August 30, 2019

Brian Jankauskas, P.E.
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau A
625 Broadway
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Albany, NY 12233-7015

Subject: **Groundwater and Surface Water Monitoring Report, Main Plant Site, February 2019 – June 2019**
Former Ciba-Geigy Facility, Glens Falls, NY
(Site No. 557011; EPA ID NYD002069748)

Dear Mr. Jankauskas:

On behalf of Hercules Incorporated (previously acquired by Ashland LLC) and CIBA (previously acquired by BASF Corporation), EHS Support LLC is submitting the enclosed *Groundwater and Surface Water Monitoring Report* (GSMR) for the Main Plant Site area at the former Ciba-Geigy Corporation pigments manufacturing facility located at 89 Lower Warren Street in Queensbury, New York.

We appreciate your time in review of this report. If you have questions or would like to discuss the report, please contact Cassie Reuter at (608) 558-6795.

I, Cassie R. Reuter, P.E., certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this *Groundwater and Surface Water Monitoring Report* dated August 2019 for the Former Ciba-Geigy facility located in Queensbury Township, Glens Falls, New York, was prepared in accordance with all applicable statutes and regulations and with DER *Technical Guidance for Site Investigation and Remediation* (DER-10).

Regards,

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Enclosure

Groundwater and Surface Water Monitoring Report Main Plant Site

February 2019 –
June 2019
Former Ciba-Geigy Site
Glens Falls, NY

Prepared for:

HERCULES

Prepared by:

EHS Support

August 2019

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Acronyms

bgs	below ground surface
CGW	groundwater concentration
CIBA	Ciba-Geigy Corporation
DCB	dichlorobenzene
DO	dissolved oxygen
ELAP	Environmental Laboratory Approval Program
GSMP	Groundwater and Surface Water Monitoring Plan
GSMR	Groundwater and Surface Water Monitoring Report
GWES	groundwater extraction system
µg/L	micrograms per Liter
µm	micrometer
mg/L	milligrams per Liter
mL	milliliter
MPS	Main Plant Site
MS/MSD	matrix spike/matrix spike duplicate
NGVD29	National Geodetic Vertical Datum of 1929 (also known as the sea level datum)
NTU	nephelometric turbidity units
NYCRR	New York Code, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ORP	oxidation-reduction potential
QC	quality control
ROP	Remedy Optimization Plan
ROR	Remedy Optimization Report
Site	Main Plant Site, 89 Lower Warren Street, Queensbury, NY
SWQC	surface water quality criteria
TOGS	Technical and Operation Guidance Series
USEPA	U.S. Environmental Protection Agency

Executive Summary

This *Groundwater and Surface Water Monitoring Report* (GSMR) presents sampling data collected in February 2019, March 2019 and June 2019 for the Main Plant Site (MPS) area at the former Ciba-Geigy Corporation (CIBA) pigments manufacturing facility (the Site), located at 89 Lower Warren Street in Queensbury, NY, just east of the City of Glens Falls and adjacent to the Hudson River. EHS Support LLC ("EHS Support") is submitting this report to the New York State Department of Environmental Conservation (NYSDEC) on behalf of Hercules Incorporated ("Hercules," previously acquired by Ashland LLC) and CIBA Corporation ("CIBA", previously acquired by BASF Corporation). Hercules and CIBA are the Site permittees and share responsibility for ongoing environmental activities.

Groundwater and surface water monitoring was performed in accordance with the sampling program presented in the *EW-B5 Operations and Main Plant Site Groundwater and Surface Water Sampling Program* letter (EHS Support, 2018), as approved by the NYSDEC in December 2018 (NYSDEC, 2018). The sampling program included the collection and laboratory analysis of samples from fifteen wells, two sumps and four surface water locations in March 2019, and the sampling of seven wells and two sumps in June 2019. In addition, a grab sample was collected in February 2019 at extraction well EW-B5, to support an assessment of concentration trends at this well in 2019.

Overall groundwater elevation data and flow conditions were consistent with previous data and interpretations, with groundwater flow predominantly to the south, except where overburden groundwater is intercepted by the French Drain system. Based on the data, the French Drain operations influence the groundwater gradient and achieve extraction of overburden groundwater in the vicinity of former Buildings 56 and 8. A detailed assessment of groundwater hydraulic data, including a presentation of transducer data and a discussion of the effectiveness of the groundwater extraction system (GWES), was provided in the *Remedy Optimization Report* in October 2017 (EHS Support, 2017) and in the *Revised Remedy Optimization Report* in March 2019 (EHS Support, 2019a). The *Revised Remedy Optimization Report* was approved by the NYSDEC in May 2019 (NYSDEC, 2019).

As detailed in February 2019 in the last semi-annual GSMR (EHS Support, 2019b), prior to initiating pumping at extraction well EW-B5 in December 2018, pressure transducers were installed into well EW-B5 and select monitoring wells in its vicinity, to allow for an assessment of water levels prior to and after the initiation of pumping. An average drawdown of 15 feet was achieved at EW-B5 with the initiation of pumping. No significant hydraulic responses were observed in the monitoring wells in the vicinity of EW-B5 that could be attributed to the pumping activities. The transducers were subsequently removed and will be reinstalled into the same well network in September 2019 before pumping at EW-B5 is suspended for a 1-month scheduled shut-down period.

The analytical results for the Hudson River surface water samples collected in March 2019 were below applicable surface water quality standards. The results are consistent with the Conceptual Site Model, which indicates that attenuation processes are occurring on-Site and within the hyporheic zone prior to discharge to the river, such that the potential flux of constituents from groundwater to the river is not sufficient to result in an exceedance of surface water quality standards. This is supported by the results of the surface water sampling conducted in the river immediately adjacent to and downstream of impacted groundwater areas on-Site.

Overall, chromium and cyanide concentrations in groundwater samples collected during this reporting period were lower than in recent sampling events. This is consistent with the long-term trend on-Site, which has been an overall decline in groundwater concentrations since the Corrective Measures were implemented in 2003. Groundwater concentrations above GA standards are generally limited to the areas of the Site where French Drain Sumps A and B continue to operate and to certain bedrock groundwater wells. Groundwater on-Site is not used, and usage is precluded via institutional control (Deed Notice).

Overburden Horizon

The magnitude of constituents of interest in overburden groundwater wells was generally lower during the March and June 2019 sampling events than in recent reporting periods. A snow melt event occurred just prior to collection of the groundwater samples in March 2019, which may have contributed to localized reductions in concentrations during that event (e.g., at wells MW-OB14 and MW-OB30). However, concentrations at the three overburden groundwater wells sampled during the June 2019 event (including at MW-OB14) generally remained lower than in recent reporting periods. An assessment of long-term groundwater concentration trends at the Site is ongoing.

While lower in magnitude than recent sampling rounds, concentrations of chromium, hexavalent chromium and cyanide in certain overburden groundwater wells in the vicinity of former Buildings 8 and 56 (the Central Area) exceeded GA standards. Overburden groundwater extraction at Sumps A and B is ongoing in the Central Area.

The monitoring wells located along the riverbank (wells MW-OB30 through MW-OB34) were sampled in March 2019. Compared to recent events, constituent concentrations in these wells were generally lower or stable. Concentrations in well MW-OB30 were one to two orders of magnitude lower than in recent reporting periods. No constituent concentrations exceeded the conservative *Remedy Optimization Plan* (ROP) groundwater concentration (CGW) values in monitoring wells along the riverbank.

Bedrock Horizons

Consistent with previous sampling events, GA standard exceedances were present at intermediate bedrock extraction well EW-B5, where vertical gradients were increased during bedrock groundwater extraction and where the highest constituent concentrations are present on-Site. Pumping was reinitiated at EW-B5 in mid-December 2018. GA standard exceedances also continue to be present at deep bedrock well AW-C11. No GA standard exceedances were present in the other bedrock groundwater monitoring wells sampled during this reporting period.

The March 2019 sample results for extraction well EW-B5 and monitoring well AW-C11 are atypical; therefore, these sample results will not be utilized for the assessment of long-term trends under typical Site conditions. As noted above, a snowmelt event occurred just prior to collection of the groundwater samples in March 2019, which may have affected groundwater sample results. The chromium concentrations measured at both EW-B5 and AW-C11 were an order of magnitude lower in March 2019 than in June 2019 and in other recent sampling events.

While extraction well EW-B5 is an intermediate bedrock well, there is no shallow bedrock horizon at EW-B5 (i.e., EW-B5 is screened directly below the overburden). Infiltration of precipitation from the ground surface can affect groundwater concentrations in the short-term, so the reduction in chromium concentrations observed at extraction well EW-B5 in March 2019 is not unexpected subsequent to a large snowmelt event. In February 2019 and June 2019, concentrations of hexavalent chromium at EW-B5 were 52 milligrams per Liter (mg/L) and 46 mg/L, respectively. These concentrations are of a similar magnitude to the concentrations measured under pumping conditions in 2013 and 2014. Following the cessation of bedrock pumping in November 2016, hexavalent chromium concentrations generally ranged from 110 to 140 mg/L through September 2018. The impacted intermediate horizon bedrock groundwater at EW-B5 is not presenting a risk to surface water. The ROP included a conservative CGW value of 80 mg/L for hexavalent chromium in the intermediate bedrock horizon for the protection of surface water. Further, the groundwater elevation in well EW-B5 is lower than the river; therefore, the intermediate bedrock groundwater is not discharging to the river.

The concentration of hexavalent chromium at well AW-C11 in June 2019 was of a similar magnitude to concentrations that have been measured since November 2016. Since 2016, concentrations measured at well AW-C11 have typically been lower than, but of a similar magnitude, to the results of the groundwater sampling round that was conducted in 2002.

The reduction in concentrations at monitoring well AW-C11 in March 2019 is not attributable to precipitation infiltration through the subsurface, because AW-C11 is a Horizon C well, screened approximately 160 feet below ground surface. As detailed in the *Response to October 2018 Comments and Issuance of the Revised Remedy Optimization Report* letter (EHS Support, 2019c), Horizon B and Horizon C are isolated water-bearing units separated by a 100-foot thick low-hydraulic conductivity interval. As with the localized increases in chromium concentrations at well AW-C11 since 2016, a discrete anthropogenic feature (e.g., potential downward water seepage along casing of the deep well) may have allowed snowmelt to affect a localized reduction in concentrations at AW-C11. Another possibility is a localized geologic feature, such as an open vertical/high-angle fracture connecting the overburden/shallow bedrock and the Horizon C; however, the available hydrogeologic data, geologic data and the Conceptual Site Model indicate this is unlikely.

As specified in the *EW-B5 Operations and Main Plant Site Groundwater and Surface Water Sampling Program* letter (EHS Support, 2018), groundwater samples will be collected in September and December 2019, and an additional grab sample will be collected at EW-B5 in October 2019 under temporary non-pumping conditions. The data will be provided to the NYSDEC in the next semi-annual report, along with an updated assessment of long-term concentration trends.

