 ppb). This increase may be attributed to residual contamination in the sand pack of the recovery wells due to the shutdown of the GTS and the movement of sand pack and sediment during the ISCO injections completed in May 2015 and September 2015.

Chart 5 compares laboratory results between recovery well DR-4 and MW-15. These wells are located at the center-north portion of the building. The current total VOCs at MW-15 (11 ppb) show a decrease from the September 2016 sampling event (23.8 ppb). The current total VOCs at recovery well DR-4 (79 ppb) show a decrease from the September 2016 sampling event (95 ppb).

Chart 6 compares laboratory results between recovery well G-1 and monitoring well MW-17. Recovery well G-1 is located in the northern portion of the building and monitoring well MW-17 is located along the northern property line. The current total VOCs at recovery well G-1 (85 ppb) show a decrease from the September 2016 sampling event (105.6 ppb).

Chart 7 compares laboratory results between recovery well G-2 and monitoring well MW-7 which are located at the northeastern portion of the building. This area is at the apparent western perimeter of the area of impacted groundwater. G-2 was dry during the sampling event and was therefore not sampled. The total VOCs at recovery well G-2 for the September 2016 sampling event were non-detect.

Chart 8 compares laboratory results between recovery well G-3 which is located at the northeastern portion of the building and MW-17 which is located along the northern property boundary. This area is at the western perimeter of the apparent area of impacted groundwater. The current total VOCs at recovery well G-3 (293 ppb) show a decrease from the September 2016 sampling event (404 ppb). The current total VOCs at monitoring well MW-17 (375 ppb) show a decrease from the September 2016 sampling event (465 ppb). Groundwater sampling results from monitoring wells along the western and eastern perimeters have consistently been non-detect.

5.2 Extent of Impacted Groundwater

The area of highest impacted groundwater is consistent with prior sampling events. The bulk of the contaminant mass appears to be concentrated beneath the building in the source area, in the vicinity of monitoring well MW-1 and MW-11, extending north to recovery well DR-2. Concentration of VOCs in the source area have been reduced as a result of cleanup activities.

When operating, the GTS maintained an area of hydraulic containment for recovery wells within the source area of impacted groundwater. The GTS was successful in hydraulically containing most of the contaminant plume on the property and minimizing further migration. The GTS was not operating during this monitoring period and overall sample results are similar to previous quarterly sampling results. Therefore, residual VOCs in the plume have not migrated and appear to be stabilized when compared to sample results with operation of the GTS during previous monitoring events.

VOCs were not detected at MW-19R during the November 2016 sampling event. Monitoring well MW-21 was added to the sampling plan at the request of the NYSDEC. The total VOC concentration at MW-21 for the current sampling event (17 ppb) is the lower than the September 2016 concentration (39 ppb). MW-19R, MW-18 and MW-21 are off-site monitoring wells located north of the facility. These monitoring points are inferred as beyond the area of hydraulic influence of the recovery wells. Impacted groundwater at these areas was detected prior to activation of the GTS in May 2005.

The redevelopment of wells performed in fall 2015 at the Site was performed to remove sediment from wells at the Site after the ISCO in-situ injections. Overall reduction of contaminants in the majority of the monitoring and recovery wells has occurred at the Site when viewed over the past 10 years of sampling.

A meeting with Bergmann, DASNY and NYSDEC should be scheduled to determine next steps for further contaminant reduction and eventual spill closure.

5.3 Future Groundwater Monitoring and Analysis Activities

The condition of the SVE and GTS was discussed with the NYSDEC representative and it was agreed that these systems would be inactivated to allow for groundwater level recovery during the implementation of an ISCO groundwater treatment and subsequent sampling events. Bergmann performed an ISCO RAP in May (round 1) and September (round 2) 2015 to address remaining residual contamination at the Site in lieu of costly repair of the SVE and GTS. The SVE and GTS equipment remains on site in the event that re-activation is required in the future; however, system components may need repair and/or replacement. Three routine quarterly monitoring events are required to complete NYSDEC requirements for the ISCO groundwater treatment.

The next site-wide groundwater sampling is tentatively scheduled for April, 2017, pending budget approval. Future sampling and analytical events will be conducted to track the effects of the treatment system and ISCO treatment on impacted groundwater and to evaluate seasonal changes in water table elevations. In addition, the evaluation of groundwater flow pattern and movement of residual impacted groundwater at the site will be performed during future sampling events.

TABLES

Table 1 Groundwater Elevations and Field Measurements November 2016
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
Casing Elevation*	778.23	778.08	778.38	778.43	778.61	781.10	780.94	781.33	782.61	780.02
Depth to Groundwater (btoc)	6.66	6.07	6.52	7.32	10.48	13.22	13.15	9.52	9.42	10.05
Groundwater Elevation	771.57	772.01	771.86	771.11	768.13	767.88	767.79	771.81	773.19	769.97
Well Diameter	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Product Thickness	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Well Depth (btoc)	16.02	17.15	16.30	15.78	13.95	22.88	21.80	17.65	20.96	19.42
Bottom of Well Elevation	762.21	760.93	762.08	762.65	764.66	758.22	759.14	763.68	761.65	760.60
Thickness of Water Column	9.36	NA	9.78	8.46	3.47	9.66	8.65	8.13	11.54	9.37
Minimum Purge Volume (gal)	1.5	NA	1.6	1.4	0.6	1.6	1.4	1.3	1.9	1.5
3 Volumes	4.6	NA	4.8	4.1	1.7	4.7	4.2	4.0	5.6	4.6
Actual volume purged	4.6	NS	NS	4.1	NS	4.7	4.2	NS	NS	NS
Comments	Flush = -0.29'	Flush = -0.30'	Flush = -0.23'	Flush = -0.34'	Flush = -0.24'	Stickup=2.17'	Stickup=2.17'	Stickup=2.84'	Stickup=2.05'	Stickup=2.56'

	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19R	MW-20	MW-21
Casing Elevation	778.58	778.50	778.39	778.43	778.38	780.43	779.85	776.39	774.2	778.04	774.76
Depth to Groundwater (btoc)	7.01	7.20	11.21	10.42	10.36	12.52	13.20	9.25	8.23	9.85	9.15
Groundwater Elevation	771.57	771.30	767.18	768.01	768.02	767.91	766.65	767.14	765.97	768.19	765.61
Well Diameter	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Product Thickness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Well Depth (btoc)	15.48	17.38	17.40	18.15	19.80	23.26	25.18	25.0	17.67	14.75	15.82
Bottom of Well Elevation	763.10	761.12	760.99	760.28	758.58	757.17	754.67	751.39	756.53	763.29	758.94
Thickness of Water Column	8.47	10.18	6.19	7.73	9.44	10.74	NA	15.75	9.44	4.90	6.67
Minimum Purge Volume (gal)	1.4	1.7	1.0	1.3	1.5	1.8	NS	2.6	1.5	0.8	1.09
3 Volumes	4.1	5.0	3.0	3.8	4.6	5.3	NS	7.7	4.6	2.4	3.3
Actual volume purged	4.1	5.0	NS	3.8	4.6	5.3	NS	7.7	4.6	2.4	NS
Comments	Flush = -0.23'	Flush = -0.35'	Flush = -0.48'	Flush = -0.39'	Flush = -0.38	Stickup=2.26'	Stickup=1.18'	Flush =-0.26'	Flush ='0.36'	Flush=-0.43'	Flush =-.71'

	DR-1	DR-2	DR-3	DR-4	G-1	G-2	G-3
Casing Elevation	779.66	779.93	779.78	779.64	779.83	779.72	NA
Depth to Groundwater (btoc)	7.43	7.68	11.14	11.07	11.32	DRY	10.31
Groundwater Elevation	772.23	772.25	768.64	768.57	768.51	NA	NA
Well Diameter	4"	4"	4"	4"	4"	4"	4"
Product Thickness	ND	ND	ND	ND	ND	ND	ND
Well Depth (btoc)	18.06	18.06	20.45	19.69	22.98	20.72	~27.00
Bottom of Well Elevation	761.6	761.87	759.33	759.95	756.85	759	NA
Thickness of Water Column	10.63	10.38	9.31	8.62	11.66	NA	NA
Minimum Purge Volume (gal)	6.94	6.78	6.08	5.63	7.61	NS	NS
3 Volumes	20.82	20.33	18.24	16.89	22.84	NS	NS
Actual volume purged	20.82	20.33	18.24	16.89	22.84	NS	NS
Comments	Stickup=0.85'	Stickup=1.06'	Stickup=0.95'	Stickup=0.84'	Stickup=1.03'	Stickup=0.86'	

NOTES

btoc = Below top of casing (inner riser) All measurements are in feet, referenced to Mean Sea Level
ND = No floating product encountered
Minimum purge volume = 3 X well volume, 0.163 gallon per foot in a 2" diameter well. 0.653 gallon per foot in a 4" diameter well.
Monitoring well MW-19 was removed and the area restored on July 23, 2003 immediately after the well was developed, purged of 3 volumes and sampled.
The borehole for MW-19 was backfilled with a cement-bentonite grout after the PVC screening and casing was successfully removed.
Wells MW-19R, MW-20 and MW-21 were installed in October 2004.

Table 2 November 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-1 Sample Date: 11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**1,100**	**410**	5.0
CIS	**340**	**410**	5.0
TRANS	**19**	ND	5.0
VC	**7.9**	**18**	2.0
TCA	ND	ND	5.0
Total VOCs	1,466.9	838	

Monitoring Well MW-2 Sample Date: NS
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-3 Sample Date: NS
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-4 Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

Monitoring Well MW-5 Sample Date: NS
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-6 Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**87**	**120**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	87	120	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 November 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-7 Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**110**	**62**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	110	62	

Monitoring Well MW-8 Sample Date: NS
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-9 Sample Date: NS
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-10 Sample Date: NS
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-11 Sample Date: 11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**410**	**130**	5.0
CIS	**220**	**300**	5.0
TRANS	**16**	ND	5.0
VC	ND	**15**	2.0
TCA	ND	ND	5.0
Total VOCs	646	445	

Monitoring Well MW-12 Sample Date: 11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**7.1**	**7.8**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	7.1	7.8	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 November 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-13 Sample Date: NS
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	NS	NS	5.0
CIS	NS	NS	5.0
TRANS	NS	NS	5.0
VC	NS	NS	2.0
TCA	NS	NS	5.0
Total VOCs	NS	NS	

Monitoring Well MW-14 Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**28**	**31**	5.0
CIS	**48**	**69**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	76	100	

Monitoring Well MW-15 Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**11**	**17**	5.0
CIS	ND	**6.8**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	11	23.8	

Monitoring Well MW-16 Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**14**	**20**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	14	20	

Monitoring Well MW-17 Sample Date:11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**75**	**95**	5.0
CIS	**300**	**370**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	375	465	

Monitoring Well MW-18 Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**10**	**26**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	10	26	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 November 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Monitoring Well MW-19R Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

Monitoring Well MW-20 Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

Monitoring Well MW-21 Sample Date: 11/21/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	**17**	**39**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	17	39	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 November 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Recovery Well DR-1 Sample Date:11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**520**	**500**	5.0
CIS	**97**	**110**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	617	610	

Recovery Well DR-2 Sample Date:11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**37**	**38**	5.0
CIS	**100**	**180**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	137	218	

Recovery Well DR-3 Sample Date:11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**31**	**34**	5.0
CIS	**67**	**120**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	98	154	

Recovery Well DR-4 Sample Date:11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**34**	**34**	5.0
CIS	**45**	**61**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	79	95	

Recovery Well G-1 Sample Date:11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	**5.6**	5.0
CIS	**85**	**100**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	85	105.6	

Recovery Well G-2 Sample Date:11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	NS	ND	5.0
CIS	NS	ND	5.0
TRANS	NS	ND	5.0
VC	NS	ND	2.0
TCA	NS	ND	5.0
Total VOCs	NS	ND	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 2 November 2016 Analytical Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

Recovery Well G-3 Sample Date: 11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**53**	**84**	5.0
CIS	**240**	**320**	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	293	404	

Duplicate Blank Sample Date: 11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	**1300**	**430**	5.0
CIS	**380**	**430**	5.0
TRANS	**18**	ND	5.0
VC	**7**	**19**	2.0
TCA	ND	ND	5.0
Total VOCs	1,705	879	

Equipment Blank Sample Date: 11/22/2016
Sampling Events

Analyte in ppb	Nov 2016	Sep 2016	NYS Guidance Value
TCE	ND	ND	5.0
CIS	ND	ND	5.0
TRANS	ND	ND	5.0
VC	ND	ND	2.0
TCA	ND	ND	5.0
Total VOCs	ND	ND	

ND = Non-detect
NS = Not Sampled. No analysis performed during this sampling event.
Results expressed as parts per billion (ppb).
Bold results exceed NYSDEC TOGS 1.1.1 Class GA, June 1998 re-issue (MTBE = April 2000 Addendum Guidance Value)

Table 3 Historic Groundwater Analysis Results Summary
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

MONITORING WELLS

Monitoring Well Number	Total VOCs Nov 2016 (ppb)	Total VOCs Sep 2016 (ppb)	Total VOCs Jun 2016 (ppb)	Total VOCs Nov 2015 (ppb)	Total VOCs Aug 2015 (ppb)	Total VOCs Jun 2015 (ppb)	Total VOCs Mar 2015 (ppb)	Total VOCs Nov 2014 (ppb)	Total VOCs Sep 2014 (ppb)	Total VOCs Jun 2014 (ppb)	Total VOCs Mar 2014 (ppb)	Total VOCs Dec 2013 (ppb)	Total VOCs Jul 2013 (ppb)	Total VOCs Apr 2013 (ppb)	Total VOCs Dec 2012 (ppb)	Total VOCs Jun 2012 (ppb)	Total VOCs Mar 2012 (ppb)	Total VOCs Sep 2011 (ppb)	Total VOCs Jun 2011 (ppb)	Total VOCs Mar 2011 (ppb)	Total VOCs Dec 2010 (ppb)	Total VOCs Sep 2010 (ppb)	Total VOCs Jun 2010 (ppb)	Total VOCs Jul 2009 (ppb)	Total VOCs Feb 2009 (ppb)	Total VOCs Sep 2008 (ppb)	Total VOCs Jun 2008 (ppb)	Total VOCs Mar 2008 (ppb)	Total VOCs Sep 2007 (ppb)	Total VOCs May 2007 (ppb)	Total VOCs Oct 2006 (ppb)	Total VOCs Nov 2005 (ppb)	Total VOCs Oct 2004 (ppb)	Total VOCs Jul 2003 (ppb)	Total VOCs Aug 2002 (ppb)
MW-1	1,467	838	580	1,530	1,470	350	430	300	420	990	990	1,740	830	910	1,440	528	889	442	1,318.1	583	564	649	778	1107.16	677	860	705	1,463	1,481	2,046	1,769	1,128	1,250	2,879	768
MW-2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	ND	ND	ND	ND	ND	7.1	23
MW-3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	2.4	ND	ND	8.42	5.6	3.1	15
MW-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	1.8	3.8
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	3.41	ND	ND	5.13	6.7	7.3	14
MW-6	87	120	100	120	96	86	81	110	110	96	94	130	99	93	99	86.7	85.7	101	79	73.2	81.8	107	96	92.8	87.8	113	123	105	171	151	173	233	280	333	406
MW-7	110	62	83	49	130	58	ND	180	190	29	ND	ND	18	ND	ND	151.56	30.5	209.16	70.9	22.3	58.2	160.5	114.46	213	92.34	347.8	244	196.7	360	330.5	420	455.7	508	534	450
MW-8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	1.4
MW-9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	4.2
MW-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	ND	ND	ND	2.6
MW-11	646	445	550	1,060	630	444	500	451	375	450	710	880	510	570	790	498	617	508.7	722	623	588	630.7	765	625.9	790	437.3	564.9	1,023	398.6	1,189	2,600	1,101	2,355	34,169	4,647
MW-12	7.1	7.8	15.8	28.8	52	97	120	126	136	200	212	173	149.3	186.6	142	86.5	148.22	92.8	162.9	90.82	90.4	100	159.8	82	279.01	65.8	159	165.6	196.9	429	1,082	4,776	6,900	12,100	12,643
MW-13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	ND	2.02	ND	ND	ND	ND	31	315
MW-14	76	100	57	81	96	52	99	68	68	54	73	94	49	71	47	39.7	76.6	77.3	104.98	31.9	24.33	38.93	65.22	40.72	34.9	17.8	38.15	29.3	103.2	106.8	293.9	139.9	67	140	315
MW-15	11	23.8	11	9.9	14	8.1	9.8	32	31	6.1	ND	6.8	7	ND	12.9	26.26	6.25	32.46	16.18	6.92	16.85	62	22.93	64.8	4.9	113.3	77.3	18.2	149.6	60.4	149.9	271	320	258	730
MW-16	14	20	37	31	13	6.8	ND	5.2	9.4	21	24	20	8.4	24	18	4.36	12.2	6.07	23.1	28.9	7.21	2.53	ND	22	22.2	16.2	21.3	8.56	24.7	60.0	51.2	65.4	82	38	NA
MW-17	375	465	425	460	410	NS	336	394	410	339	167	420	400	21.3	430	381	260.1	449	225.2	26.7	48.1	312.3	232.1	228.8	4.41	728	599	610	903.0	777	1,011	1,006	1,154	810	NA
MW-18	10	26	6.9	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	16.6	2.33	28.7	13.9	6.43	17.9	40.77	27.5	196	13.07	238.6	115.2	56.0	719	442	392	375	460	159	NA
MW-19R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	ND	ND	ND	ND	ND	ND	2.67	ND	4.27	ND	13.7	10.57	ND	22.1	2.64	11.4	20.2	14	10*	NA
MW-20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	NA	NA
MW-21	17	39	8.7	20	20	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	141.8	NS	14.3	533	318	29	495.6	436	NA	NA
MW-X (DUP)	1,705	879	550	1,720	410	360	407	300	400	870	990	1,850	540	186.8	1,450	521	913	457	1,022.2	Sample loss*	588	611	264	598	678	902	648	12.41	888	437	1,350	1031.49	540.6	7.1	133.63
EB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	NS	NS	ND	ND	NS	ND	0.001

RECOVERY WELLS

Recovery Well Number	Total VOCs Nov 2016 (ppb)	Total VOCs Sep 2016 (ppb)	Total VOCs Jun 2016 (ppb)	Total VOCs Nov 2015 (ppb)	Total VOCs Aug 2015 (ppb)	Total VOCs Jun 2015 (ppb)	Total VOCs Mar 2015 (ppb)	Total VOCs Nov 2014 (ppb)	Total VOCs Sep 2014 (ppb)	Total VOCs Jun 2014 (ppb)	Total VOCs Mar 2014 (ppb)	Total VOCs Dec 2013 (ppb)	Total VOCs Jul 2013 (ppb)	Total VOCs Apr 2013 (ppb)	Total VOCs Dec 2012 (ppb)	Total VOCs Jun 2012 (ppb)	Total VOCs Mar 2012 (ppb)	Total VOCs Sep 2011 (ppb)	Total VOCs Jun 2011 (ppb)	Total VOCs Mar 2011 (ppb)	Total VOCs Dec 2010 (ppb)	Total VOCs Sep 2010 (ppb)	Total VOCs Jun 2010 (ppb)	Total VOCs Jul 2009 (ppb)	Total VOCs Feb 2009 (ppb)	Total VOCs Sep 2008 (ppb)	Total VOCs Jun 2008 (ppb)	Total VOCs Mar 2008 (ppb)	Total VOCs Sep 2007 (ppb)	Total VOCs May 2007 (ppb)	Total VOCs Oct 2006 (ppb)	Total VOCs Feb 2005 (ppb)	Total VOCs Oct 2004 (ppb)	Total VOCs Jul 2003 (ppb)	Total VOCs Aug 2002 (ppb)
DR-1	617	610	910	319	160	NS	21.7	63	55	75	132	87	73	82	43	29.38	673	166.5	154.5	250.1	355.5	442.5	60.3	392.28	260	724	864	530	2,043.5	1,106	573.4	8,000	NA	NA	NA
DR-2	137	218	215	199	187	291	259	162	224	231	207	302	256	293	19	229.9	305.3	206.1	240.93	267.75	152.3	213.52	255.2	198.24	223.79	206.6	284.3	154.4	288.1	350.1	549.2	2,003	NA	NA	NA	NA
DR-3	98	154	62	45	76	83	55	181	210	83	89	123	62	73	42	116.96	24.9	74.3	67.7	25.3	30.1	38.1	79.7	125.96	167.34	75.4	123.2	171.7	387.5	183	152.5	1,467	NA	NA	NA	NA
DR-4	79	95	63	94	110	71	147	156	148	96	64	68	79	37	90	122.6	ND	191.03	128.4	101.4	71.7	230.58	155.04	80.3	66.3	129.1	40.2	42.1	217.0	15.21	859.0	1,760	NA	NA	NA	NA
G-1	85	105.6	59.7	80.3	ND	68	146	101	105	90	78	96.2	69.1	55.8	52.6	68.55	65.58	67.52	55.81	67.02	48.8	30.5	108.3	164	126.6	120.4	170.5	186	225.0	153.3	200.8	544	NA	NA	NA	NA
G-2	NS	ND	NS	NS	28	NS	48	34	37	52	14	68	81	50	132.2	75.3	41.9	29.8	65.6	47.2	51.8	6.02	8.37	56.2	231	28.3	39.1	80.92	59.3	174.92	283.4	385	NA	NA	NA	NA
G-3	293	404	420	262	370	NS	NS	NS	NS	NS	82	NS	11	25	41.6	147.3	44.2	296.2	224.7	209.8	159.3	233.2	277.8	344	403	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NS: This well not included in this sampling event.
ND = Not Detected, results less than Method Detection Limit.
Impacted north property line wells: MW-5, MW-6, MW-7, MW-16, MW-17, MW-21
All compounds are measured in parts per billion (ppb).
VOC - Volatile Organic Compounds.
DUP - Duplicate Sample

Table 4 Percent Reductions in Total Groundwater VOCs
Gowanda Day Habilitation Center
4 Industrial Place, Gowanda, New York
VCA # V-00463-9

The Groundwater Treatment System was activated in May 2005

Monitoring Well	% Reduction 2002 to Nov 2016	% Reduction 2002 to Sep 2016	% Reduction 2002 to Jun 2016	% Reduction 2002 to Nov 2015	% Reduction 2002 to Aug 2015	% Reduction 2002 to Jun 2015	% Reduction 2002 to Mar 2015	% Reduction 2002 to Nov 2014	% Reduction 2002 to Sep 2014	% Reduction 2002 to Jun 2014	% Reduction 2002 to Mar 2014	% Reduction 2002 to Dec 2013	% Reduction 2002 to Jul 2013	% Reduction 2002 to Apr 2013	% Reduction 2002 to Dec 2012	% Reduction 2002 to Jun 2012	% Reduction 2002 to Mar 2012	% Reduction 2002 to Sep 2011	% Reduction 2002 to Jun 2011	% Reduction 2002 to Mar 2011	% Reduction 2002 to Dec 2010	% Reduction 2002 to Sep 2010	% Reduction 2002 to Jun 2010	% Reduction 2002 to Jan 2010	% Reduction 2002 to Jul 2009	% Reduction 2002 to Feb 2009	% Reduction 2002 to Sep 2008	% Reduction 2002 to Jun 2008	% Reduction 2002 to Mar 2008	% Reduction 2002 to Nov 2005
MW-1[1]	-88.5%	-9.1%	24.5%	-99.2%	-91.4%	54.4%	44.0%	60.9%	45.3%	-28.9%	-28.9%	-126.6%	-8.1%	-19.5%	-87.5%	31.3%	-15.8%	42.4%	-71.6%	24.1%	26.6%	15.5%	-1.3%	15.8%	-44.2%	11.8%	-12.0%	8.2%	-90.5%	-46.9%
MW-2	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.6%	Not Sampled	99.6%	99.6%
MW-3	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.3%	99.3%
MW-4	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.00%	100.0%	100.0%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%
MW-5	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	99.3%	63.4%
MW-6	78.6%	70.4%	75.4%	70.4%	76.4%	78.8%	80.0%	72.9%	72.9%	76.4%	76.8%	68.0%	75.6%	77.1%	75.6%	78.6%	78.9%	75.1%	80.5%	82.0%	79.9%	73.6%	76.4%	81.3%	77.1%	78.4%	72.2%	69.7%	74.1%	42.6%
MW-7	75.6%	86.2%	81.6%	89.1%	71.1%	87.1%	100.0%	60.0%	57.8%	93.6%	100.0%	100.0%	96.0%	100.0%	100.0%	66.3%	93.2%	53.5%	84.2%	95.0%	87.1%	64.3%	74.6%	96.6%	52.7%	79.5%	22.7%	45.8%	56.3%	-1.3%
MW-8	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	92.9%	92.9%
MW-9	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	97.6%	97.6%
MW-10	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	96.2%	96.2%
MW-11	86.1%	90.4%	88.2%	77.2%	86.4%	90.4%	89.2%	90.3%	91.9%	90.3%	84.7%	81.1%	89.0%	87.7%	83.0%	89.3%	86.7%	89.1%	84.5%	86.6%	87.3%	86.4%	83.5%	83.3%	86.5%	83.0%	90.6%	87.8%	78.0%	76.3%
MW-12	99.9%	99.9%	99.9%	99.8%	99.6%	99.2%	99.1%	99.0%	98.4%	98.4%	98.3%	98.6%	98.8%	98.5%	98.9%	99.3%	98.8%	99.3%	98.7%	99.3%	99.3%	99.2%	98.7%	98.1%	99.4%	97.8%	99.5%	98.7%	98.7%	62.2%
MW-13	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	100.0%	Not Sampled	100.0%	100.0%
MW-14	75.9%	68.3%	81.9%	74.3%	69.5%	83.5%	68.6%	78.4%	78.4%	82.9%	76.8%	70.2%	84.4%	77.5%	85.1%	87.4%	75.7%	75.5%	66.7%	89.9%	92.3%	87.6%	79.3%	85.9%	87.1%	88.9%	94.3%	87.9%	90.7%	55.6%
MW-15	98.5%	96.7%	98.5%	98.6%	98.1%	98.9%	98.7%	95.6%	95.8%	99.2%	100.0%	99.1%	99.0%	100.0%	98.2%	96.4%	99.1%	95.6%	97.8%	99.1%	97.7%	91.5%	96.9%	98.3%	91.1%	99.3%	84.5%	89.4%	97.5%	62.9%
MW-16*	72.7%	60.9%	27.7%	39.5%	74.6%	86.7%	100.0%	89.8%	81.6%	59.0%	53.1%	60.9%	77.9%	36.8%	52.6%	88.5%	67.9%	84.0%	39.2%	23.9%	81.0%	93.3%	99.7%	94.2%	42.1%	41.6%	57.4%	43.9%	77.5%	-72.1%
MW-17*	62.9%	54.0%	58.0%	54.5%	59.4%	Not Sampled	66.8%	61.0%	59.4%	66.5%	83.5%	58.5%	50.6%	97.4%	46.9%	53.0%	67.9%	44.6%	72.2%	96.7%	94.1%	61.4%	71.3%	97.7%	71.8%	99.5%	10.1%	26.0%	24.7%	-24.2%
MW-18:*	97.4%	93.4%	98.2%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	Not Sampled	100.0%	100.0%	100.0%	89.6%	98.5%	81.9%	91.3%	96.0%	88.7%	74.4%	82.7%	96.0%	-23.3%	91.8%	-50.0%	27.6%	64.8%	-135.8%
MW-19 R*	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75.0%	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%	73.3%	99.0%	99.0%	57.3%	99.0%	-36.7%	-5.7%	99.0%	-102.0%
MW-20**	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%
MW-21**	34.6%	-50.0%	66.5%	23.1%	23.1%	61.5%	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	67.5%	Not Sampled	96.7%	-13.7%
* Well installed 2003																														
** Well Installed 2004																														
Site-Wide reduction:	71.0%	68.7%	78.6%	66.2%	69.1%	87.7%	88.2%	85.2%	83.2%	79.8%	80.3%	67.5%	81.8%	81.2%	71.3%	82.9%	80.7%	79.7%	72.2%	83.7%	86.9%	78.3%	81.4%	87.9%	61.1%	82.1%	56.0%	59.7%	78.5%	35.7%
Impacted Groundwater Plume Area Only:	61.1%	69.6%	76.0%	58.1%	58.6%	84.6%	80.8%	77.3%	75.0%	72.3%	73.9%	82.2%	73.2%	77.3%	62.5%	75.2%	73.1%	71.9%	64.1%	84.1%	83.0%	72.5%	72.4%	82.1%	65.2%	79.8%	57.7%	64.2%	53.7%	28.4%

Plume Area = MW-1, MW-11, MW-12, MW-14, MW-15, MW-7, MW-17, MW-6
% reduction = percent reduction in total Volatile Organic Compounds (VOCs) since groundwater monitoring was initiated
†Negative values indicate an increase in total VOCs since monitoring commenced in 2002. The percent increase in total groundwater VOCs is shown below for MW-1.