One modification is proposed to the plan for future groundwater and surface water sampling events at the Site, beginning in September 2019. Hercules and BASF request approval from the NYSDEC to utilize laboratory Method 218.6 for hexavalent chromium analysis, rather than United States Environmental Protection Agency (USEPA) Method 7196. Side-by-side analyses were performed using samples collected during the June 2019 sampling event, with comparable results. Samples analyzed for hexavalent chromium by USEPA Method 7196 must be analyzed with a 24-hour hold time, which poses logistical challenges during groundwater sampling events (i.e., shortened field days and daily long-distance travel for cooler shipments). Method 218.6 allows for a longer hold time (i.e., 28 days under preservation) while also providing results with a greater degree of precision, as compared to USEPA Method 7196.

1 Introduction

This *Groundwater and Surface Water Monitoring Report* (GSMR) presents groundwater and surface water monitoring data collected in February 2019, March 2019 and June 2019 for the Main Plant Site (MPS) area at the former Ciba-Geigy Corporation ("CIBA") pigments manufacturing facility located at 89 Lower Warren Street in Queensbury, NY (the Site) **(Figure 1)**. Corrective measure operations are conducted for the MPS area under a New York State Department of Environmental Conservation (NYSDEC) Hazardous Waste Management Post Closure Permit (NYSDEC Site No. 557011).

EHS Support LLC ("EHS Support") prepared this GSMR on behalf of Hercules Incorporated ("Hercules," previously acquired by Ashland LLC), and CIBA Corporation ("CIBA", previously acquired by BASF Corporation). Hercules and CIBA are the Site permittees and share responsibility for ongoing environmental activities. Groundwater and surface water monitoring was performed in accordance with the sampling program presented in the *EW-B5 Operations and Main Plant Site Groundwater and Surface Water Sampling Program* letter (EHS Support, 2018) and approved by the NYSDEC in December 2018 (NYSDEC, 2018).

A groundwater extraction system (GWES) is in operation at the Site, which includes the extraction of groundwater from Sumps A and B in the French Drain System. Details of the GWES operations, including discharge monitoring and groundwater extraction volumes are reported annually under separate cover. As detailed in the *Remedy Optimization Plan* ([ROP]; EHS Support, 2016) pumping was discontinued at one of three sumps in the French Drain System (Sump C, located in the Eastern Area of the Site) and at all twenty bedrock extraction wells in November 2016.

Operation of the GWES French Drain in the Central and Western Areas of the Site (including Sumps A and B) continues as described in the ROP. Details regarding the construction of the French Drain and the basis for optimized operations were provided in the ROP. The location of the French Drain sumps and descriptors for the Western, Central, and Eastern Areas are shown on **Figure 1.**

As detailed in the *Revised Remedy Optimization Report* (EHS Support, 2019a), on December 12, 2018, pumping was reinitiated at well EW-B5, a Horizon B (intermediate) bedrock groundwater extraction well. Prior to initiating pumping, well EW-B5 was integrated into the Site telemetry system, and pressure transducers were placed into EW-B5 and wells in its vicinity to allow for an assessment of water levels prior to and after the initiation of pumping.

In accordance with the *EW-B5 Operations and Main Plant Site Groundwater and Surface Water Sampling Program* letter (EHS Support, 2018), quarterly groundwater sampling will continue at select locations in 2019. Surface water sampling will be semi-annual (March and September). Reporting will remain semi-annual during this phase of sampling activities.

The objectives of the current groundwater and surface water monitoring program are:

- Implement low flow sampling to provide high-quality groundwater samples for the assessment of monitored parameter concentrations against water quality criteria and GWES performance goals.
- Monitor key Site constituents (cyanide, chromium and hexavalent chromium) in groundwater to assess trends in concentrations.
- Monitor dichlorobenzene (DCB) concentrations at two wells, for comparison to applicable criteria.

- Conduct surface water sampling in the Hudson River to:
  - Assess the potential presence of monitored constituents from possible upstream sources.
  - Demonstrate that potential constituent mass flux from the Site is not leading to exceedances of NYSDEC water quality standards in the vicinity of the Site.
- Conduct groundwater and surface water level monitoring to assess hydraulic conditions in groundwater and surface water, including the impact/influence of GWES operations.

A discussion of the environmental setting, including the Site geology and hydrogeology, is provided in **Section 2**. Details regarding field activities and quality control sampling, laboratory methods, water quality and GWES performance criteria used for assessment, and data validation are provided in **Section 3**. A summary of water level monitoring and groundwater hydraulics at the Site is provided in **Section 4.** Sample analytical results and comparison to criteria are discussed in **Section 5**. A list of documents referenced in this report is provided in **Section 6.**

2 Environmental Setting

The following is a summary of the geologic and hydrogeologic setting at the Site. In-depth review and evaluation of the Site's geologic and hydrogeologic setting were presented in the *Site Conceptualization and Groundwater Corrective Measures Effectiveness Evaluation* report dated January 2015 (EHS Support, 2015). An illustration of the Site's stratigraphic and hydrogeologic units, as well as geologic cross section, is shown on **Figure 2.**

2.1 Site Geology

The Site lies on the bank of the Hudson River. The unconsolidated and consolidated lithologies beneath the Site consist of glaciolacustrine and fluvial sediments (overburden) and underlying limestone bedrock. The overburden is a combination of industrial fill and fluvial/glaciofluvial sediments (i.e., sand, some silt, and clay), with glaciolacustrine clay (and locally glacial till) at its base.

The bedrock is primarily limestone comprising three geologic formations: Glens Falls Limestone, Isle La Motte Formation (predominantly limestone), and Fort Ann Formation (predominantly calcitic dolostone or dolomitic limestone) (**Figure 2**). The limestone bedrock can be characterized as massive, with limited to no intergranular porosity and with groundwater movement concentrated in fracture (secondary) porosity.

The historical structural forces that have acted upon the regional geology in the study area have created an enhanced secondary porosity of the limestone rock in the form of joints and fractures. Structural fractures formed parallel to bedding planes. The sub-horizontal bedding plane fractures are typically the main contributor to active groundwater flow through secondary porosity development. The more open and continuous these features are, the greater the influence they have on groundwater flow direction. Sub-vertical fractures may influence localized groundwater flow. High-angle joints, which formed almost 90 degrees to the bedding planes, also occur and are mostly mineralized; and hydraulic conductivity associated with these features is likely to be low. Relief of lithostatic load due to erosion during uplift (including isostatic uplift following glaciation) is likely to have been a significant contributor to the opening of horizontal or low-angle bedding fractures to form the water-bearing zones.

2.2 Site Hydrogeology

Four groundwater units have been characterized at the Site, with groundwater flow in the limestone bedrock controlled primarily by three zones of open, sub-horizontal, bedding-parallel fracture networks. The four groundwater units are listed below, from shallow to deep, and are shown on **Figure 2**:

- Overburden – unconsolidated sediments
- Horizon A (shallow) – limestone
- Horizon B (intermediate) – limestone
- Horizon C (deep) – limestone

The typical depth of the groundwater unit's fracture zones for the western part of the Site is shown on **Figure 2**. In summary, Horizon A fracture zone occurs approximately 40 feet below ground surface (bgs), Horizon B fracture zone occurs approximately 60 feet bgs, and Horizon C fracture zone occurs approximately 160 feet bgs. Note, the bedding plane fracture zones generally become shallower towards the east, with Horizons A and B likely intersecting the top of bedrock surface in the central and eastern parts of the Site, respectively (see **Figure 2**).

The groundwater flow within the four units is described as follows.

- *Overburden*: Groundwater flow in the overburden is to the south towards the Hudson River, with groundwater likely to discharge to the river under natural (pre-remediation) conditions. The overburden material (native lacustrine sediments, till, and fill) is variably saturated. The Overburden water-bearing zone includes the saturated portions of the fill and lacustrine sands and silts situated above the lacustrine clay unit (and local underlying till) or, where the clay unit is absent, above the bedrock surface. The water-bearing zone is locally thin and discontinuous, with unsaturated areas occurring near the Hudson River. The extent and/or existence of these areas varies with seasonal fluctuations in the groundwater table elevation.
- *Horizon A (shallow)*: Groundwater flow within Horizon A is generally in a southerly direction towards the Hudson River.
- *Horizon B (intermediate)*: Groundwater flow within Horizon B is generally in a southerly direction, with groundwater elevations below the elevation of the Hudson River.
- *Horizon C (deep)*: Horizon C groundwater elevations are below the elevation of the Hudson River, with groundwater flow generally to the west-southwest across the Site. There is a possibility that local dewatering of a quarry located southwest of the Site (on the south side of the Hudson River) may influence the direction of groundwater flow within Horizon C.

3 Groundwater and Surface Water Sampling Field Activities

Two quarterly monitoring events were conducted at the MPS area during this reporting period. In March 2019, groundwater level gauging and groundwater and surface water sampling were performed in accordance with the summary provided in **Table 1.** In June 2019, groundwater level gauging and sampling were performed in accordance with the summary provided in **Table 2.** Additionally, a grab water sample was collected from well EW-B5 in February 2019.

Groundwater and surface water monitoring locations are shown on **Figures 3 through 6**. The field activities, quality control sampling, laboratory analysis, and water quality criteria used for data evaluation are summarized below. The results of monitoring and data evaluations are discussed in **Sections 4 and 5** of this report.

3.1 Water Level Gauging

Depth-to-groundwater measurements were collected during monitoring events using an electronic level meter/interface probe. The measurements were converted to groundwater elevations using the top-of-casing elevations, surveyed relative to the National Geodetic Vertical Datum of 1929 (NGVD29) also known as the sea level datum. The surface water level in the Hudson River at staff gauge SG-12, located adjacent to the Central Area of the Site, was also recorded during the quarterly monitoring events. The surface water elevation was calculated using the measured level (water height) at the staff gauge and the surveyed gauge reference point elevation. Water level measurements and calculated elevation data from each event are summarized in **Tables 3 and 4**. The groundwater elevations measured during each event are also carried forward to **Table 7**, which summarizes groundwater elevations during sampling events from 2015 to present.

The water elevation data from the March 2019 quarterly monitoring event were used to develop groundwater elevation contour maps for the overburden, shallow bedrock, intermediate bedrock, and deep bedrock horizons (**Figures 3 through 6**). An evaluation of groundwater and surface water hydraulics is provided in **Section 4**.

3.2 Groundwater and Surface Water Sampling

Groundwater and surface water sampling were conducted in accordance with the field sampling methodology approved in the ROP (EHS Support, 2016). The scope of the groundwater and surface water sampling events was consistent with *EW-B5 Operations and Main Plant Site Groundwater and Surface Water Sampling Program* letter (EHS Support, 2018), which was approved by the NYSDEC in December 2018 (NYSDEC, 2018). Supporting field documents are included in attachments as referenced below.