Recovery Well	% Reduction 2002 to Nov 2016	% Reduction 2002 to Sep 2016	% Reduction 2002 to Jun 2016	% Reduction 2002 to Nov 2015	% Reduction 2002 to Aug 2015	% Reduction 2002 to Jun 2015	% Reduction 2002 to Mar 2015	% Reduction 2002 to Nov 2014	% Reduction 2002 to Sep 2014	% Reduction 2002 to Jun 2014	% Reduction 2002 to Mar 2014	% Reduction 2002 to Dec 2013	% Reduction 2002 to Jul 2013	% Reduction 2002 to Apr 2013	% Reduction 2002 to Dec 2012	% Reduction 2002 to Jun 2012	% Reduction 2002 to Mar 2012	% Reduction 2002 to Sep 2011	% Reduction 2002 to Jun 2011	% Reduction 2002 to Mar 2011	% Reduction 2002 to Dec 2010	% Reduction 2002 to Sep 2010	% Reduction 2002 to Jun 2010	% Reduction 2002 to Jan 2010	% Reduction 2002 to Jul 2009	% Reduction 2002 to Feb 2009	% Reduction 2002 to Sep 2008	% Reduction 2002 to Jun 2008	% Reduction 2002 to Mar 2008
DR-1	-7.6%	-6.4%	-58.7%	44.4%	72.1%	Not Sampled	96.2%	89.0%	90.4%	86.9%	77.0%	84.8%	99.1%	99.0%	99.5%	99.8%	91.6%	97.9%	98.1%	96.9%	95.6%	94.5%	99.2%	98.0%	95.1%	96.8%	91.0%	89.2%	93.4%
DR-2	75.1%	60.3%	60.9%	63.8%	66.0%	47.0%	52.8%	70.5%	59.2%	58.0%	62.3%	45.0%	87.2%	85.4%	99.1%	88.5%	83.9%	89.7%	88.0%	86.6%	92.4%	89.3%	87.3%	90.6%	90.1%	88.8%	89.7%	85.8%	92.3%
DR-3	35.7%	-1.0%	59.3%	70.5%	50.2%	45.6%	63.9%	-18.7%	-37.7%	45.6%	41.6%	19.3%	95.8%	95.1%	97.2%	92.1%	98.3%	95.0%	95.4%	98.3%	98.0%	97.4%	94.6%	91.6%	91.5%	88.7%	94.9%	91.7%	88.4%
DR-4	90.8%	88.9%	92.7%	89.1%	87.2%	91.7%	82.9%	81.8%	82.8%	88.8%	92.5%	90.8%	95.5%	97.9%	94.9%	93.1%	100.0%	89.2%	92.7%	94.3%	95.9%	86.9%	91.2%	95.4%	95.5%	96.2%	92.7%	97.7%	97.6%
G-1	57.7%	47.4%	92.7%	60.0%	100.0%	66.1%	27.3%	49.8%	47.7%	55.0%	61.3%	65.6%	87.3%	89.8%	90.3%	87.4%	88.0%	87.6%	89.8%	87.7%	91.0%	94.4%	80.1%	76.0%	69.9%	76.7%	77.9%	68.7%	65.8%
G-2	Not Sampled	100.0%	Not Sampled	Not Sampled	90.1%	Not Sampled	83.1%	88.0%	86.9%	81.7%	95.1%	71.4%	79.0%	87.0%	65.7%	80.4%	89.1%	92.3%	83.0%	87.7%	86.5%	98.4%	97.8%	98.5%	85.4%	40.0%	92.6%	89.8%	79.0%
G-3	27.3%	-0.2%	-4.2%	35.0%	8.2%	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	79.7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Overall Reduction	46.5%	41.3%	40.4%	60.4%	67.7%	62.6%	67.7%	60.1%	54.9%	69.3%	72.8%	62.8%	90.7%	92.3%	91.1%	90.2%	91.8%	91.9%	91.1%	91.9%	93.2%	93.5%	91.7%	91.7%	87.9%	81.2%	89.8%	87.2%	86.1%

*Sampling of recovery wells initiated in 2005

Monitoring Well	% Increase 2002 to Nov 2016	% Increase 2002 to Sep 2016	% Increase 2002 to Jun 2016	% Increase 2002 to Nov 2015	% Increase 2002 to Aug 2015	% Increase 2002 to Jun 2015	% Increase 2002 to Mar 2015	% Increase 2002 to Nov 2014	% Increase 2002 to Sep 2014	% Increase 2002 to Jun 2014	% Increase 2002 to Mar 2014	% Increase 2002 to Dec 2013	% Increase 2002 to Jul 2013	% Increase 2002 to Apr 2013	% Increase 2002 to Dec 2012		% Increase 2002 to Mar 2012		% Increase 2002 to Jun 2011				% Increase 2002 to Jun 2010		% Increase 2002 to Jul 2009		% Increase 2002 to Sep 2008		% Increase 2002 to Mar 2008	% Increase 2002 to Nov 2005
MW-1†	47.0%	8.4%	NA	49.8%	47.8%	NA	NA	NA	NA	22.4%	22.4%	55.9%	7.5%	16.3%	46.7%	NA	13.6%	NA	41.7%	NA	NA	NA	100.0%	NA	30.6%	NA	100.0%	NA	47.5%	31.9%
DR-1†	7.1%	6.0%	37.0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DR-3†	NA	1.0%	NA	NA	NA	NA	NA	15.7%	27.4%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
G-3	NA	0.2%	4.0%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

†Negative values indicate an increase in total VOCs since monitoring commenced in 2002. The percent increase in total groundwater VOCs is shown above for MW-1 and DR-3.

FIGURES

DASNY

Gowanda Day Habilitation Center

4 Industrial Place
Gowanda, NY

Bergmann associates
architects // engineers // planners

Figure 1

November 2016 Groundwater Contour Map

MW-21
766
MW-19R
MW-18
767
767
MW-16
MW-7
G-3
MW-17
MW-6
MW-5
MW-20
G-2
G-1
768
768
MW-15
DR-4
MW-14
DR-3
769
770
MW-12
MW-13
MW-4
DR-2
MW-8
771
DR-1
MW-3
772
MW-11
MW-1
MW-2
MW-9
771
770
MW-10
Thatcher Brook

0 30 60 90 120
Feet

N

I:\DASNY\006974.85 DASNY - GOWANDA 2016 O & M\4.0 Dwgs\4.10 GIS\Figure_1_2016_Q4.mxd

DASNY

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Gowanda, NY

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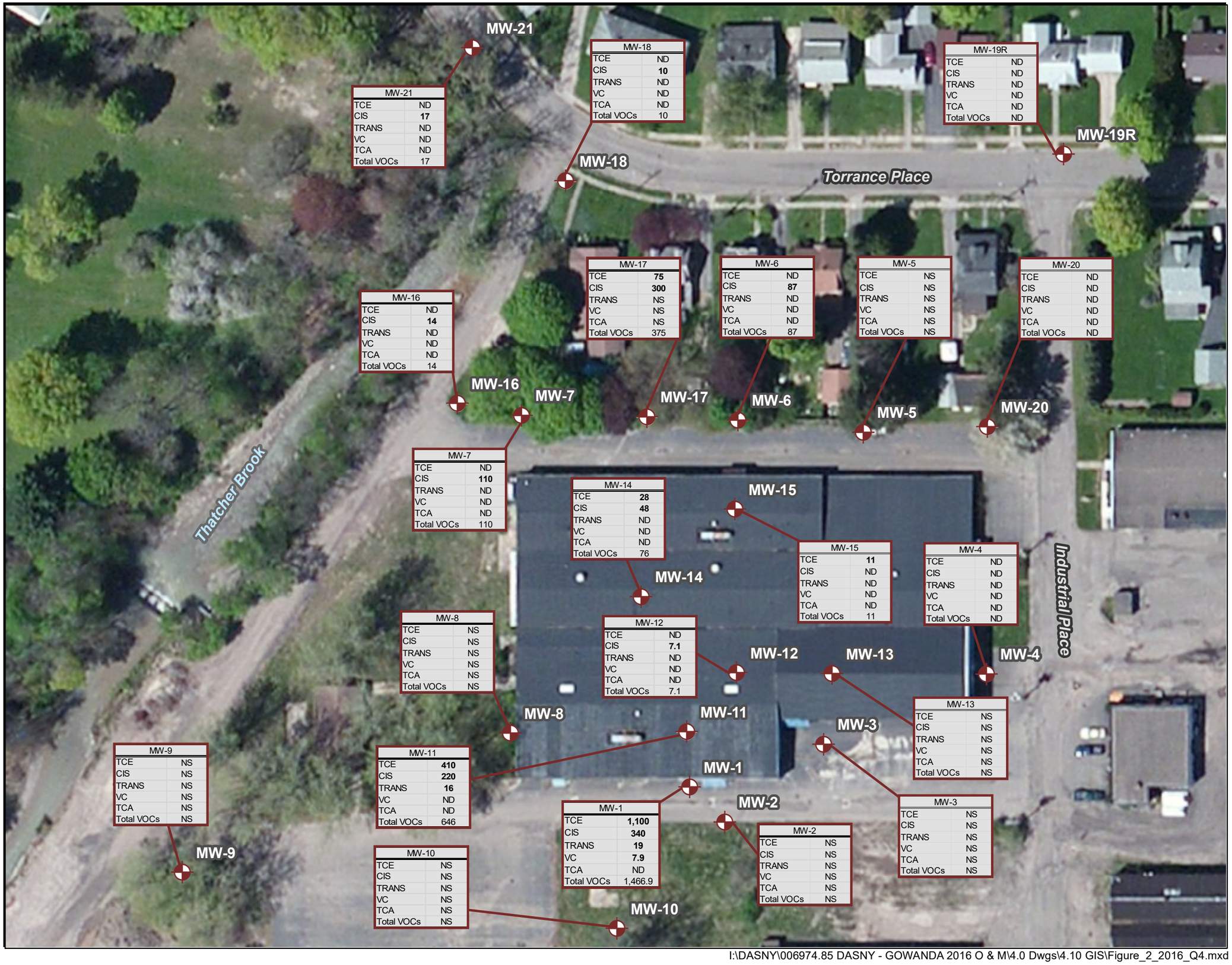
Figure 2

November 2016 Distribution of Groundwater Analytical Results: Monitoring Wells



I:\DASNY\006974.85 DASNY - GOWANDA 2016 O & M\4.0 Dwgs\4.10 GIS\Figure_2_2016_Q4.mxd

DASNY

Gowanda Day Habilitation Center

4 Industrial Place
Gowanda, NY

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Figure 3

November 2016 Distribution of Groundwater Analytical Results: Recovery Wells

0 25 50 75 100
Feet

N

I:\DASNY\006974.85 DASNY - GOWANDA 2016 O & M\4.0 Dwgs\4.10 GIS\Figure_3_2016_Q4.mxd