3.2.1 Groundwater Sampling

In March and June 2019, groundwater samples were collected in accordance with the schedules in **Tables 1 and 2.**

Groundwater purging and well sampling was conducted using low-flow methodology, with purging and sampling conducted using bladder pumps or, in select small diameter/low yielding wells, peristaltic pumps. At Sumps A and B, samples for field parameter measurements and laboratory analysis were collected using disposable bailers. Clean/dedicated tubing, new (clean) disposable pump bladders, and/or new (clean) bailers were used at each location.

During purging, groundwater quality parameters including temperature, pH, conductivity, dissolved oxygen (DO), turbidity, and oxidation-reduction potential (ORP) were monitored using a Horiba flow-through cell. Purging continued until the monitored field parameter readings stabilized, or at low yielding wells, until the water level dropped below the pump and the well was dry/near dry. Where low yield was encountered, wells were allowed to recover until recharge of sufficient water for sampling was achieved. Where insufficient water was present for sampling, well recovery was monitored over several days and the absence of water sufficient for sampling was recorded on field sampling logs. Barometric pressure was also recorded over the course of the monitoring event. Copies of the field sampling logs and a graph illustrating barometric pressure readings over the course of the event are included in **Appendix A**. Purging data, including the water column height in wells prior to purging, pump depths, purge flow rates, drawdown, and water volumes removed are summarized for each sampling event in **Tables 3 and 4**.

Samples were collected directly following purging, except where insufficient water was present, then samples were collected the next day or as soon thereafter as sufficient water recharge occurred. Field-measured water quality parameters (same as those monitored during purging) were recorded just prior to sample collection. Samples for laboratory analysis were pumped or poured (from bailers) directly into sample containers provided by the laboratory. Field water quality parameter measurements for each sample were recorded on the sampling logs (**Appendix A**) and are summarized in **Table 5.**

In February 2019, a grab water sample was collected from extraction well EW-B5 using a bailer, as part of an assessment of chromium concentration trends under pumping conditions in 2019.

3.2.2 Surface Water Sampling

Surface water samples were collected during the March 2019 event in accordance with the schedule in **Table 1**. The sampling locations are as follows (refer to **Figure 3** for locations):

- Upstream location SW-04, located approximately 45 feet upstream of the Site western boundary
- Adjacent location SW-03, located in the river south of former Site Building 56
- Adjacent location SW-02, located in the river south of former Building 8 and the Weir Brook discharge area
- Downstream location SW-01, located near the eastern boundary of the Site

Surface water samples were collected off-shore in areas accessible from shore. Samples were collected using a peristaltic pump with tubing lowered approximately 1 foot below the water surface. Samples were visually observed to be clear and colorless.

Field parameters (temperature, pH, conductivity, DO, turbidity, and ORP) were measured during purging for stability and measured and recorded just prior to collection of samples for analysis. Samples were pumped directly into clean sample containers provided by the laboratory. Field parameters were recorded on field sampling logs included in **Appendix A,** and measurements collected just prior to sampling are included in **Table 4**.

3.3 Sample Laboratory Analysis

Laboratory analysis was conducted by TestAmerica and ALS Laboratories, with applicable New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certification for the analyses performed. Clean sample containers were supplied by the laboratories with preservatives as applicable. The analysis performed, and sample preservations completed in the field are detailed in **Table 6** and summarized below.

Groundwater samples were analyzed in accordance with the schedules in **Tables 1 and 2**, using the following methods:

- Dissolved chromium by United States Environmental Protection Agency (USEPA) Method 6020A, on samples field-filtered with a 0.45 micrometer (µm) filter
- Dissolved hexavalent chromium by USEPA Method 7196, on samples field-filtered with 0.45 µm filter
- Total cyanide by USEPA Method 9012B on unfiltered samples

Surface water samples were analyzed for the following parameters:

- Dissolved vanadium and dissolved chromium by USEPA Method 6020A, on samples field-filtered with a 0.45 micrometer (µm) filter
- Dissolved hexavalent chromium by USEPA Method 7196, on samples field-filtered with 0.45 µm filter
- Free cyanide by USEPA Method OIA-1677, with sample collection and preservation procedures including:
    - Testing for presence of sulfide by pouring groundwater into glass vial with lead acetate test strip.
    - No change in test strip color was observed (no indication of excess sulfide), and the sample was collected in a 40 milliliter (mL) vial with sodium hydroxide preservative and subject to a 14-day hold time.
- Hardness by SM 2340B
- Total dissolved solids by SM 2540C

Upon collection, samples were placed in coolers with ice for transport to the laboratory under chain-of-custody documentation. The analytical results for the samples are summarized in **Table 7** (groundwater results) and **Table 8** (surface water results). The laboratory analytical reports are included in **Appendix B**. Results are discussed in **Section 5**.

USEPA Method 7196 for the analysis of hexavalent chromium specifies a 24-hour hold time, which poses challenges during groundwater sampling events (i.e., shortened field days and daily long-distance travel for cooler shipments). Specifying an analytical method with a longer holding time would offer logistical benefits. To assess the consistency of hexavalent chromium data from different analytical methods, June 2019 samples collected from wells MW-OB14, EW-B5 and AW-C11 were analyzed using EPA Method 218.6 and Standard Methods SM 3500CrD, as well as USEPA Method 7196. The results obtained by the three methods were similar. Further details, including the sample results and an associated recommendation for future sampling events, are provided in **Section 5.4**.

3.4 Quality Control Sampling and Analysis

Quality control (QC) samples were collected in accordance with the procedures detailed in the ROP (EHS Support, 2016), including duplicate and matrix spike/matrix spike duplicate (MS/MSD) samples at a minimum frequency of 5 percent, and equipment blank samples collected daily.

Equipment blanks were used to assess the effectiveness of decontamination procedures. Following decontamination of the bladder pump, a clean bladder and tubing were installed, and a blank was collected by submerging the pump into laboratory-grade water in a clean container, and pumping water through the sample train into sample containers provided by the laboratory.

Duplicate samples collected during this reporting period included the following:

- **March 2019 event:**
    - One duplicate groundwater samples (from EW-B5)
    - One duplicate surface water sample (from SW-03)
- **June 2019 event:**
    - One duplicate groundwater sample (from EW-B5)

Duplicate, MS/MSD, equipment blank and field blank samples were collected and analyzed using the same methods used for groundwater/surface water samples. Analytical results for the duplicate and equipment blank samples are included in **Tables 7 and 8**. Results for all QC samples, including MS/MSD and other laboratory method QC samples are provided in the laboratory reports in **Appendix B**.

3.5 Water Quality Standards and GWES Performance Criteria

Surface water and groundwater quality standards and guidance values for comparison to groundwater and surface water data are derived from New York Code, Rules and Regulations (6 NYCRR 703.5 Table 1) and NYSDEC Technical and Operations Guidance Series (TOGS 1.1.1) (NYSDEC, 1998). Available water quality standards/guidance values (also referred to herein as criteria) for each analyte were provided in the ROP (EHS Support, 2016). The water quality criteria selected for comparison with the Site monitoring data are comprised of the following:

- Class GA groundwater quality standards protective of fresh groundwater for drinking water sources: The GA standards are included in **Table 7**.
- Surface water quality criteria (SWQC) for Class C waters, selected based on New York's classification of the Hudson River in the Site vicinity as "Class C" water: The available criteria for screening include standards/guidance values for protection of human health (based on water supply [H(WS)] or fish consumption [H(FC)]) and/or protection of aquatic life from chronic and acute effects (designated as A[C] and A[A], respectively). The available aquatic protection values (lowest surface water criteria available for fresh Class C waters) were used for screening and are included in **Table 9** (criteria derived based on site-specific water quality).

It is noted that comparison of groundwater data to GA standards is for reference only. Groundwater on-Site is not used and use of on-Site groundwater for any purpose is precluded (pursuant to the Deed Notice filed with Warren County).

GWES performance criteria were developed and presented in the ROP groundwater concentration (CGW) values in ROP Table 4-2 (EHS Support, 2016). These values represent conservative groundwater concentrations for the protection of surface water, as calculated using dilution attenuation factors. The CGW values include:

- Hexavalent Chromium: 2,838 micrograms per Liter (µg/L) for overburden horizon; 80,828 µg/L for bedrock
- Free Cyanide: 1,602 µg/L for overburden horizon; 69,586 µg/L for bedrock
- Vanadium: 2,954 µg/L for overburden horizon; 157,542 µg/L for bedrock

3.6 Data Quality Review

Analytical reports generated for the sampling events completed during this reporting period meet NYSDEC requirements for a Category B data package.

The data were assessed for usability, and Tier II Validation Reports were prepared (**Appendix C**). Overall, the data were found to be usable in present form. The analytical data, updated to include data qualifiers applied based on the data usability review, were uploaded to the NYSDEC website.

4 Water Levels and Groundwater Hydraulics

In March 2019, groundwater wells and the Hudson River staff gauge adjacent to the Site (SG-12) were gauged. Water level measurements and elevations (relative to NGVD29) are summarized in **Table 3**. Well locations and potentiometric surface maps for each groundwater horizon are provided on **Figures 3 through 6**.

The groundwater elevation data show flow conditions consistent with historical data and interpretations, with groundwater flow predominantly to the south except for the deep bedrock where flow is generally southwest. Operation of the French Drain, as well as variation in Hudson River stage, influenced overburden gradients along the southern boundary of the Site. The French Drain system captures overburden groundwater flowing towards the Hudson River and creates a downgradient capture zone that extends up to 60 feet from the trench toward the river. This observation is supported by the hydraulic data presented in **Figure 3** and the evaluation presented in the *Revised Remedy Optimization Report* (EHS Support, 2019a).

In June 2019, select groundwater wells were gauged prior to sampling. The water level measurements and elevations (relative to NGVD29) are summarized in **Table 4**. Given the targeted scope of this sampling event, new potentiometric surface maps were not prepared for the June 2019 event.

Prior to initiating pumping at extraction well EW-B5 in December 2019, pressure transducers with electronic data loggers were installed into well EW-B5 and seven monitoring wells (MW-OB14, MW-OB26, MW-OB34, AW-A14, AW-B14, AW-B15, and AW-C11) located in its vicinity, to provide continuous hydraulic head data (groundwater elevations) prior to and during the operation of well EW-B5. The purpose of this data collection was to support an evaluation of any influence that pumping well EW-B5 may have on the dynamics of groundwater head on the overburden, Horizon A, Horizon B and Horizon C hydraulic setting. An average drawdown of 15 feet was achieved at EW-B5 with the initiation of pumping at EW-B5 in December 2019. No hydraulic, temperature or specific conductivity responses were observed in the monitoring wells in the vicinity of EW-B5 that could be attributed to the pumping of the extraction well. The data and hydrographs were presented in the last semi-annual GSMR (EHS Support, 2019b).

The transducers were subsequently removed in March 2019. As detailed in the *EW-B5 Operations and Main Plant Site Groundwater and Surface Water Sampling Program* (EHS Support, 2018), the transducers will be reinstalled into the same well network (EW-B5, MW-OB14, MW-OB26, MW-OB34, AW-A14, AW-B14, AW-B15 and AW-C11) before pumping is suspended in September 2019 for a one-month scheduled shut-down period. The transducers will remain in place through the shut-down period and when pumping at extraction well EW-B5 is reinitiated in October 2019, in order to provide data for further assessment of groundwater head elevations over this period.

5 Groundwater and Surface Water Sampling Results

The results of groundwater and surface water sampling are discussed below. Field-monitored water quality parameters and laboratory analytical results for groundwater and surface water samples collected during this reporting period are summarized in tabular (**Tables 5 through 9**) and graphical formats (**Figures 7 and 8**) to support the discussions below.

5.1 Field Monitored Water Quality Parameters

The field measurements of temperature, pH, conductivity, DO, turbidity and ORP, which were collected in groundwater and surface water, are included on the field data sheets (**Appendix A**), and the values measured just prior to sampling are included in **Table 5**.

Groundwater geochemical conditions were relatively stable except within localized areas. During this reporting period, groundwater chemistry in the overburden and in the shallow and intermediate bedrock horizons displayed a circum-neutral pH (pH 6 to pH 9), except at certain wells where moderately alkaline (higher pH) levels were measured (**Table 5**). Deep bedrock groundwater pH was circum-neutral. Temperature, pH, DO, ORP, and electrical conductivity were generally observed to decrease with depth. Turbidity was low (0 to 10 nephelometric turbidity units [NTU]) in all samples collected during this reporting period.

Consistent with previous monitoring events, the chemistry of surface water samples was oxidizing, and turbidity and conductivity were low (**Table 5**). The sample pH was circum-neutral to slightly acidic. Over the past two years of monitoring, the river pH has ranged from slightly acidic to slightly alkaline. During discreet events, the pH is generally similar at sampling locations upgradient, adjacent and downgradient from the Site; therefore, there does not appear to be detectable influences on surface water chemistry from groundwater discharging from the Site or surface water discharging from Weir Brook.

5.2 Surface Water Analytical Results and Comparison to Standards

Surface water sampling was designed to provide surface water quality data at four locations in the Hudson River, including near shore locations upstream, adjacent to, and downstream of the Site (SW-01 through SW-04; **Figure 3**).

The results for surface water samples collected during this reporting period were below surface water quality standards. Field-monitored surface water quality parameters are included in **Table 5**, analytical results are summarized in **Table 8** and on **Figures 7 and 8**. Calculated surface water quality standards (dependent on hardness) are included in **Table 9**.

There were no detections of free cyanide, total chromium, hexavalent chromium or vanadium in the surface water samples, demonstrating compliance with the applicable surface water standards.

5.3 Groundwater Analytical Results and Comparison to Standards

The analytical results for chromium and cyanide in groundwater are summarized in **Table 7**, as well as on **Figures 7 and 8,** respectively. For ease in reference and understanding the lateral and vertical distribution, **Figures 7 and 8** show results for all groundwater horizons (i.e., overburden, and shallow, intermediate, and deep bedrock horizons). Well location markers are color-coded to indicate which horizon the well is screened in, and results that exceed the groundwater GA standards are denoted by orange text.

Overall, chromium and cyanide concentrations in groundwater sampled collected during this reporting period were generally lower than in recent sampling rounds. This is consistent with the long-term trend on-Site, which has been an overall decline in groundwater concentrations since the Corrective Measures were implemented in 2003. A detailed discussion of the sample results for each groundwater horizon and area on-Site is provided below, and **Figures 9 through 12** depict trends in select wells on-Site. Further discussion regarding trends at key locations was provided in the NYSDEC-approved *Revised Remedy Optimization Report* (EHS Support, 2019a).

5.3.1 Overburden Groundwater

Key observations for overburden groundwater are as follows:

- Groundwater on-Site is not used, and usage is precluded via institutional control (Deed Notice).
- Groundwater concentrations on-Site have declined over time (since the Corrective Measures were implemented in 2003).
- Constituent concentrations in overburden groundwater were generally lower during this reporting period than in recent events.
- Samples were collected at nine overburden groundwater wells in March 2019. A snow melt event occurred just prior to collection of these samples, which may have had localized effects on the results.
- At inland well MW-OB14, concentrations of both chromium and cyanide in March 2019 were as much as an order of magnitude lower than in recent sampling rounds, and concentrations of chromium were two orders of magnitude below concentrations present prior to the implementation of groundwater remediation on-Site (see historical trend graph in **Appendix D**). During performance of the sampling, ponded water was present at the ground surface around MW-OB14. Despite drier conditions in June 2019, constituent concentrations remained lower in June 2019. An assessment of long-term groundwater concentration trends at the Site is on-going and will include consideration of whether the reductions at MW-OB14 are sustained over time or whether they were temporal changes. Overburden groundwater extraction at Sumps A and B is ongoing in the Central Area, and the area is within the French Drain's hydraulic capture zone.
- At the wells located along the riverbank (MW-OB30 through MW-OB34), trends in constituent concentrations were mixed during the March 2019 sampling event, with cyanide and chromium decreasing at some locations and increasing at others. All results were below the conservative ROP CGW values. Given the snow melt conditions at the time of sampling, the data may not be representative of long-term trends but rather shorter-term fluctuations. Trends will be reassessed after performance of the next semi-annual sampling round in September 2019.
- Concentrations were stable and near or below GA standards in the Eastern Area (MW-31), where groundwater extraction at Sump C was suspended in November 2016.

5.3.2 Shallow Bedrock Groundwater

Two shallow bedrock groundwater wells were sampled at the Site during this reporting period: AW-A11 (March 2019) and AW-A14 (March and June 2019). Key observations for shallow bedrock groundwater are as follows:

- All concentrations were below the ROP CGW values developed for groundwater in the shallow bedrock horizon; therefore, concentrations are not posing a risk to surface water. Groundwater usage on-Site is precluded via institutional control (Deed Notice).
- No GA standard exceedances were present at AW-A11; whereas, chromium concentrations are typically above the GA standard at this location. Ongoing periodic sampling will be utilized to assess long-term trends.
- No GA standard exceedances were present at AW-A14. GA standard exceedances for cyanide were historically present at this well, but concentrations have been below the GA standard since mid-2017.

5.3.3 Intermediate Bedrock Groundwater

Two shallow bedrock groundwater wells were sampled at the Site during this reporting period: AW-B4 (March and June 2019) and AW-B17 (March 2019). Extraction well EW-B5 was sampled in February, March and June 2019. Key observations for intermediate bedrock groundwater are as follows:

- All concentrations were below the ROP CGW values developed for groundwater in the intermediate bedrock horizon; therefore, concentrations are not posing a risk to surface water. Groundwater usage on-Site is precluded via institutional control (Deed Notice).
- No GA standard exceedances were present at AW-B4; whereas, GA standard exceedances for cyanide and chromium have been intermittently present at this location in recent reporting periods.
- No GA standard exceedances were present at AW-B17, which is consistent with recent reporting periods.
- At well EW-B5 (where downward vertical hydraulic gradients from the overburden were historically increased during extraction, and where pumping was reinitiated in mid-December 2018), concentrations of hexavalent chromium were 52 milligrams per Liter (mg/L) and 46 mg/L in February 2019 and June 2019, respectively. These concentrations are of a similar magnitude to the concentrations measured under pumping conditions in 2013 and 2014 (i.e., 34 mg/L and 56 mg/L, respectively). Following the cessation of bedrock pumping in November 2016, hexavalent chromium concentrations generally ranged from 110 to 140 mg/L through September 2018. In accordance with the *EW-B5 Operations and Main Plant Site Groundwater and Surface Water Sampling Program* letter (EHS Support, 2018), data is being collected at EW-B5 in 2019 to assess concentration trends under pumping and non-pumping conditions. A grab sample will be collected in September 2019; then, EW-B5 will be shut down for a 1-month period. A grab sample will be collected in October 2019; then pumping at EW-B5 will be reinitiated. Further assessment of concentration trends at EW-B5 will be presented in the next semi-annual report.
- The impacted intermediate horizon bedrock groundwater at EW-B5 is not presenting a risk to surface water. The ROP included a conservative CGW value of 80 mg/L for hexavalent chromium in the intermediate bedrock horizon for the protection of surface water. Further, the groundwater elevation in well EW-B5 is lower than the river; therefore, the intermediate

bedrock groundwater is not discharging to the river. Groundwater usage on-Site is precluded via institutional control (Deed Notice).

- The March 2019 chromium sample results for extraction well EW-B5 are atypical; therefore, these sample results will not be utilized for the assessment of long-term trends under typical Site conditions. As noted above, a snowmelt event occurred just prior to collection of the groundwater samples in March 2019, which may have affected groundwater sample results. The chromium concentrations measured at EW-B5 were an order of magnitude lower in March 2019 than in June 2019 and in other recent sampling events. While EW-B5 is an intermediate bedrock well, there is no shallow bedrock horizon at EW-B5 (i.e., EW-B5 is screened directly below the overburden). Precipitation infiltration from the ground surface can affect groundwater concentrations in the short-term, so the reduction in chromium concentrations observed at extraction well EW-B5 is not unexpected subsequent to a large snowmelt event.

5.3.4 Deep Bedrock Groundwater

The concentration of hexavalent chromium at well AW-C11 in June 2019 was of a similar magnitude to concentrations that have been measured since November 2016. Concentrations measured at well AW-C11 since 2016 have been lower than, but of a similar magnitude, to the results of the groundwater sampling round that was conducted in 2002 (see historical trend graph in **Appendix D**). Groundwater in the deep bedrock is not used, and usage is precluded via institutional control (Deed Notice).

The March 2019 sample results for monitoring well AW-C11 were atypical (i.e., an order of magnitude lower) compared to concentrations measured since 2016. As noted above, a snowmelt event occurred just prior to collection of the groundwater samples in March 2019, which may have affected groundwater sample results. Unlike the reduction observed at extraction well EW-B5, the reduction in concentrations at AW-C11 is not attributable to infiltration through the subsurface formation, because AW-C11 is a deep (Horizon C) well, screened approximately 160 feet below ground surface. As detailed in the *Response to October 2018 Comments and Issuance of the Revised Remedy Optimization Report* letter (EHS Support, 2019c), Horizon B and Horizon C are separate isolated water-bearing units separated by a 100-foot thick low-hydraulic conductivity interval. As with the localized increases in chromium concentrations at well AW-C11 since 2016, a discrete anthropogenic feature (e.g., potential downward water seepage along casing of the deep well) may have allowed snowmelt to affect a localized reduction in concentrations at AW-C11. Another possibility is a localized geologic feature, such as an open vertical/high-angle fracture connecting the overburden/shallow bedrock and the Horizon C; however, the available hydrogeologic data, geologic data and the Conceptual Site Model indicate this is unlikely.