CHARTS

Chart 1: Groundwater Recovery Wells Summary

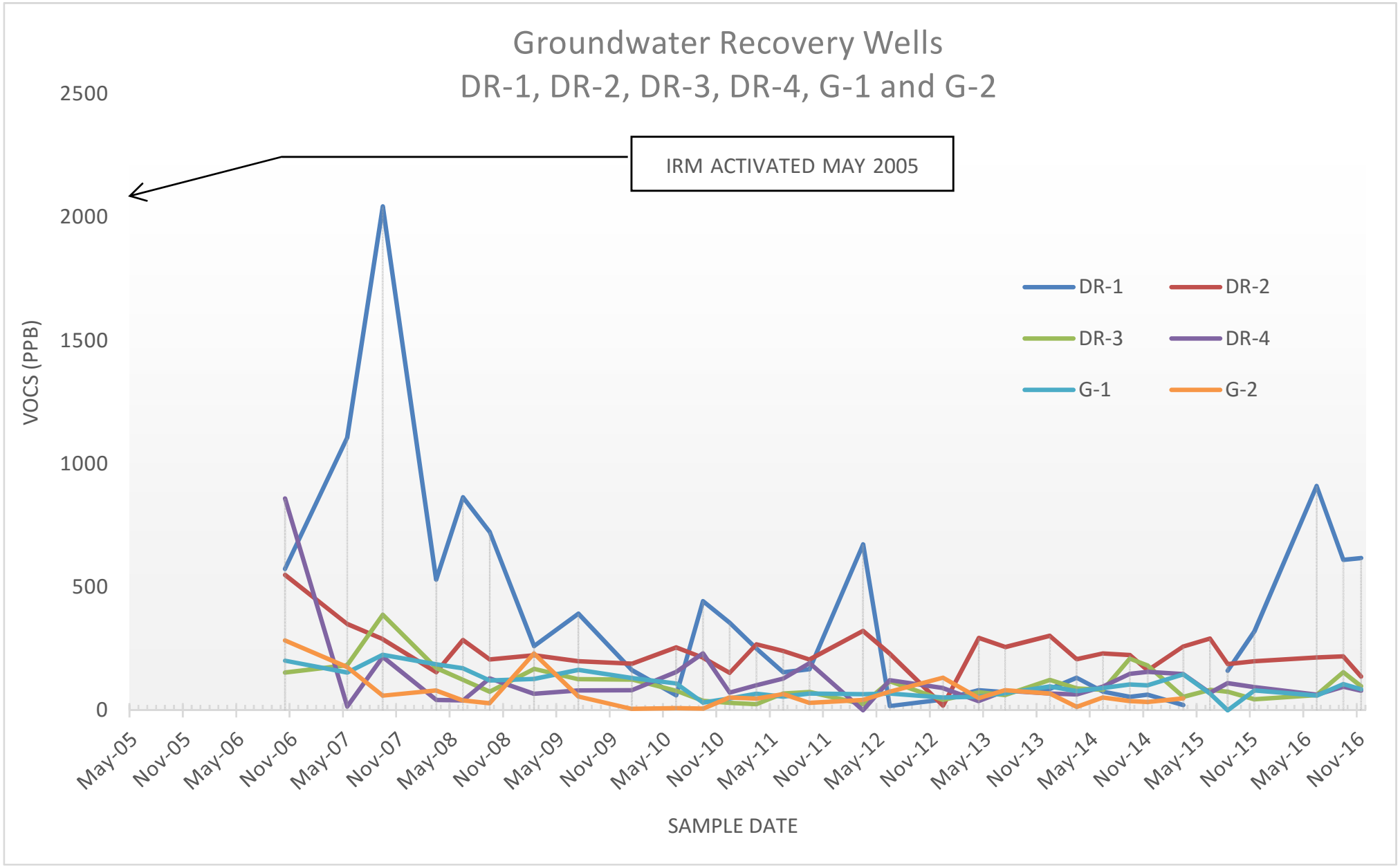


Chart 2: MW-1, DR-1 and MW-11 Groundwater Volatile Organic Compound Concentrations