5.4 Alternate Laboratory Methods for Hexavalent Chromium

Groundwater and surface water samples collected from the Site are analyzed utilizing USEPA Method 7196. Samples analyzed for hexavalent chromium by USEPA Method 7196 must be analyzed with a 24-hour hold time, which poses logistical challenges during groundwater sampling events (i.e., shortened field days and daily long-distance travel for cooler shipments).

To assess possible alternative methods, two additional laboratory methods for hexavalent chromium analysis were run alongside USEPA Method 7196 for samples collected at MW-OB14, EW-B5 and AW-C11 during the June 2019 sampling event. The additional methods were Method 218.6 (with field preservation using an ammonium hydroxide buffer solution) and Method SM 3500CrD. As with the primary samples, the samples collected for analysis by alternate methodologies were placed in coolers with ice for transport to TestAmerica under chain-of-custody documentation. TestAmerica maintains the applicable NYSDOH ELAP certifications for the analyses performed.

The hexavalent chromium results obtained utilizing the three laboratory methods were similar (**Table 10**), demonstrating no field- or matrix-specific interferences. Based on these results, Hercules and BASF propose transitioning to the use of Method 218.6 beginning with the next scheduled sampling event in September 2019. Using Method 218.6, a 28-day hold time is acceptable for samples that are field-preserved with an ammonium hydroxide buffer solution as prescribed in the method. This will allow samples to be held in coolers and shipped along with the other samples at the end of each sampling event, resulting in less downtime associated with shortened field days and daily shipments required when utilizing the current USEPA Method 7196. Further, the ion chromatographic-based Method 218.6 provides for a level of accuracy that is equivalent or greater than the current USEPA Method 7196, which is a colorimetric method.

6 References

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Tables

Table 1
Sampling Event Schedule - March 2019
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Gauge Only	Gauge & Sample	Field Parameters[1]	Total Cyanide[2]	Free Cyanide[3]	Dissolved Chromium[4]	Dissolved Hexavalent Chromium[4]	Dissolved Vanadium[5]	Total Dissolved Solids[6]	Hardness	Sampling Pump	Well Map Grid ID
Overburden Wells											
	MW-31	1	1		1	1				1.75" Bladder Air Tank or Peristaltic Pump	G-4
	MW-OB14	1	1		1	1				1.75" Bladder Pump or Peristaltic Pump	E-4
	MW-OB25	1	1		1	1				1.75" Bladder Pump or Peristaltic Pump	E-5
	MW-OB26	1	1		1	1				1.75" Bladder Pump or Peristaltic Pump	F-4
	MW-OB30	1	1		1	1				Peristaltic Pump	D-5
	MW-OB31	1	1		1	1				Peristaltic Pump	D-5
	MW-OB32	1	1		1	1				Peristaltic Pump	E-5
	MW-OB33	1	1		1	1				Peristaltic Pump	E-5
	MW-OB34	1	1		1	1				Peristaltic Pump	F-5
AP-2											D-5
BP-6											F-4
BP-9											E-5
IP-4											D-4
MW-9											B-4
MW-26											B-5
MW-28											B-5
MW-OB2					Wells to be gauged only.						C-1
MW-OB5											B-3
MW-OB7											B-4
MW-OB13											F-3
MW-OB15											F-1
MW-OB24											C-3
MW-OB27											H-3
WP-CC-12											A-5
Sumps and Former Extraction Well											
	Sump A	1	1		1	1				Grab	D-5
	Sump B	1	1		1	1				Grab	F-4
	EW-B5	1	1		1	1				Grab	F-5
MH-1											B-5
MH-2											C-5
MH-3											E-5
MH-4											E-5
MH-5											G-4
MH-6											I-3

Table 1
Sampling Event Schedule - March 2019
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Gauge Only	Gauge & Sample	Field Parameters[1]	Total Cyanide[2]	Free Cyanide[3]	Dissolved Chromium [4]	Dissolved Hexavalent Chromium[4]	Dissolved Vanadium[5]	Total Dissolved Solids[6]	Hardness	Sampling Pump	Well Map Grid ID
Shallow Bedrock Wells											
	AW-A11	1	1		1	1				1.75" Bladder Normal	D-5
	AW-A14	1	1		1	1				1.75" Bladder Normal	E-5
AW-A2											B-4
AW-A4											A-5
AW-A10											C-5
AW-A15											C-4
MW-19	Wells to be gauged only.										B-4
MW-25S											B-5
MW-27S											B-5
MW-36S											B-3
P-A1											C-1
Intermediate Bedrock Wells											
	AW-B4	1	1		1	1				0.75" Bladder	E-5
	AW-B17	1	1		1	1				1.75" Bladder Normal	F-4
AW-B2											B-4
AW-B3											A-5
AW-B11											C-5
AW-B18											C-4
AW-B19											E-4
AW-B20											F-4
MW-10B	Wells to be gauged only.										F-2
MW-20D											C-3
MW-25D											B-5
MW-30D											G-4
MW-36D											B-3
MW-40B											B-1
Deep Bedrock Wells											
	AW-C11	1	1		1	1				1.75" Bladder Air Tank	E-5
AW-C1											B-1
AW-C2											B-5
AW-C7											A-5
AW-C8	Wells to be gauged only.										B-4
AW-C9											G-2
AW-C10											F-2
MW-20C											C-3
MW-36C											B-3

Table 1
Sampling Event Schedule - March 2019
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Gauge Only	Gauge & Sample	Field Parameters[1]	Total Cyanide[2]	Free Cyanide[3]	Dissolved Chromium [4]	Dissolved Hexavalent Chromium[4]	Dissolved Vanadium[5]	Total Dissolved Solids[6]	Hardness	Sampling Pump	Well Map Grid ID
Surface Water Samples											
	SW-01	1		1	1	1	1	1	1	Peristaltic Pump	I-4
	SW-02	1		1	1	1	1	1	1	Peristaltic Pump	F-5
	SW-03	1		1	1	1	1	1	1	Peristaltic Pump	E-5
	SW-04	1		1	1	1	1	1	1	Peristaltic Pump	A-5
SG-12	Surface water location to be gauged only.										F-5

Notes:

1 - Field parameters to include pH, temperature, dissolved oxygen, redox potential, electrical conductivity, turbidity and barometric pressure.

2 - Total cyanide is an unfiltered sample. Total cyanide only analyzed in groundwater samples only (NYSDEC, 2018).

3 - Free Cyanide is an unfiltered sample. Free Cyanide samples to be collected per lab instructions. Free cyanide analyzed in surface water samples only.

4 - Dissolved chromium and hexavalent chromium samples filtered in the field using 0.45 µm filters.

5 - Disssolved vanadium samples filtered in the field using using 0.45 µm filters. Vanadium analyzed in surface water samples only (NYSDEC, 2018).

6 - Total Dissolved Solids are to be laboratory derived, not calculated.

Pump	Description of Equipment associated with Pump.
1.75" Bladder Normal	1.75 "QED Sample Pro Bladder Pump, with QED MP10 control box and QED MP2030 Air Compressor
1.75" Bladder Air Tank	1.75" QED Sample Pro Bladder Pump, with QED MP15 control box and air cylinder for remote locations (hillside or down by river)
0.75" Bladder	0.75" QED Sample Pro Bladder Pump, with QED MP10 control box and QED MP2030 Air Compressor
Peristaltic Pump	Geotech peristaltic pump, good for 1" wells, or wells with water columns too short for bladder pump use. Also good for remote hillside locations with use of battery packs.

Table 2
Sampling Event Schedule - June 2019
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

	Gauge & Sample	Field Parameters[1]	Total Cyanide[2]	Dissolved Chromium[3]	Dissolved Hexavalent Chromium[3]	Sampling Pump	Well Map Grid ID
Overburden Wells							
	MW-OB14	1	1	1	1	1.75" Bladder Pump or Peristaltic Pump	E-4
	MW-OB25	1	1	1	1	1.75" Bladder Pump or Peristaltic Pump	E-5
	MW-OB26	1	1	1	1	1.75" Bladder Pump or Peristaltic Pump	F-4
Sumps and Former Extraction Well							
	Sump A	1	1	1	1	Grab	D-5
	Sump B	1	1	1	1	Grab	F-4
	EW-B5	1	1	1	1	1.75" Bladder Air Tank	F-5
Shallow Bedrock Well							
	AW-A14	1	1	1	1	1.75" Bladder Normal	E-5
Intermediate Bedrock Well							
	AW-B4	1	1	1	1	0.75" Bladder	E-5
Deep Bedrock Well							
	AW-C11	1	1	1	1	1.75" Bladder Air Tank	E-5

Notes:

1 - Field parameters to include pH, temperature, dissolved oxygen, redox potential, electrical conductivity, turbidity and barometric pressure.

2 - Total cyanide is an unfiltered sample.

3 - Dissolved chromium and hexavalent chromium samples filtered in the field using 0.45 µm filters

Pump	Description of Equipment associated with Pump.
1.75" Bladder Normal	1.75 "QED Sample Pro Bladder Pump, with QED MP10 control box and QED MP2030 Air Compressor
1.75" Bladder Air Tank	1.75" QED Sample Pro Bladder Pump, with QED MP15 control box and air cylinder for remote locations (hillside or down by river)
0.75" Bladder	0.75" QED Sample Pro Bladder Pump, with QED MP10 control box and QED MP2030 Air Compressor
Peristaltic Pump	Geotech peristaltic pump, good for 1" wells, or wells with water columns too short for bladder pump use.