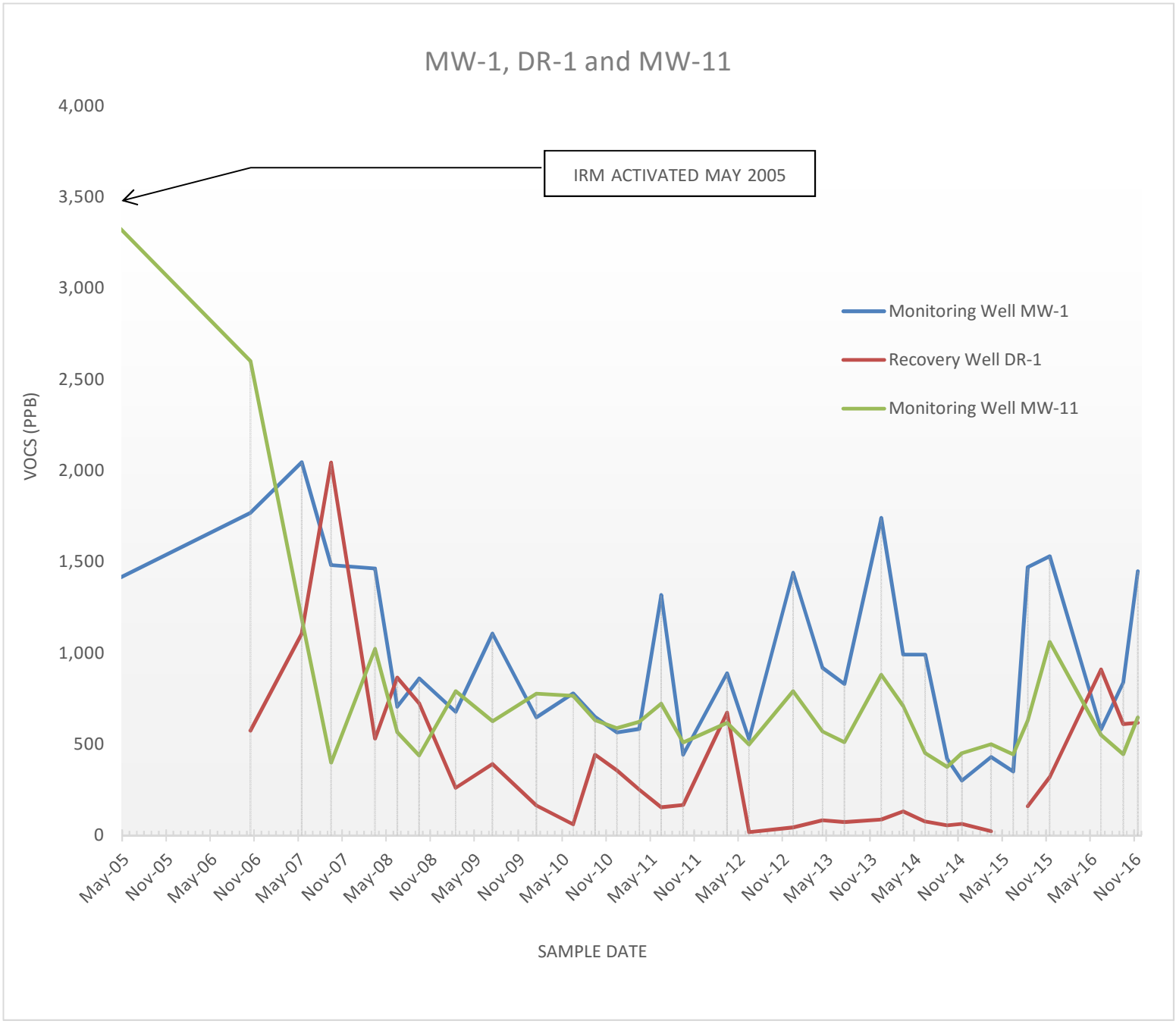


Chart 3: MW-12 and DR-2 Groundwater Volatile Organic Compound Concentrations

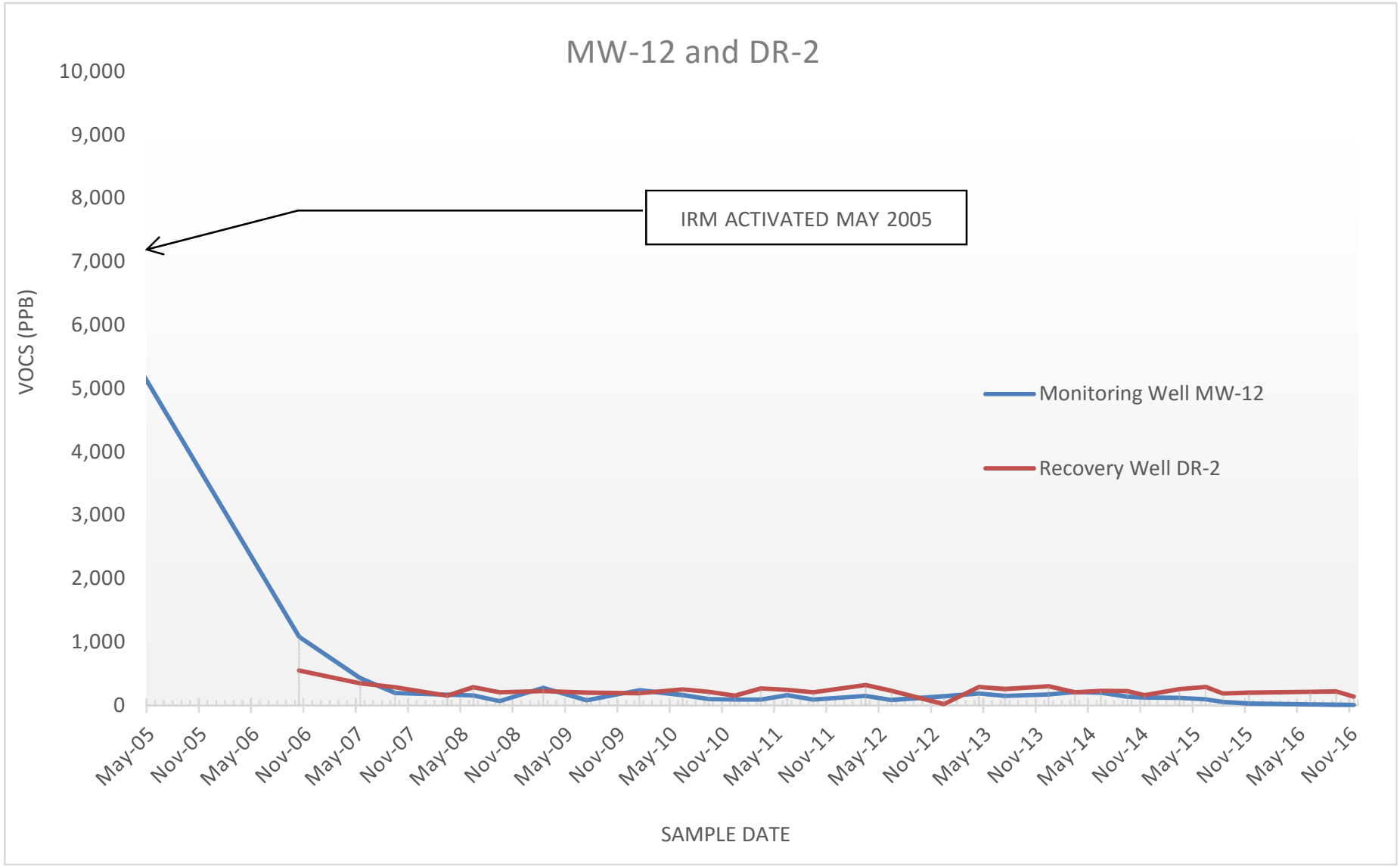


Chart 4: MW-14 and DR-3 Groundwater Volatile Organic Compound Concentrations

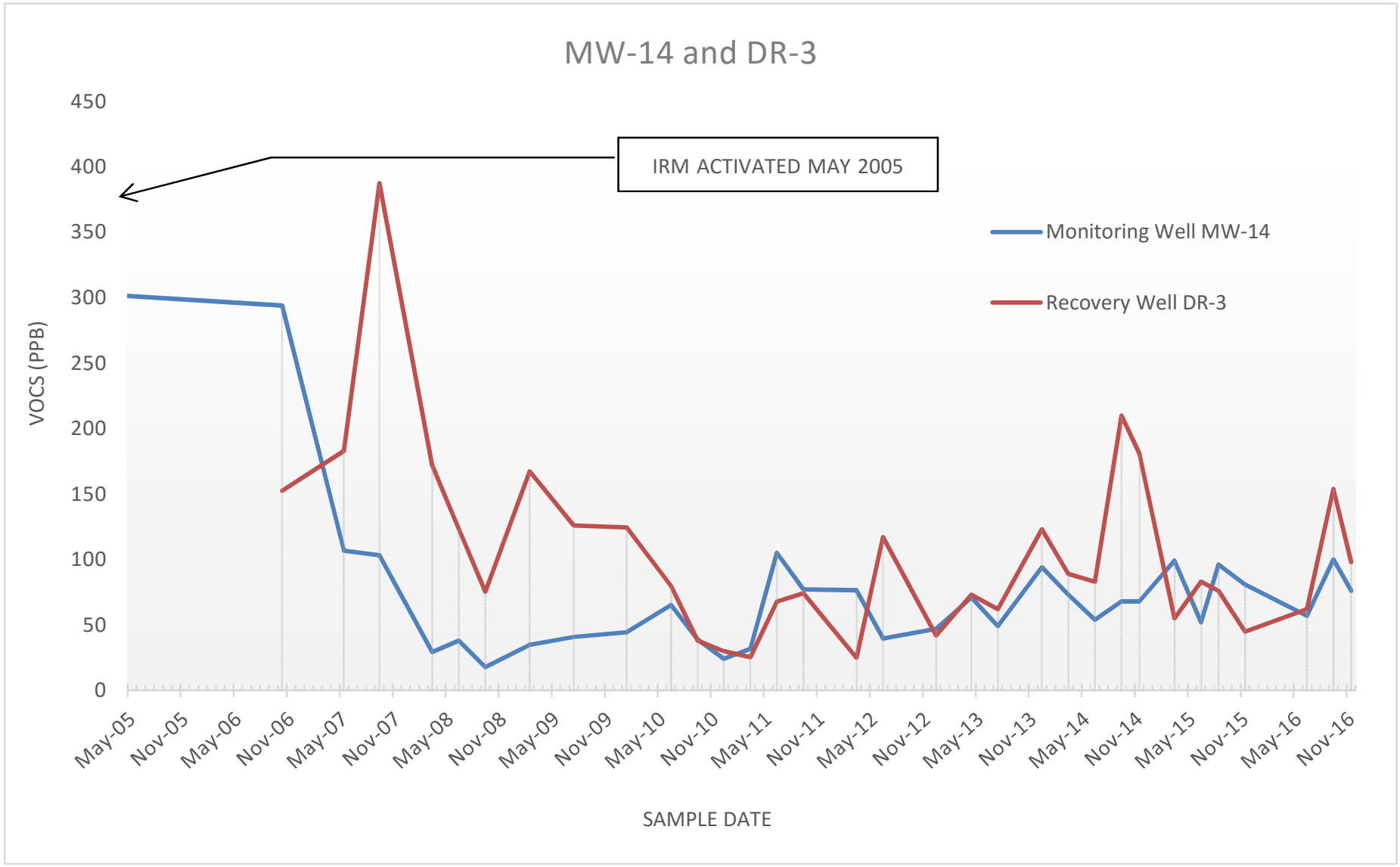


Chart 5: MW-15 and DR-4 Groundwater Volatile Organic Compound Concentrations

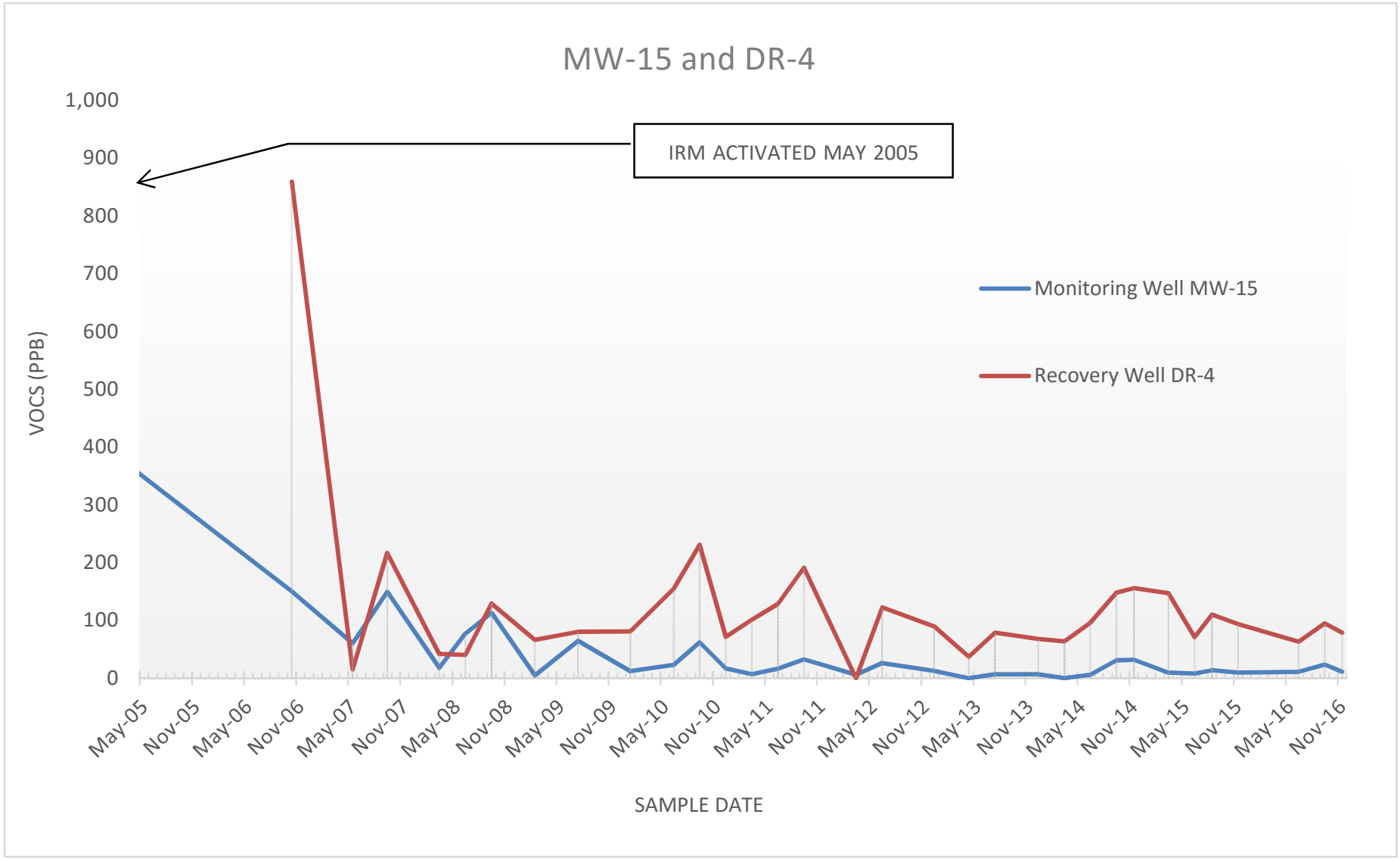


Chart 6: MW-17 and G-1 Groundwater Volatile Organic Compound Concentrations

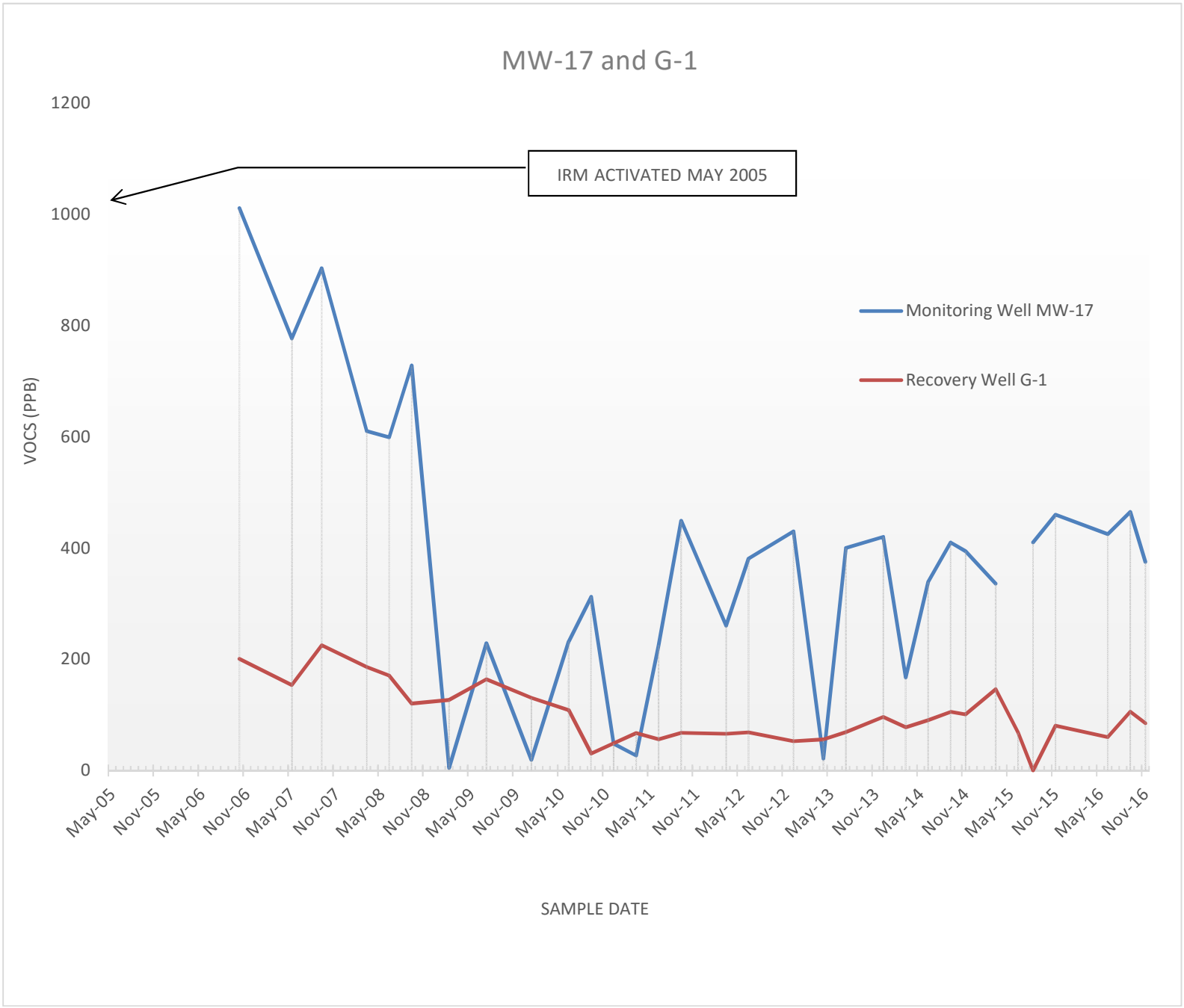


Chart 7: MW-7 and G-2 Groundwater Volatile Organic Compound Concentrations

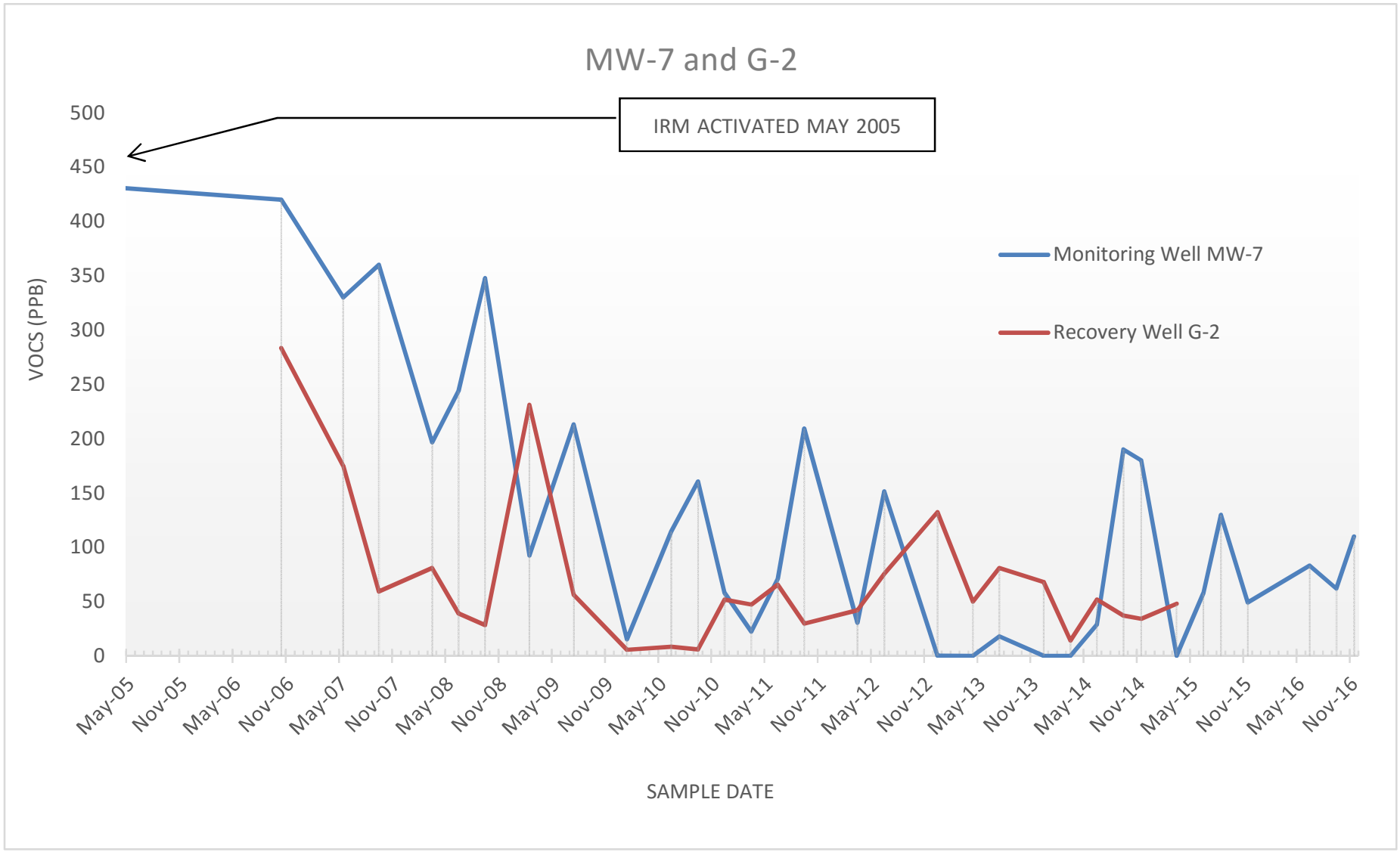
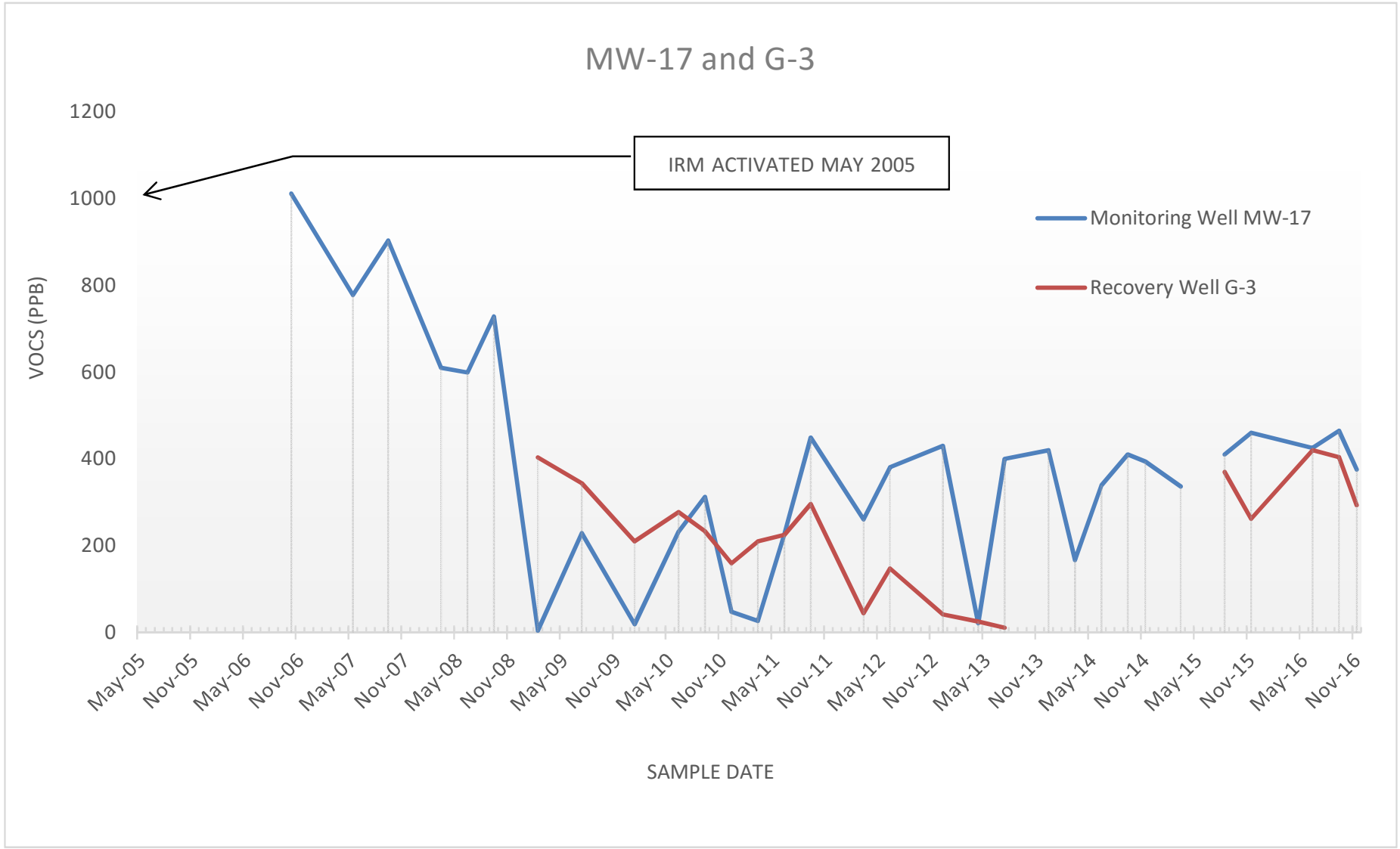