Table 3
Water Level Gauging and Purging Data Summary - March 2019
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Well Name	Gauging Date	Gauging Time	Total Depth (ft btoc)	DTW (ft btoc)	TOC Elev (ft NGVD29)	Water Elevation (ft NGVD29)	Water Column (ft)	Sample Pump Depth (ft btoc)	Purge Date	Sample Pump rate (mL/min)	Pre- Purge WL (ft btoc)	Post Purge WL (ft btoc)	Purge Draw-down (feet)	Water Vol. Purged (gal)	Pump Type	Comments
OVERBURDEN																	
D-5	AP-2	3/18/19	11:29	19.80	12.10	240.04	227.94	7.70	gauged only								
F-4	BP-6	3/18/19	11:15	25.01	20.72	236.74	216.02	4.29	gauged only								
E-5	BP-9	3/18/19	11:35	18.48	11.72	232.52	220.80	6.76	gauged only								
D-4	IP-4	3/18/19	10:57	12.80	9.40	249.40	240.00	3.40	gauged only								
B-4	MW-9	3/18/19	9:35	49.43	17.92	246.25	228.33	31.51	gauged only								
B-5	MW-26	3/18/19	8:50	13.05	8.82	242.10	233.28	4.23	gauged only								
B-5	MW-28	3/18/19	10:22	11.80	1.40	240.20	238.80	10.40	gauged only								
G-4	MW-31	3/18/19	11:08	17.16	7.02	217.58	210.56	10.14	14.66	03/19/19	200	6.83	6.85	0.02	1.5	B	
C-1	MW-OB2	3/18/19	8:41	18.27	14.18	284.70	270.52	4.09	gauged only								
B-3	MW-OB5	3/18/19	9:34	14.12	8.67	263.70	255.03	5.45	gauged only								
B-4	MW-OB7	3/18/19	10:00	15.90	8.88	249.20	240.32	7.02	gauged only								
F-3	MW-OB13	3/18/19	14:26	15.02	9.98	244.50	234.52	5.04	gauged only								
E-4	MW-OB14	3/21/19	8:44	19.41	3.05	241.65	238.60	16.36	14.41	03/21/19	50	2.14	13.10	10.96	6.0	B	
F-1	MW-OB15	3/18/19	14:39	7.22	0.61	262.35	261.74	6.61	gauged only								
C-3	MW-OB24	3/18/19	9:53	18.00	16.97	270.55	253.58	1.03	gauged only								
E-4	MW-OB25	3/18/19	11:50	11.56	7.75	238.45	230.70	3.81	9.70	03/19/19	100	8.05	8.80	0.75	1.00	P	
F-4	MW-OB26	3/18/19	12:17	17.68	11.35	238.45	227.10	6.33	15.22	03/20/19	150	12.78	14.80	2.02	n/a	P	Insufficient water to sample 3/19; grab sample collected the next day
H-3	MW-OB27	3/18/19	Unable to locate														
D-5	MW-OB30	3/18/19	11:50	18.55	8.78	225.71	216.93	9.77	13.39	03/20/19	200	8.20	10.35	2.15	0.5	P	
D-5	MW-OB31	3/18/19	11:46	13.94	6.53	226.02	219.49	7.41	10.24	03/20/19	100	6.31	7.19	0.88	7.0	P	
E-5	MW-OB32	3/18/19	11:43	13.32	8.20	227.96	219.76	5.12	10.88	03/20/19	200	8.44	9.18	0.74	0.75	P	
E-5	MW-OB33	3/18/19	11:31	15.47	6.73	224.03	217.30	8.74	11.21	03/20/19	100	NR	6.95	NR	5.0	P	
F-5	MW-OB34	3/18/19	11:27	16.17	12.10	223.58	211.48	4.07	14.21	03/20/19	180	12.18	13.13	0.95	0.75	P	
D-5	Sump A	3/18/19	10:48	NM	29.23	239.89	210.66	NM	n/a	03/20/19	n/a	n/a	28.84	n/a	n/a	HB	Grab sample
F-4	Sump B	3/18/19	10:41	NM	24.00	236.39	212.39	NM	n/a	03/20/19	n/a	n/a	27.97	n/a	n/a	HB	Grab sample
A-5	WP-CC-12	3/18/19	9:51	19.98	DRY	251.64	DRY	DRY	gauged only								
SHALLOW BEDROCK																	
B-4	AW-A2	3/18/19	Unable to access														Frozen shut
A-5	AW-A4	3/18/19	9:55	39.07	20.84	238.43	217.59	18.23	gauged only								
C-5	AW-A10	3/18/19	10:30	45.64	25.18	239.05	213.87	20.46	gauged only								
D-5	AW-A11	3/18/19	11:16	56.41	25.25	239.60	214.35	31.16	51.41	03/19/19	150	24.92	25.89	0.97	1.5	B	
E-5	AW-A14	3/18/19	11:54	32.95	15.98	236.82	220.84	16.97	27.95	03/20/19	150	16.23	17.87	1.64	8.0	B	
C-4	AW-A15	3/18/19	10:53	34.07	14.71	246.90	232.19	19.36	gauged only								
B-4	MW-19	3/18/19	Unable to locate														
B-5	MW-25S	3/18/19	9:00	41.90	26.71	241.55	214.84	15.19	gauged only								
B-5	MW-27S	3/18/19	10:20	34.21	15.80	240.57	224.77	18.41	gauged only								
B-3	MW-36S	3/18/19	9:38	35.95	23.40	264.85	241.45	12.55	gauged only								
C-1	P-A1	3/18/19	9:00	19.03	17.05	283.30	266.25	1.98	gauged only								

Table 3
Water Level Gauging and Purging Data Summary - March 2019
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Well Name	Gauging Date	Gauging Time	Total Depth (ft btoc)	DTW (ft btoc)	TOC Elev (ft NGVD29)	Water Elevation (ft NGVD29)	Water Column (ft)	Sample Pump Depth (ft btoc)	Purge Date	Sample Pump rate (mL/min)	Pre- Purge WL (ft btoc)	Post Purge WL (ft btoc)	Purge Draw-down (feet)	Water Vol. Purged (gal)	Pump Type	Comments
INTERMEDIATE BEDROCK																	
B-4	AW-B2	3/18/19	9:40	59.65	25.80	248.80	223.00	33.85	gauged only								
A-5	AW-B3	3/18/19	9:40	60.64	26.91	244.70	217.79	33.73	gauge only								
E-5	AW-B4	3/18/19	11:42	46.06	27.60	238.25	210.65	18.46	41.06	03/19/19	100	27.33	28.04	0.71	1.00	B	
C-5	AW-B11	3/18/19	10:27	58.69	30.16	238.65	208.49	28.53	gauged only								
F-4	AW-B17	3/18/19	11:18	47.76	23.76	236.42	212.66	24.00	42.76	03/19/19	150	23.75	37.07	13.32	2.2	B	
C-4	AW-B18	3/18/19	10:55	54.71	34.67	247.30	212.63	20.04	gauged only								
E-4	AW-B19	3/18/19	11:05	52.34	19.43	245.48	226.05	32.91	gauged only								
F-4	AW-B20	3/18/19	14:25	37.06	16.59	243.65	227.06	20.47	gauged only								
F-5	EW-B5	3/18/19	12:11	54.03	44.11	235.75	191.64	9.92	n/a	03/20/19	n/a	44.62	43.35	-1.27	0.25	HB	Grab sample
F-2	MW-10B	3/18/19	10:20	34.77	27.02	254.70	227.68	7.75	gauged only								
C-3	MW-20D	3/18/19	10:01	48.72	45.05	266.90	221.85	3.67	gauged only								
B-5	MW-25D	3/18/19	8:55	61.51	33.73	241.30	207.57	27.78	gauged only								
G-4	MW-30D	3/18/19	11:04	44.54	5.78	217.10	211.32	38.76	gauged only								
B-3	MW-36D	3/18/19	8:43	59.11	42.11	266.40	224.29	17.00	gauged only								
B-1	MW-40B	3/18/19	9:18	54.70	48.97	284.55	235.58	5.73	gauged only								
DEEP BEDROCK																	
B-1	AW-C1	3/18/19	9:13	NM	35.64	283.50	247.86	NM	gauged only								
B-5	AW-C2	3/18/19	9:05	171.94	43.57	241.10	197.53	128.37	gauged only								
A-5	AW-C7	3/18/19	9:44	NM	84.26	245.31	161.05	NM	gauged only								
B-4	AW-C8	3/18/19	10:05	170.20	57.99	249.10	191.11	112.21	gauged only								
G-2	AW-C9	3/18/19	Unable to locate														
F-2	AW-C10	3/18/19	10:16	NM	50.78	254.95	204.17	NM	gauged only								
E-5	AW-C11	3/18/19	11:48	155.35	41.60	238.45	196.85	113.75	150.35	03/20/19	150	40.43	41.42	0.99	3.0	B	
C-3	MW-20C	3/18/19	9:59	NM	73.58	269.25	195.67	NM	gauged only								
B-3	MW-36C	3/18/19	14:29	NM	75.61	266.60	190.99	NM	gauged only								
SURFACE WATER					Water Depth (feet)	Reference Point (ft NGVD29)	Water Elevation (ft NGVD29)										
F-5	SG-12*	3/18/19	11:22	n/a	3.00	210.47	210.47	3.00	gauged only								

Notes:

(1) Water was ponded on the ground surface around MW-OB14, due to snow melt. The water level in MW-OB14 was approximately 9 feet lower after 1 hour of purging.

* The gauge reference point for surface water gauge SG-12 is the elevation of the 3-foot mark on the gauge.

B - bladder pump | HB - hand bailer | P - peristaltic pump
WL - water level | gal - gallons | NR - Not recorded
DTW - Depth to water | mL/min - milliliters per minute | ns - not sampled
ft btoc - feet below top of casing | n/a - Not applicable
ft NGVD - feet relative to National Vertical Geodetic Datum

Table 4
Water Level Gauging and Purging Data Summary - June 2019
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Well Name	Gauging Date	Gauging Time	Total Depth (ft btoc)	DTW (ft btoc)	TOC Elev (ft NGVD29)	Water Elevation (ft NGVD29)	Water Column (ft)	Sample Pump Depth (ft btoc)	Purge Date	Sample Pump rate (mL/min)	Pre- Purge WL (ft btoc)	Post Purge WL (ft btoc)	Purge Draw-down (feet)	Water Vol. Purged (gal)	Pump Type	Comments
OVERBURDEN																	
E-4	MW-OB14	6/17/19	8:38	19.19	10.61	241.65	231.04	8.58	14.90	6/18/19	100	10.60	13.45	2.85	2.0	B	
E-4	MW-OB25	6/17/19	8:30	11.38	8.13	238.45	230.32	3.25	9.78	6/18/19	100	8.11	DRY	DRY	2.00	P	Insufficient water to sample 6/18; sampled next day
F-4	MW-OB26	6/17/19	9:01	16.64	10.16	238.45	228.29	6.48	13.75	6/19/19	100	15.25	16.38	1.13	<1	P	Insufficient water to sample 6/18; sampled next day
D-5	Sump A	6/17/19	8:43	n/a	29.03	239.89	210.86	n/a	n/a	6/18/19	n/a	n/a	28.87	n/a	n/a	HB	
F-4	Sump B	6/17/19	8:35	n/a	23.70	236.39	212.69	n/a	n/a	6/18/19	n/a	n/a	24.45	n/a	n/a	HB	
SHALLOW BEDROCK																	
E-5	AW-A14	6/17/19	8:45	32.61	16.86	236.82	219.96	15.75	27.61	6/18/19	160	16.74	21.36	4.62	2.0	B	
INTERMEDIATE BEDROCK																	
E-5	AW-B4	6/17/19	8:40	46.68	27.49	238.25	210.76	19.19	41.68	6/18/19	100	27.31	28.44	1.13	1.00	B	
F-5	EW-B5	6/17/19	8:49	59.03	47.09	235.75	188.66	11.94	n/a	6/18/19	n/a	n/a	46.20	n/a	n/a	HB	
DEEP BEDROCK																	
E-5	AW-C11	6/17/19	8:35	158.31	41.38	238.45	197.07	116.93	153.31	6/18/19	130	41.48	41.61	0.13	3.00	B	
SURFACE WATER					Water Depth (feet)	Reference Point (ft NGVD29)	Water Elevation (ft NGVD29)										
F-5	SG-12*	6/17/19	9:05	n/a	3.20	210.47	210.67	3.20	gauged only								

Notes:

B - bladder pump
HB - hand bailer
P - peristaltic pump
mL/min - milliliters per minute
gal - gallons
NR - Not recorded
DTW - Depth to water
n/a - Not applicable
ns - not sampled
ft btoc - feet below top of casing
ft NGVD - feet relative to National Vertical Geodetic Datum

Table 5
Field-Monitored Parameters
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Sample Location	Sample ID	Sample Date	Conductivity mS/cm	Dissolved Oxygen mg/L	Oxidation-Reduction Potential mV	pH s.u.	Temperature °C	Turbidity NTU
				NYSDEC Class GA Groundwater Quality Standards (µg/l)					
Overburden									
G-4	MW-31	MW-31_20150805	08/05/15	1.08	0.40	-255	5.71	15.39	1.6
G-4	MW-31	MW-31-20151209	12/09/15	1.09	1.86	-268	6.44	12.38	0.0
G-4	MW-31	MW-31_20160727	07/27/16	0.97	0.00	-266	6.39	18.61	0.0
G-4	MW-31	MW-31_20161201	12/01/16	1.30	0.81	-290	6.37	12.41	0.0
G-4	MW-31	MW-31_20170301	03/01/17	1.23	0.53	-187	6.36	10.43	0.0
G-4	MW-31	MW-31_20170622	06/22/17	1.05	0.00	-284	6.60	14.07	1.0
G-4	MW-31	MW-31_20170913	09/13/17	1.31	0.00	-330	6.75	17.88	0.0
G-4	MW-31	MW-31_20171214	12/14/17	1.17	0.00	-148	6.81	10.91	0.0
G-4	MW-31	MW-31_20180321	03/21/18	1.03	0.52	-284	6.73	7.96	0.0
G-4	MW-31	MW-31_20180613	06/13/18	1.06	0.00	-126	6.75	12.84	2.2
G-4	MW-31	MW-31_20180919	09/19/18	1.38	0.61	-203	6.58	22.22	3.5
G-4	MW-31	MW-31_20190319	03/19/19	0.92	0.00	-87	6.73	8.42	0.0
E-4	MW-OB14	MW-OB14_20150805	08/05/15	0.67	7.30	80	9.98	15.96	1.4
E-4	MW-OB14	MW-OB14A_A(1.0)-20150805 DISSOLVED	08/05/15	-	-	-	-	-	-
E-4	MW-OB14	MW-OB14B_B(0.1)-20150805 DISSOLVED	08/05/15	-	-	-	-	-	-
E-4	MW-OB14	MW-OB14_20160727	07/27/16	0.59	4.23	199	9.69	17.46	0.0
E-4	MW-OB14	MW-OB14_20161129	11/29/16	0.82	1.18	163	8.87	10.69	0.0
E-4	MW-OB14	MW-OB14_20170228	02/28/17	0.40	4.28	6	8.76	11.55	0.0
E-4	MW-OB14	MW-OB14_20170621	06/21/17	0.39	0.00	157	9.87	13.92	0.0
E-4	MW-OB14	MW-OB14_20170913	09/13/17	0.88	0.00	-118	10.59	15.26	1.6
E-4	MW-OB14	MW-OB14_20171212	12/12/17	1.46	4.02	3	11.69	10.24	3.1
E-4	MW-OB14	MW-OB14_20180321	03/21/18	0.49	0.74	23	10.02	8.41	0.0
E-4	MW-OB14	MW-OB14_20180613	06/13/18	0.43	1.84	66	10.11	15.04	3.3
E-4	MW-OB14	MW-OB14_20180918	09/18/18	0.63	1.49	22	9.64	15.67	0.7
E-4	MW-OB14	MW-OB14_20181210	12/10/18	0.42	8.24	208	9.80	9.80	0.0
E-4	MW-OB14	MW-OB14_20190321	03/21/19	0.38	0.12	-98	9.18	6.86	9.7
E-4	MW-OB14	MW-OB14_20190618	06/18/19	0.26	0.00	134	9.37	15.89	2.7
E-4	MW-OB25	MW-OB25-20151209	12/09/15	0.88	4.28	163	6.93	10.81	0.0
E-4	MW-OB25	MW-OB25_20160728	07/28/16	0.76	4.09	167	7.66	20.57	37.2
E-4	MW-OB25	MW-OB25_20161201	12/01/16	0.73	8.14	-4	8.94	9.43	0.0
E-4	MW-OB25	MW-OB25_20170228	02/28/17	0.32	5.34	74	7.99	10.10	0.0
E-4	MW-OB25	MW-OB25_20170621	06/21/17	0.85	4.56	220	9.89	17.22	0.0
E-4	MW-OB25	MW-OB25_20170913	09/13/17	0.52	3.14	12	9.30	23.38	6.1
E-4	MW-OB25	MW-OB25_20171212 (3)	12/12/17	1.08	13.71	19	7.44	8.41	9.5
E-4	MW-OB25	MW-OB25_20180320	03/20/18	0.72	8.03	119	7.90	6.42	1.2
E-4	MW-OB25	MW-OB25_20180613 (3)	06/13/18	0.60	4.86	182	7.89	16.40	13.8
E-4	MW-OB25	MW-OB25_20180919 (3)	09/19/18	0.48	1.03	-14	8.25	23.75	1.4
E-4	MW-OB25	MW-OB25_20181210	12/10/18	0.48	4.99	181	8.08	7.43	1.1
E-4	MW-OB25	MW-OB25_20190319	03/19/19	0.32	5.21	202	7.11	6.35	7.1
E-4	MW-OB25	MW-OB25_20190619 (3)	06/19/19	0.79	22.87	289	6.93	17.16	0.0
F-4	MW-OB26	MW-OB26_20160728	07/28/16	1.16	0.00	251	7.15	17.39	49.9
F-4	MW-OB26	MW-OB26_20161201	12/01/16	1.51	2.39	7	12.21	8.63	12.5
F-4	MW-OB26	MW-OB26_20170228	02/28/17	1.40	3.38	159	8.18	11.06	0.0
F-4	MW-OB26	MW-OB26_20170622	06/22/17	1.20	5.30	193	10.69	19.82	0.0
F-4	MW-OB26	MW-OB26_20170914	09/14/17	0.96	1.66	-215	9.88	17.49	1.2
F-4	MW-OB26	MW-OB26_20171213 (2)	12/13/17	-	-	-	-	-	-
F-4	MW-OB26	MW-OB26_20180320	03/20/18	1.14	1.35	119	8.53	9.88	1.5
F-4	MW-OB26	MW-OB26_20180614 (3)	06/14/18	0.81	7.69	86	9.11	18.81	8.3
F-4	MW-OB26	MW-OB26_20180919 (3)	09/19/18	1.07	2.92	-3	8.05	23.46	4.9
F-4	MW-OB26	MW-OB26_20181211 (3)	12/11/18	1.02	7.13	251	8.58	9.62	9.8
F-4	MW-OB26	MW-OB26_20190320 (3)	03/20/19	0.44	7.04	82	9.12	12.72	5.7
F-4	MW-OB26	MW-OB26_20190619 (3)	06/19/19	1.07	12.82	212	7.18	17.80	2.7

Table 5
Field-Monitored Parameters
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Sample Location	Sample ID	Sample Date	Conductivity	Dissolved Oxygen	Oxidation-Reduction Potential	pH	Temperature	Turbidity
				mS/cm	mg/L	mV	s.u.	°C	NTU
NYSDEC Class GA Groundwater Quality Standards (µg/l)									
D-5	MW-OB30	MW-OB30-20151209 (3)	12/09/15	3.87	2.17	-161	11.08	8.92	60.4
D-5	MW-OB30	MW-OB30-20151209F	12/10/15	-	-	-	-	-	-
D-5	MW-OB30	MW-OB30-20151209A(1.0)	12/09/15	-	-	-	-	-	-
D-5	MW-OB30	MW-OB30-20151209A(1.0)	12/10/15	-	-	-	-	-	-
D-5	MW-OB30	MW-OB30-20151209B(0.1)	12/09/15	-	-	-	-	-	-
D-5	MW-OB30	MW-OB30-20151209B(0.1)	12/10/15	-	-	-	-	-	-
D-5	MW-OB30	MW-OB30_20160727	07/27/16	2.37	2.95	-110	11.54	28.48	0.0
D-5	MW-OB30	MW-OB30_20161130 (3)	11/30/16	1.93	3.55	87	10.48	11.99	137.0
D-5	MW-OB30	MW-OB30_20170118	01/18/17	2.31	5.33	-95	11.45	12.62	2.2
D-5	MW-OB30	MW-OB30_20170302	03/02/17	1.45	2.73	-140	11.10	6.72	0.0
D-5	MW-OB30	MW-OB30_20170425	04/25/17	1.84	6.86	-39	11.87	9.75	0.8
D-5	MW-OB30	MW-OB30_20170622	06/22/17	1.68	0.00	-157	11.99	21.78	0.0
D-5	MW-OB30	MW-OB30_20170724 (4)	07/24/17	2.02	1.09	-32	12.77	14.44	0.6
D-5	MW-OB30	MW-OB30_20170913	09/13/17	1.70	0.00	-212	11.85	23.78	1.2
D-5	MW-OB30	MW-OB30_20190320	03/20/19	0.71	0.00	59	10.96	11.46	3.1
D-5	MW-OB30	MW-OB30_20171220	12/20/17	2.32	1.90	-9	10.88	10.80	4.0
D-5	MW-OB30	MW-OB30_20180321	03/21/18	1.17	2.14	-121	10.07	8.27	0.0
D-5	MW-OB30	MW-OB30_20180614	06/14/18	1.34	2.69	-72	9.17	17.65	0.2
D-5	MW-OB30	MW-OB30_20180919	09/19/18	1.31	0.00	21	10.66	17.23	0.0
D-5	MW-OB31	MW-OB31-20151209	12/09/15	0.99	1.30	-272	9.20	11.40	1.8
D-5	MW-OB31	MW-OB31-20151209F	12/09/15	-	-	-	-	-	-
D-5	MW-OB31	MW-OB31-20151209F	12/10/15	-	-	-	-	-	-
D-5	MW-OB31	MW-OB31-20151209A(1.0)	12/09/15	-	-	-	-	-	-
D-5	MW-OB31	MW-OB31-20151209A(1.0)	12/10/15	-	-	-	-	-	-
D-5	MW-OB31	MW-OB31-20151209B(0.1)	12/09/15	-	-	-	-	-	-
D-5	MW-OB31	MW-OB31-20151209B(0.1)	12/10/15	-	-	-	-	-	-
D-5	MW-OB31	MW-OB31_20160727	07/27/16	0.74	1.66	-176	6.71	20.32	40.9
D-5	MW-OB31	MW-OB31_20161201	12/01/16	0.85	0.85	-138	8.30	11.84	51.3
D-5	MW-OB31	MW-OB31_20170118	01/18/17	2.01	1.50	-240	9.32	9.43	2.5
D-5	MW-OB31	MW-OB31_20170302	03/02/17	0.84	2.30	-141	9.02	5.31	0.0
D-5	MW-OB31	MW-OB31_20170425	04/25/17	1.86	0.00	219	10.40	10.27	1.5
D-5	MW-OB31	MW-OB31_20170622	06/22/17	1.72	0.00	-273	10.57	22.95	0.0
D-5	MW-OB31	MW-OB31_20170725	07/25/17	1.29	0.00	-246	11.26	14.46	3.0
D-5	MW-OB31	MW-OB31_20170913	09/13/17	1.53	0.02	-412	10.10	18.64	2.5
D-5	MW-OB31	MW-OB31_20171214	12/14/17	2.82	0.61	-367	9.07	10.70	0.9
D-5	MW-OB31	MW-OB31_20180321	03/21/18	1.29	0.00	-312	9.02	6.08	0.0
D-5	MW-OB31	MW-OB31_20180614	06/14/18	1.15	0.00	-329	9.64	20.00	0.0
D-5	MW-OB31	MW-OB31_20180919	09/19/18	0.90	0.00	-271	9.44	18.80	3.2
D-5	MW-OB31	MW-OB31_20190320	03/20/19	0.93	3.44	-116	10.51	7.36	1.4
E-5	MW-OB32	MW-OB32-20151208	12/08/15	1.24	2.78	212	7.79	11.25	0.0
E-5	MW-OB32	MW-OB32-20151208F	12/08/15	-	-	-	-	-	-
E-5	MW-OB32	MW-OB32-20151208-A(1.0)	12/08/15	-	-	-	-	-	-
E-5	MW-OB32	MW-OB32-20151208-B(0.1)	12/08/15	-	-	-	-	-	-
E-5	MW-OB32	MW-OB32_20160726	07/26/16	0.90	0.00	202	7.79	17.06	0.0
E-5	MW-OB32	MW-OB32_20161201	12/01/16	1.15	2.81	163	7.14	11.84	0.0
E-5	MW-OB32	MW-OB32_20170302	03/02/17	0.85	5.36	218	7.18	4.59	0.0
E-5	MW-OB32	MW-OB32_20170425	04/25/17	1.20	2.15	292	7.57	8.98	0.0
E-5	MW-OB32	MW-OB32_20170622	06/22/17	1.44	0.17	247	7.65	15.48	0.0
E-5	MW-OB32	MW-OB32_20170725	07/25/17	1.06	0.22	261	8.18	14.54	1.2
E-5	MW-OB32	MW-OB32_20170913	09/13/17	1.61	0.00	54	7.85	22.22	0.0
E-5	MW-OB32	MW-OB32_20171214	12/14/17	3.66	0.41	150	6.90	8.85	0.4
E-5	MW-OB32	MW-OB32_20180321	03/21/18	0.76	5.81	252	7.62	9.32	0.0
E-5	MW-OB32	MW-OB32_20180614	06/14/18	1.43	0.00	177	8.05	14.16	0.9
E-5	MW-OB32	MW-OB32_20180919	09/19/18	0.95	0.00	177	7.54	16.64	0.0
E-5	MW-OB32	MW-OB32_20190320	03/20/19	0.53	7.92	332	7.83	7.54	0.0