Chart 8: MW-17 and G-3 Groundwater Volatile Organic Compound Concentrations



APPENDIX A

LABORATORY ANALYTICAL RESULTS REPORT
NOVEMBER 2016 SAMPLING EVENT

December 02, 2016 Service Request No:R1612386

Ms. Megan Borruso
Bergmann Associates, Incorporated
200 First Federal Plaza
28 East Main St.
Rochester, NY 14614

Laboratory Results for: Gowanda Day Hab Center

Dear Ms.Borruso,

Enclosed are the results of the sample(s) submitted to our laboratory November 22, 2016
For your reference, these analyses have been assigned our service request number **R1612386.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Brady Kalkman
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
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1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

Client: Bergmann Associates, Incorporated
Project: Gowanda Day Hab Center/6974.86
Sample Matrix: Water

Service Request:R1612386
Date Received:11/22/16

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt

Twenty four water samples were received for analysis at ALS Environmental on 11/22/2016. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Volatile Organic Analyses:

No significant anomalies were noted with this analysis.

Approved by _____ Date 12/2/2016

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-15	Lab ID: R1612386-004					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Trichloroethene (TCE)	11		0.22	5.0	ug/L	8260C

CLIENT ID: MW-14	Lab ID: R1612386-005					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	48		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	28		0.22	5.0	ug/L	8260C

CLIENT ID: MW-18	Lab ID: R1612386-006					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	9.8		0.30	5.0	ug/L	8260C

CLIENT ID: MW-21	Lab ID: R1612386-007					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	17		0.30	5.0	ug/L	8260C

CLIENT ID: MW-16	Lab ID: R1612386-008					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	14		0.30	5.0	ug/L	8260C

CLIENT ID: MW-7	Lab ID: R1612386-009					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	110		0.30	5.0	ug/L	8260C

CLIENT ID: MW-6	Lab ID: R1612386-010					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	87		0.30	5.0	ug/L	8260C

CLIENT ID: MW-12	Lab ID: R1612386-011					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	7.1		0.30	5.0	ug/L	8260C

CLIENT ID: MW-11	Lab ID: R1612386-012					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	220	D	1.5	25	ug/L	8260C
trans-1,2-Dichloroethene	16		0.33	5.0	ug/L	8260C
Trichloroethene (TCE)	410		1.1	25	ug/L	8260C

CLIENT ID: MW-1	Lab ID: R1612386-013					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	340	D	3.0	50	ug/L	8260C
trans-1,2-Dichloroethene	19		0.33	5.0	ug/L	8260C
Trichloroethene (TCE)	1100	D	2.2	50	ug/L	8260C
Vinyl Chloride	7.9		0.32	5.0	ug/L	8260C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-X	Lab ID: R1612386-014					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	380	D	3.0	50	ug/L	8260C
trans-1,2-Dichloroethene	18		0.33	5.0	ug/L	8260C
Trichloroethene (TCE)	1300	D	2.2	50	ug/L	8260C
Vinyl Chloride	7.0		0.32	5.0	ug/L	8260C

CLIENT ID: DR-1	Lab ID: R1612386-015					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	97		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	520	D	1.1	25	ug/L	8260C

CLIENT ID: DR-2	Lab ID: R1612386-016					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	100		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	37		0.22	5.0	ug/L	8260C

CLIENT ID: DR-3	Lab ID: R1612386-017					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	67		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	31		0.22	5.0	ug/L	8260C

CLIENT ID: DR-4	Lab ID: R1612386-018					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	45		0.30	5.0	ug/L	8260C
Trichloroethene (TCE)	34		0.22	5.0	ug/L	8260C

CLIENT ID: G-1	Lab ID: R1612386-020					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	85		0.30	5.0	ug/L	8260C

CLIENT ID: G-3	Lab ID: R1612386-021					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	240		0.60	10	ug/L	8260C
Trichloroethene (TCE)	53		0.44	10	ug/L	8260C

CLIENT ID: MW-17	Lab ID: R1612386-022					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	300		0.60	10	ug/L	8260C
Trichloroethene (TCE)	75		0.44	10	ug/L	8260C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Bergmann Associates, Incorporated **Service Request:**R1612386
Project: Gowanda Day Hab Center/6974.86

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1612386-001	MW-4	11/21/2016	1201
R1612386-002	MW-20	11/21/2016	1248
R1612386-003	MW-19R	11/21/2016	1315
R1612386-004	MW-15	11/21/2016	1422
R1612386-005	MW-14	11/21/2016	1450
R1612386-006	MW-18	11/21/2016	1520
R1612386-007	MW-21	11/21/2016	1550
R1612386-008	MW-16	11/21/2016	1620
R1612386-009	MW-7	11/21/2016	1650
R1612386-010	MW-6	11/21/2016	1715
R1612386-011	MW-12	11/22/2016	0800
R1612386-012	MW-11	11/22/2016	0820
R1612386-013	MW-1	11/22/2016	0940
R1612386-014	MW-X	11/22/2016	0940
R1612386-015	DR-1	11/22/2016	1118
R1612386-016	DR-2	11/22/2016	1141
R1612386-017	DR-3	11/22/2016	1212
R1612386-018	DR-4	11/22/2016	1231
R1612386-019	EQUIPMENT BLANK	11/22/2016	1200
R1612386-020	G-1	11/22/2016	1300
R1612386-021	G-3	11/22/2016	1315
R1612386-022	MW-17	11/22/2016	1330
R1612386-024	TRIP BLANK	11/22/2016	1315

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

41933

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 3

Project Name: Gowanda Day Hab Center	Project Number: 6974.86
Project Manager: M. Borruso	Report CC:
Company/Address: Bergmann Associates 280 East Broad Street Rochester, NY 14604	
Phone #	Email: mborruso@bergmannpc.com
Sampler's Signature: Megan E. Borruso	Sampler's Printed Name: Megan E. Borruso

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	SITE SPECIFIC
MW-4		11/21/2016	1201	Aq GW	3	X							
MW-20		11/21/2016	1248	Aq GW	3	X							
MW-19R		11/21/2016	1315	Aq GW	3	X							
MW-15		11/21/2016	1422	Aq GW	3	X							
MW-14		11/21/2016	1450	Aq GW	3	X							
MW-18		11/21/2016	1520	Aq GW	3	X							
MW-21		11/21/2016	1550	Aq GW	3	X							
MW-16		11/21/2016	1620	Aq GW	3	X							
MW-7		11/21/2016	1650	Aq GW	3	X							
MW-6		11/21/2016	1715	Aq GW	3	X							
MW-12		11/22/2016	0800	Aq GW	3	X							

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED: New York

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
STANDARD TAT
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
NYSDEC EQUIS
Edata X Yes _____ No

INVOICE INFORMATION
PO # 6974.86
BILL TO: Bergmann
280 East Broad St.
Rochester, NY 14604

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Megan E. Borruso	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Megan E. Borruso	Printed Name: Samuel Wirt	Printed Name:	Printed Name:	Printed Name:	
Firm: Bergmann Associates	Firm: ALS	Firm:	Firm:	Firm:	
Date/Time: 11/22/2016 1750	Date/Time: 11/22/16 1750	Date/Time:	Date/Time:	Date/Time:	

R1612386 5
Bergmann Associates, Incorporated
Gowanda

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

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1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 2 OF 3

Project Name	Project Number
Gowanda Day Hab Center	6974.86
Project Manager	**Report CC**
M. Borruso	
Company/Address	
Bergmann Associates 280 East Broad Street Rochester, NY 14604	
Phone #	**Email**
	mborruso@bergmannpc.com
Sampler's Signature	**Sampler's Printed Name**
Megan E. Borruso	Megan E. Borruso

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	SITE SPECIFIC	REMARKS/ ALTERNATE DESCRIPTION
MW-11		11/22/2016	0820	Aq GW	3	X								
MW-1		11/22/2016	0940	Aq GW	3	X								
MW-X		11/22/2016	0940	Aq GW	3	X								
DR-1		11/22/2016	1118	Aq GW	3	X								
DR-2		11/22/2016	1141	Aq GW	3	X								
DR-3		11/22/2016	1212	Aq GW	3	X								
DR-4		11/22/2016	1231	Aq GW	3	X								
EQUIPMENT BLANK		11/22/2016	1200	W	3	X								
G-1		11/22/2016	1300	Aq GW	3	X								
G-3		11/22/2016	1315	Aq GW	3	X								
MW-17		11/22/2016	1330	Aq GW	3	X								

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
STANDARD TAT
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
NYSDEC EQUIS
Edata X Yes _____ No

INVOICE INFORMATION
PO # 6974.86
BILL TO: Bergmann
280 East Broad St.
Rochester, NY 14604

STATE WHERE SAMPLES WERE COLLECTED New York

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Megan E. Borruso					
Signature: Megan E. Borruso	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Bergmann Associates	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: 11/22/2016 1750	Firm: ALS	Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time: 11/22/16/ 1750	Date/Time:	Date/Time:	Date/Time:	Date/Time:

R1612386 5
Bergmann Associates, Incorporated
Gowanda

Distribution: White - Lab Copy; Yellow - Return to Originator

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

41931

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 3 OF 3

Project Name: Gowanda Day Hab Center	Project Number: 6974.86
Project Manager: M. Borruso	Report CC:
Company/Address: Bergmann Associates 280 East Broad Street Rochester, NY 14604	
Phone #	Email: mborruso@bergmannpc.com
Sampler's Signature: Megan E Borruso	Sampler's Printed Name: Megan E. Borruso

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP SPECIFIC SITE	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)
MW-17		11/22/2016	1330	AqGW	3	X						
TRIP BLANK		11/18/2016	1315	W	3	X						

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED: New York

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
STANDARD TAT
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
___ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
NYSDEC EQUIS
Edata X Yes ___ No

INVOICE INFORMATION
PO # 6974.86
BILL TO: Bergmann
280 East Broad St
Rochester, NY 14604

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Megan E Borruso	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Megan E. Borruso	Printed Name: Jamie Ward	Printed Name:	Printed Name:	Printed Name:	
Firm: Bergmann Associates	Firm: ALS	Firm:	Firm:	Firm:	
Date/Time: 11/22/2016 1750	Date/Time: 11/22/16 1750	Date/Time:	Date/Time:	Date/Time:	

R1612386 5
Bergmann Associates, Incorporated
Gowanda

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservation Check Form

Project/Client Bergman Assc. Folder Number _____.

Cooler received on 11/22/16 by: DH **COURIER:** ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	(Y) NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: **Wet Ice Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as:	Bulk Encore 5035set (NA)

8. Temperature Readings Date: 11/22/16 Time: 1755 ID: ~~IR#7~~ IR#8 From: Temp Blank Sample Bottle

Observed Temp (°C)	1.5°						
Correction Factor (°C)	+0.0						
Corrected Temp (°C)	1.5°						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-007 by DH on 11/22/16 at 1755
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown: Date: 11/23/16 Time: 0903 by: @

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
2. Did all bottle labels and tags agree with custody papers? (YES) NO
3. Were correct containers used for the tests indicated? (YES) NO
4. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
5. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (N/A)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**	4115022					

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 6-195-001

Other Comments:

Headspace: Equip blank (3 vials)

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% (25% for CLP) difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86		

Sample Name:	MW-4	**Date Collected:**	11/21/16
Lab Code:	R1612386-001	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	MW-20	**Date Collected:**	11/21/16
Lab Code:	R1612386-002	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	MW-19R	**Date Collected:**	11/21/16
Lab Code:	R1612386-003	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	MW-15	**Date Collected:**	11/21/16
Lab Code:	R1612386-004	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	MW-14	**Date Collected:**	11/21/16
Lab Code:	R1612386-005	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86		

Sample Name:	MW-18	**Date Collected:**	11/21/16
Lab Code:	R1612386-006	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	MW-21	**Date Collected:**	11/21/16
Lab Code:	R1612386-007	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	MW-16	**Date Collected:**	11/21/16
Lab Code:	R1612386-008	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	MW-7	**Date Collected:**	11/21/16
Lab Code:	R1612386-009	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	MW-6	**Date Collected:**	11/21/16
Lab Code:	R1612386-010	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86		

Sample Name:	MW-12	**Date Collected:**	11/22/16
Lab Code:	R1612386-011	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	MW-11	**Date Collected:**	11/22/16
Lab Code:	R1612386-012	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL
8260C		BALLGEIER

Sample Name:	MW-1	**Date Collected:**	11/22/16
Lab Code:	R1612386-013	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL
8260C		BALLGEIER

Sample Name:	MW-X	**Date Collected:**	11/22/16
Lab Code:	R1612386-014	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL
8260C		BALLGEIER

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86		

Sample Name:	DR-1	**Date Collected:**	11/22/16
Lab Code:	R1612386-015	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER
8260C		MCYMBAL

Sample Name:	DR-2	**Date Collected:**	11/22/16
Lab Code:	R1612386-016	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		BALLGEIER

Sample Name:	DR-3	**Date Collected:**	11/22/16
Lab Code:	R1612386-017	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL

Sample Name:	DR-4	**Date Collected:**	11/22/16
Lab Code:	R1612386-018	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86		

Sample Name:	EQUIPMENT BLANK	**Date Collected:**	11/22/16
Lab Code:	R1612386-019	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL

Sample Name:	G-1	**Date Collected:**	11/22/16
Lab Code:	R1612386-020	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL

Sample Name:	G-3	**Date Collected:**	11/22/16
Lab Code:	R1612386-021	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL

Sample Name:	MW-17	**Date Collected:**	11/22/16
Lab Code:	R1612386-022	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL

Sample Name:	TRIP BLANK	**Date Collected:**	11/22/16
Lab Code:	R1612386-024	**Date Received:**	11/22/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MCYMBAL

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 12:01
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-4	**Units:**	ug/L
Lab Code:	R1612386-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	11/30/16 13:09	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 13:09	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 13:09	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 13:09	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 13:09	
Vinyl Chloride	ND U	5.0	1	11/30/16 13:09	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	11/30/16 13:09	
Dibromofluoromethane	103	89 - 119	11/30/16 13:09	
Toluene-d8	106	87 - 121	11/30/16 13:09	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 12:48
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-20	**Units:**	ug/L
Lab Code:	R1612386-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	11/30/16 13:34	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 13:34	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 13:34	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 13:34	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 13:34	
Vinyl Chloride	ND U	5.0	1	11/30/16 13:34	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	11/30/16 13:34	
Dibromofluoromethane	104	89 - 119	11/30/16 13:34	
Toluene-d8	107	87 - 121	11/30/16 13:34	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 13:15
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-19R	**Units:**	ug/L
Lab Code:	R1612386-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	11/30/16 13:59	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 13:59	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 13:59	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 13:59	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 13:59	
Vinyl Chloride	ND U	5.0	1	11/30/16 13:59	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	11/30/16 13:59	
Dibromofluoromethane	105	89 - 119	11/30/16 13:59	
Toluene-d8	106	87 - 121	11/30/16 13:59	

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 14:22
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-15	**Units:**	ug/L
Lab Code:	R1612386-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	11/30/16 14:24	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 14:24	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 14:24	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 14:24	
Trichloroethene (TCE)	**11**	5.0	1	11/30/16 14:24	
Vinyl Chloride	ND U	5.0	1	11/30/16 14:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	11/30/16 14:24	
Dibromofluoromethane	107	89 - 119	11/30/16 14:24	
Toluene-d8	109	87 - 121	11/30/16 14:24	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 14:50
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-14	**Units:**	ug/L
Lab Code:	R1612386-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**48**	5.0	1	11/30/16 14:49	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 14:49	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 14:49	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 14:49	
Trichloroethene (TCE)	**28**	5.0	1	11/30/16 14:49	
Vinyl Chloride	ND U	5.0	1	11/30/16 14:49	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	85 - 122	11/30/16 14:49	
Dibromofluoromethane	104	89 - 119	11/30/16 14:49	
Toluene-d8	107	87 - 121	11/30/16 14:49	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 15:20
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-18	**Units:**	ug/L
Lab Code:	R1612386-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**9.8**	5.0	1	11/30/16 15:15	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 15:15	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 15:15	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 15:15	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 15:15	
Vinyl Chloride	ND U	5.0	1	11/30/16 15:15	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	11/30/16 15:15	
Dibromofluoromethane	105	89 - 119	11/30/16 15:15	
Toluene-d8	104	87 - 121	11/30/16 15:15	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 15:50
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-21	**Units:**	ug/L
Lab Code:	R1612386-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**17**	5.0	1	11/30/16 15:40	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 15:40	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 15:40	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 15:40	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 15:40	
Vinyl Chloride	ND U	5.0	1	11/30/16 15:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	11/30/16 15:40	
Dibromofluoromethane	106	89 - 119	11/30/16 15:40	
Toluene-d8	107	87 - 121	11/30/16 15:40	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 16:20
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-16	**Units:**	ug/L
Lab Code:	R1612386-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**14**	5.0	1	11/30/16 16:06	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 16:06	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 16:06	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 16:06	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 16:06	
Vinyl Chloride	ND U	5.0	1	11/30/16 16:06	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	11/30/16 16:06	
Dibromofluoromethane	106	89 - 119	11/30/16 16:06	
Toluene-d8	106	87 - 121	11/30/16 16:06	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 16:50
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-7	**Units:**	ug/L
Lab Code:	R1612386-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**110**	5.0	1	11/30/16 16:31	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 16:31	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 16:31	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 16:31	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 16:31	
Vinyl Chloride	ND U	5.0	1	11/30/16 16:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	11/30/16 16:31	
Dibromofluoromethane	104	89 - 119	11/30/16 16:31	
Toluene-d8	106	87 - 121	11/30/16 16:31	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/21/16 17:15
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-6	**Units:**	ug/L
Lab Code:	R1612386-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**87**	5.0	1	11/30/16 16:56	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 16:56	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 16:56	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 16:56	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 16:56	
Vinyl Chloride	ND U	5.0	1	11/30/16 16:56	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	11/30/16 16:56	
Dibromofluoromethane	107	89 - 119	11/30/16 16:56	
Toluene-d8	105	87 - 121	11/30/16 16:56	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 08:00
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-12	**Units:**	ug/L
Lab Code:	R1612386-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**7.1**	5.0	1	11/30/16 17:21	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 17:21	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 17:21	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 17:21	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 17:21	
Vinyl Chloride	ND U	5.0	1	11/30/16 17:21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	11/30/16 17:21	
Dibromofluoromethane	106	89 - 119	11/30/16 17:21	
Toluene-d8	107	87 - 121	11/30/16 17:21	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 08:20
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-11	**Units:**	ug/L
Lab Code:	R1612386-012	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**220**	**D**	25	5	12/01/16 18:38	
trans-1,2-Dichloroethene	**16**		5.0	1	11/30/16 17:47	
Tetrachloroethene (PCE)	ND	U	5.0	1	11/30/16 17:47	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	11/30/16 17:47	
Trichloroethene (TCE)	**410**		25	5	12/01/16 18:38	
Vinyl Chloride	ND	U	5.0	1	11/30/16 17:47	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	11/30/16 17:47	
Dibromofluoromethane	102	89 - 119	11/30/16 17:47	
Toluene-d8	106	87 - 121	11/30/16 17:47	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 09:40
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-1	**Units:**	ug/L
Lab Code:	R1612386-013	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**340**	**D**	50	10	12/01/16 19:03	
trans-1,2-Dichloroethene	**19**		5.0	1	11/30/16 18:12	
Tetrachloroethene (PCE)	ND	U	5.0	1	11/30/16 18:12	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	11/30/16 18:12	
Trichloroethene (TCE)	**1100**	**D**	50	10	12/01/16 19:03	
Vinyl Chloride	**7.9**		5.0	1	11/30/16 18:12	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	11/30/16 18:12	
Dibromofluoromethane	104	89 - 119	11/30/16 18:12	
Toluene-d8	106	87 - 121	11/30/16 18:12	

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 09:40
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-X	**Units:**	ug/L
Lab Code:	R1612386-014	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**380**	**D**	50	10	12/01/16 19:28	
trans-1,2-Dichloroethene	**18**		5.0	1	11/30/16 18:37	
Tetrachloroethene (PCE)	ND	U	5.0	1	11/30/16 18:37	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	11/30/16 18:37	
Trichloroethene (TCE)	**1300**	**D**	50	10	12/01/16 19:28	
Vinyl Chloride	**7.0**		5.0	1	11/30/16 18:37	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	11/30/16 18:37	
Dibromofluoromethane	104	89 - 119	11/30/16 18:37	
Toluene-d8	109	87 - 121	11/30/16 18:37	

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 11:18
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	DR-1	**Units:**	ug/L
Lab Code:	R1612386-015	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**97**	5.0	1	11/30/16 19:02	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 19:02	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 19:02	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 19:02	
Trichloroethene (TCE)	**520 D**	25	5	12/01/16 19:53	
Vinyl Chloride	ND U	5.0	1	11/30/16 19:02	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	11/30/16 19:02	
Dibromofluoromethane	107	89 - 119	11/30/16 19:02	
Toluene-d8	111	87 - 121	11/30/16 19:02	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 11:41
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	DR-2	**Units:**	ug/L
Lab Code:	R1612386-016	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**100**	5.0	1	11/30/16 19:28	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 19:28	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 19:28	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 19:28	
Trichloroethene (TCE)	**37**	5.0	1	11/30/16 19:28	
Vinyl Chloride	ND U	5.0	1	11/30/16 19:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	85 - 122	11/30/16 19:28	
Dibromofluoromethane	104	89 - 119	11/30/16 19:28	
Toluene-d8	108	87 - 121	11/30/16 19:28	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 12:12
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	DR-3	**Units:**	ug/L
Lab Code:	R1612386-017	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**67**	5.0	1	12/01/16 16:32	
trans-1,2-Dichloroethene	ND U	5.0	1	12/01/16 16:32	
Tetrachloroethene (PCE)	ND U	5.0	1	12/01/16 16:32	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	12/01/16 16:32	
Trichloroethene (TCE)	**31**	5.0	1	12/01/16 16:32	
Vinyl Chloride	ND U	5.0	1	12/01/16 16:32	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	12/01/16 16:32	
Dibromofluoromethane	109	89 - 119	12/01/16 16:32	
Toluene-d8	108	87 - 121	12/01/16 16:32	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 12:31
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	DR-4	**Units:**	ug/L
Lab Code:	R1612386-018	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**45**	5.0	1	12/01/16 16:57	
trans-1,2-Dichloroethene	ND U	5.0	1	12/01/16 16:57	
Tetrachloroethene (PCE)	ND U	5.0	1	12/01/16 16:57	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	12/01/16 16:57	
Trichloroethene (TCE)	**34**	5.0	1	12/01/16 16:57	
Vinyl Chloride	ND U	5.0	1	12/01/16 16:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	85 - 122	12/01/16 16:57	
Dibromofluoromethane	104	89 - 119	12/01/16 16:57	
Toluene-d8	109	87 - 121	12/01/16 16:57	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 12:00
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	EQUIPMENT BLANK	**Units:**	ug/L
Lab Code:	R1612386-019	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	12/01/16 16:07	
trans-1,2-Dichloroethene	ND U	5.0	1	12/01/16 16:07	
Tetrachloroethene (PCE)	ND U	5.0	1	12/01/16 16:07	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	12/01/16 16:07	
Trichloroethene (TCE)	ND U	5.0	1	12/01/16 16:07	
Vinyl Chloride	ND U	5.0	1	12/01/16 16:07	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	12/01/16 16:07	
Dibromofluoromethane	105	89 - 119	12/01/16 16:07	
Toluene-d8	108	87 - 121	12/01/16 16:07	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 13:00
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	G-1	**Units:**	ug/L
Lab Code:	R1612386-020	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**85**	5.0	1	12/01/16 17:23	
trans-1,2-Dichloroethene	ND U	5.0	1	12/01/16 17:23	
Tetrachloroethene (PCE)	ND U	5.0	1	12/01/16 17:23	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	12/01/16 17:23	
Trichloroethene (TCE)	ND U	5.0	1	12/01/16 17:23	
Vinyl Chloride	ND U	5.0	1	12/01/16 17:23	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	85 - 122	12/01/16 17:23	
Dibromofluoromethane	107	89 - 119	12/01/16 17:23	
Toluene-d8	107	87 - 121	12/01/16 17:23	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 13:15
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	G-3	**Units:**	ug/L
Lab Code:	R1612386-021	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**240**	10	2	12/01/16 17:48	
trans-1,2-Dichloroethene	ND U	10	2	12/01/16 17:48	
Tetrachloroethene (PCE)	ND U	10	2	12/01/16 17:48	
1,1,1-Trichloroethane (TCA)	ND U	10	2	12/01/16 17:48	
Trichloroethene (TCE)	**53**	10	2	12/01/16 17:48	
Vinyl Chloride	ND U	10	2	12/01/16 17:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	12/01/16 17:48	
Dibromofluoromethane	106	89 - 119	12/01/16 17:48	
Toluene-d8	111	87 - 121	12/01/16 17:48	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 13:30
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	MW-17	**Units:**	ug/L
Lab Code:	R1612386-022	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	**300**	10	2	12/01/16 18:13	
trans-1,2-Dichloroethene	ND U	10	2	12/01/16 18:13	
Tetrachloroethene (PCE)	ND U	10	2	12/01/16 18:13	
1,1,1-Trichloroethane (TCA)	ND U	10	2	12/01/16 18:13	
Trichloroethene (TCE)	**75**	10	2	12/01/16 18:13	
Vinyl Chloride	ND U	10	2	12/01/16 18:13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	12/01/16 18:13	
Dibromofluoromethane	105	89 - 119	12/01/16 18:13	
Toluene-d8	107	87 - 121	12/01/16 18:13	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	11/22/16 13:15
Sample Matrix:	Water	**Date Received:**	11/22/16 17:50
Sample Name:	TRIP BLANK	**Units:**	ug/L
Lab Code:	R1612386-024	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	12/01/16 15:42	
trans-1,2-Dichloroethene	ND U	5.0	1	12/01/16 15:42	
Tetrachloroethene (PCE)	ND U	5.0	1	12/01/16 15:42	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	12/01/16 15:42	
Trichloroethene (TCE)	ND U	5.0	1	12/01/16 15:42	
Vinyl Chloride	ND U	5.0	1	12/01/16 15:42	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	12/01/16 15:42	
Dibromofluoromethane	103	89 - 119	12/01/16 15:42	
Toluene-d8	107	87 - 121	12/01/16 15:42	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Bergmann Associates, Incorporated **Service Request:** R1612386
Project: Gowanda Day Hab Center/6974.86
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 85 - 122	Dibromofluoromethane 89 - 119	Toluene-d8 87 - 121
MW-4	R1612386-001	100	103	106
MW-20	R1612386-002	101	104	107
MW-19R	R1612386-003	101	105	106
MW-15	R1612386-004	104	107	109
MW-14	R1612386-005	102	104	107
MW-18	R1612386-006	104	105	104
MW-21	R1612386-007	105	106	107
MW-16	R1612386-008	101	106	106
MW-7	R1612386-009	101	104	106
MW-6	R1612386-010	103	107	105
MW-12	R1612386-011	103	106	107
MW-11	R1612386-012	104	102	106
MW-1	R1612386-013	100	104	106
MW-X	R1612386-014	105	104	109
DR-1	R1612386-015	106	107	111
DR-2	R1612386-016	102	104	108
DR-3	R1612386-017	103	109	108
DR-4	R1612386-018	100	104	109
EQUIPMENT BLANK	R1612386-019	104	105	108
G-1	R1612386-020	102	107	107
G-3	R1612386-021	105	106	111
MW-17	R1612386-022	106	105	107
TRIP BLANK	R1612386-024	101	103	107
Lab Control Sample	RQ1614618-03	105	107	108
Method Blank	RQ1614618-04	101	106	107
Lab Control Sample	RQ1614683-03	103	103	106
Method Blank	RQ1614683-04	101	108	109

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614618-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	11/30/16 12:13	
trans-1,2-Dichloroethene	ND U	5.0	1	11/30/16 12:13	
Tetrachloroethene (PCE)	ND U	5.0	1	11/30/16 12:13	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	11/30/16 12:13	
Trichloroethene (TCE)	ND U	5.0	1	11/30/16 12:13	
Vinyl Chloride	ND U	5.0	1	11/30/16 12:13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	11/30/16 12:13	
Dibromofluoromethane	106	89 - 119	11/30/16 12:13	
Toluene-d8	107	87 - 121	11/30/16 12:13	

Analytical Report

Client:	Bergmann Associates, Incorporated	**Service Request:**	R1612386
Project:	Gowanda Day Hab Center/6974.86	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614683-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
cis-1,2-Dichloroethene	ND U	5.0	1	12/01/16 15:17	
trans-1,2-Dichloroethene	ND U	5.0	1	12/01/16 15:17	
Tetrachloroethene (PCE)	ND U	5.0	1	12/01/16 15:17	
1,1,1-Trichloroethane (TCA)	ND U	5.0	1	12/01/16 15:17	
Trichloroethene (TCE)	ND U	5.0	1	12/01/16 15:17	
Vinyl Chloride	ND U	5.0	1	12/01/16 15:17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	85 - 122	12/01/16 15:17	
Dibromofluoromethane	108	89 - 119	12/01/16 15:17	
Toluene-d8	109	87 - 121	12/01/16 15:17	

Client: Bergmann Associates, Incorporated
Project: Gowanda Day Hab Center/6974.86
Sample Matrix: Water

Service Request: R1612386
Date Analyzed: 11/30/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1614618-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
cis-1,2-Dichloroethene	8260C	17.1	20.0	85	80-121
trans-1,2-Dichloroethene	8260C	16.8	20.0	84	80-120
Tetrachloroethene (PCE)	8260C	16.8	20.0	84	78-124
1,1,1-Trichloroethane (TCA)	8260C	18.0	20.0	90	74-120
Trichloroethene (TCE)	8260C	16.1	20.0	80	78-123
Vinyl Chloride	8260C	17.2	20.0	86	69-133

Client: Bergmann Associates, Incorporated
Project: Gowanda Day Hab Center/6974.86
Sample Matrix: Water

Service Request: R1612386
Date Analyzed: 12/01/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1614683-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
cis-1,2-Dichloroethene	8260C	17.6	20.0	88	80-121
trans-1,2-Dichloroethene	8260C	18.6	20.0	93	80-120
Tetrachloroethene (PCE)	8260C	17.7	20.0	88	78-124
1,1,1-Trichloroethane (TCA)	8260C	19.4	20.0	97	74-120
Trichloroethene (TCE)	8260C	18.5	20.0	92	78-123
Vinyl Chloride	8260C	18.5	20.0	93	69-133

APPENDIX B

IC/EC CHECKLIST

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation
625 Broadway, 11th Floor, Albany, NY 12233-7020
P: (518)402-9543 | F: (518)402-9547
www.dec.ny.gov

2/22/2017

Joe Whitney
Director Of Capital Services
NYS OPWDD
44 Holland Ave.
Albany, NY 12229

Re: Reminder Notice: Site Management Periodic Review Report and IC/EC Certification Submittal
Site Name: Gowanda Day Habilitation Center
Site No.: V00463
Site Address: 4 Industrial Place
Gowanda, NY 14070

Dear Joe Whitney:

This letter serves as a reminder that sites in active Site Management (SM) require the submittal of a periodic progress report. This report, referred to as the Periodic Review Report (PRR), must document the implementation of, and compliance with, site specific SM requirements. Section 6.3(b) of DER-10 *Technical Guidance for Site Investigation and Remediation* (available online at http://www.dec.ny.gov/regulations/67386.html) provides guidance regarding the information that must be included in the PRR. Further, if the site is comprised of multiple parcels, then you as the Certifying Party must arrange to submit one PRR for all parcels that comprise the site. The PRR must be received by the Department no later than **May 06, 2017**. Guidance on the content of a PRR is enclosed.

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

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

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

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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

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

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

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

Phone number: 716-851-7220. E-mail: david.szymanski@dec.ny.gov

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

Enclosures

PRR General Guidance
Certification Form Instructions
Certification Forms

ec: w/ enclosures
David Szymanski, Project Manager
Chad Staniszewski, Hazardous Waste Remediation Engineer, Region 9

Enclosure 1

Certification Instructions

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

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

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

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

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

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

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

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

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

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.

- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.

Enclosure 2

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

Site Details **Box 1**

Site No. V00463

Site Name Gowanda Day Habilitation Center

Site Address: 4 Industrial Place Zip Code: 14070
City/Town: Gowanda
County: Cattaraugus
Site Acreage: 5.9

Reporting Period: April 06, 2016 to April 06, 2017

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

Box 2

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

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

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

Megan E. Bellucci, Bergmann Associates — 4/27/2017

Signature of Owner, Remedial Party or Designated Representative — Date

SITE NO. V00463

Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
16.027-2-11	NY State OPWDD	Ground Water Use Restriction Soil Management Plan Building Use Restriction

Site is deed restricted with an SMP (2/22/2008). There is use restriction for industrial and commercial, excluding, medical and day care services. Further restriction is that a sub-slab vapor mitigation system is required before occupancy.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
16.027-2-11	Groundwater Treatment System Vapor Mitigation

Dual phase soil vapor and groundwater pump and treat with pneumatic high vacuum pumps. Treatment is by best available technology, currently air stripping with carbon treatment of exhaust gas. Treated water is passed to the municipal treatment facility.

Box 5

Periodic Review Report (PRR) Certification Statements

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

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

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

YES	NO
☐	☐

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

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

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

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

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

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

YES	NO
☐	☐

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

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

_____ _____

Signature of Owner, Remedial Party or Designated Representative — Date

Enclosure 3
Periodic Review Report (PRR) General Guidance

I. Executive Summary: (1/2-page or less)
   A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
   B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
      1. progress made during the reporting period toward meeting the remedial objectives for the site
      2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
   C. Compliance
      1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
      2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
   D. Recommendations
      1. recommend whether any changes to the SMP are needed
      2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
      3. recommend whether the requirements for discontinuing site management have been met.

II. Site Overview (one page or less)
   A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
   B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.

III. Evaluate Remedy Performance, Effectiveness, and Protectiveness
   Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.

IV. IC/EC Plan Compliance Report (if applicable)
   A. IC/EC Requirements and Compliance
      1. Describe each control, its objective, and how performance of the control is evaluated.
      2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
      3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
      4. Conclusions and recommendations for changes.
   B. IC/EC Certification
      1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).

V. Monitoring Plan Compliance Report (if applicable)
   A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
   B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
   C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
   D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
   E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.

VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
   A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
   B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.
   C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated the ability of each component of the remedy subject to O&M requirements to perform as

designed/expected.

D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.

E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

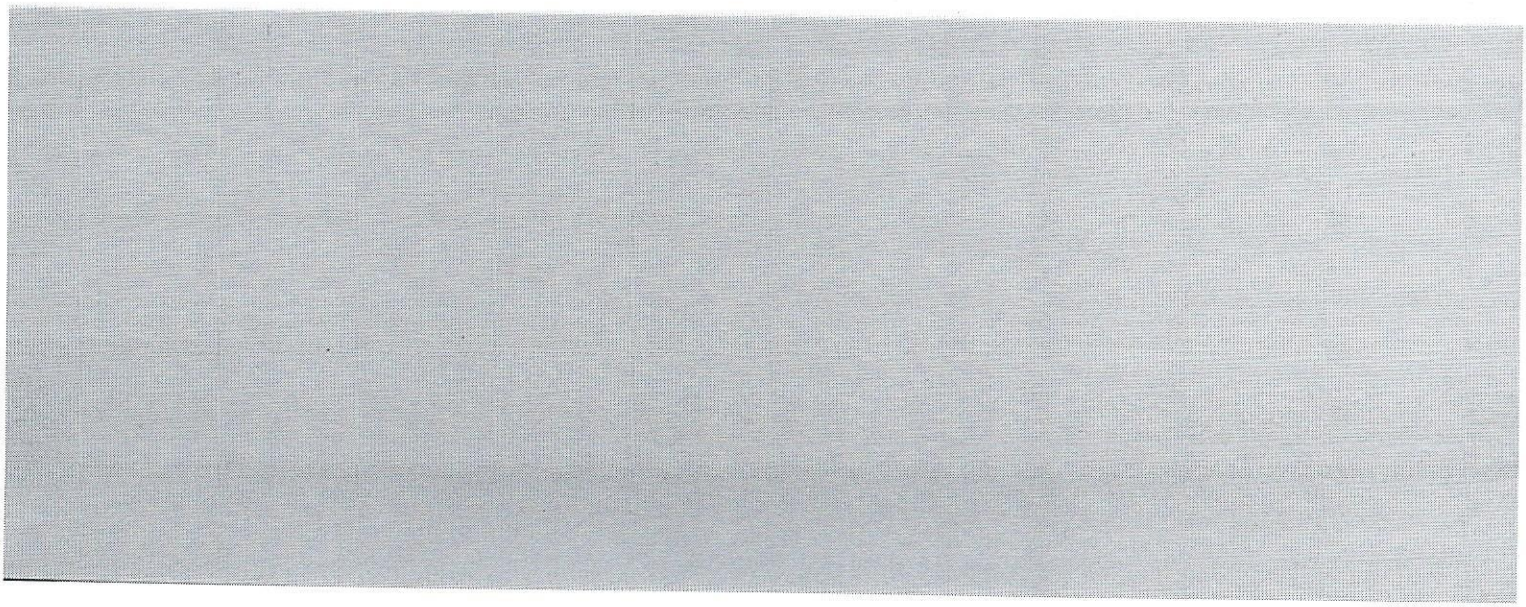
A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;
   1. whether all requirements of each plan were met during the reporting period
   2. any requirements not met
   3. proposed plans and a schedule for coming into full compliance.

B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.

C. Future PRR Submittals
   1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
   2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

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



IC CERTIFICATIONS
SITE NO. V00463

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

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

I Megan E. Borruso (print name) at Bergmann Associates 280 E. Broad St. Suite 200 Rochester NY 14604 (print business address)

am certifying as ~~Owner~~ Remedial Party Representative (Owner or Remedial Party)

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

Megan E. Borruso
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

4/27/2017
Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

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

I ANATOLE MICHNEVICH at Bergmann Associates
print name print business address

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

STATE OF NEW YORK
ANATOLE A. MICHNEVICH
LIC. NO. 066960
LICENSED PROFESSIONAL ENGINEER

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

Stamp (Required for PE)

5/1/2017
Date