Table 5
Field-Monitored Parameters
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Sample Location	Sample ID	Sample Date	Conductivity mS/cm	Dissolved Oxygen mg/L	Oxidation-Reduction Potential mV	pH s.u.	Temperature °C	Turbidity NTU
NYSDEC Class GA Groundwater Quality Standards (µg/l)									
E-5	MW-OB33	MW-OB33-20151208	12/08/15	0.63	1.61	156	9.12	12.16	0.0
E-5	MW-OB33	DUP-20151208-2[b]	12/08/15	-	-	-	-	-	-
E-5	MW-OB33	MW-OB33-20151208F	12/08/15	-	-	-	-	-	-
E-5	MW-OB33	DUP20151208-2F	12/08/15	-	-	-	-	-	-
E-5	MW-OB33	MW-OB33-20151208A(1.0)	12/08/15	-	-	-	-	-	-
E-5	MW-OB33	MW-OB33-20151208B(0.1)	12/08/15	-	-	-	-	-	-
E-5	MW-OB33	MW-OB33_20160726	07/26/16	0.53	0.82	265	8.35	17.05	620.0
E-5	MW-OB33	MW-OB33_20161201	12/01/16	0.56	4.19	190	8.09	14.43	152.0
E-5	MW-OB33	MW-OB33_20170302	03/02/17	0.74	3.83	158	8.32	6.91	4.7
E-5	MW-OB33	MW-OB33_20170622	06/22/17	0.85	0.00	233	9.37	14.54	0.0
E-5	MW-OB33	MW-OB33_20170725	07/25/17	0.45	0.00	132	7.38	18.45	0.0
E-5	MW-OB33	MW-OB33_20170913	09/13/17	0.47	1.82	-134	11.26	17.86	0.6
E-5	MW-OB33	MW-OB33_20171214	12/14/17	0.52	1.96	241	6.45	10.26	1.6
E-5	MW-OB33	MW-OB33_20180321	03/21/18	0.69	2.40	199	8.91	6.68	2.5
E-5	MW-OB33	MW-OB33_20180614	06/14/18	0.74	0.00	261	10.31	12.99	1.0
E-5	MW-OB33	MW-OB33_20180919	09/19/18	0.49	1.35	274	8.04	14.86	0.0
E-5	MW-OB33	MW-OB33_20190320	03/20/19	0.49	3.14	302	9.36	7.61	4.0
F-5	MW-OB34	MW-OB34-20151208	12/08/15	5.81	7.81	-235	7.69	10.88	0.9
F-5	MW-OB34	MW-OB34-20151208F	12/08/15	-	-	-	-	-	-
F-5	MW-OB34	MW-OB34-20151208A(1.0)	12/08/15	-	-	-	-	-	-
F-5	MW-OB34	MW-OB34-20151208B(0.1)	12/08/15	-	-	-	-	-	-
F-5	MW-OB34	MW-OB34_20160726	07/26/16	3.03	0.00	-45	7.08	21.31	0.0
F-5	MW-OB34	MW-OB34_20161201	12/01/16	3.47	0.73	-145	6.74	11.42	0.0
F-5	MW-OB34	MW-OB34_20170302	03/02/17	0.89	5.45	6	6.13	8.46	0.0
F-5	MW-OB34	MW-OB34_20170622	06/22/17	1.65	0.00	-24	6.93	24.67	0.0
F-5	MW-OB34	MW-OB34_20170725	07/25/17	1.61	3.56	95	7.30	13.49	2.6
F-5	MW-OB34	MW-OB34_20170913	09/13/17	2.48	1.32	-72	8.16	15.67	0.0
F-5	MW-OB34	MW-OB34_20171214	12/14/17	2.36	0.00	142	6.14	8.98	9.9
F-5	MW-OB34	MW-OB34_20180321	03/21/18	1.89	0.47	11	6.95	5.89	0.0
F-5	MW-OB34	- (2)	06/14/18	-	-	-	-	-	-
F-5	MW-OB34	MW-OB34_20180919	09/19/18	2.74	0.00	-22	6.96	20.96	0.0
F-5	MW-OB34	MW-OB34_20190320	03/20/19	0.78	0.00	121	6.50	7.99	0.0
D-5	SUMP A	Sump_A_20160726	07/26/16	0.76	3.84	247	7.86	20.37	38.1
D-5	SUMP A	SUMPA_20161130	11/30/16	1.29	10.03	183	7.17	10.92	0.0
D-5	SUMP A	Sump_A_20170228	02/28/17	0.46	3.90	180	5.86	17.70	85.4
D-5	SUMP A	Sump_A_20170425	04/25/17	0.94	4.67	67	8.19	10.20	0.3
D-5	SUMP A	Sump_A_20170621	06/21/17	0.90	11.09	259	10.36	16.32	0.0
D-5	SUMP A	Sump_A_20170724	07/24/17	0.81	11.52	258	6.94	14.48	340
D-5	SUMP A	Sump_A_20170912	09/12/17	0.98	2.38	118	7.46	16.03	10.9
D-5	SUMP A	Sump_A_20171212	12/12/17	1.44	4.17	164	7.90	10.52	13.7
D-5	SUMP A	Sump_A_20180322	03/22/18	0.45	7.29	86	7.27	12.82	329
D-5	SUMP A	Sump_A_20180614	06/14/18	0.85	27.53	155	8.20	13.31	6.4
D-5	SUMP A	Sump_A_20180918	09/18/18	1.12	6.73	84	7.98	19.58	31.8
D-5	SUMP A	Sump_A_20181211	12/11/18	1.27	3.33	155	7.73	11.69	1.7
D-5	SUMP A	SumpA_20190320	03/20/19	0.60	4.61	252	8.25	11.81	4.2
D-5	SUMP A	SumpA_20190618	06/18/19	0.73	18.36	303	8.26	15.44	0.0

Table 5
Field-Monitored Parameters
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Sample Location	Sample ID	Sample Date	Conductivity	Dissolved Oxygen	Oxidation-Reduction Potential	pH	Temperature	Turbidity
				mS/cm	mg/L	mV	s.u.	°C	NTU
NYSDEC Class GA Groundwater Quality Standards (µg/l)									
F-5	SUMP B	Sump_B_20160726	07/26/16	0.38	4.28	235	6.54	21.18	0.0
F-5	SUMP B	SUMPB_20161130	11/30/16	0.36	7.33	180	5.99	10.12	1.8
F-5	SUMP B	SUMPB_20170228	02/28/17	0.43	4.86	183	6.10	18.08	0.2
F-5	SUMP B	SUMPB_20170621	06/21/17	0.48	9.64	247	10.52	19.17	0.0
F-5	SUMP B	SUMPB_20170724	07/24/17	0.30	8.41	279	7.92	17.16	0.4
F-5	SUMP B	SUMPB_20170912	09/12/17	0.92	5.42	-5	6.81	21.55	0.0
F-5	SUMP B	SUMPB_20171212	12/12/17	0.63	5.27	178	7.00	10.85	1.7
F-5	SUMP B	SUMPB_20180322	03/22/18	1.03	6.64	189	7.52	12.72	42.2
F-5	SUMP B	SUMPB_20180614	06/14/18	0.26	5.50	232	7.96	19.79	3.5
F-5	SUMP B	SUMPB_20180918	09/18/18	0.42	7.05	185	7.90	22.15	2.9
F-5	SUMP B	SUMPB_20181210	12/10/18	0.74	14.70	335	8.46	8.87	0.5
F-5	SUMP B	SUMPB_20190320	03/20/19	0.60	6.35	277	8.10	13.11	8.4
F-5	SUMP B	SUMPB_20190618	06/18/19	0.55	14.34	285	8.22	20.22	0.0
Shallow Bedrock									
D-5	AW-A11	AW-A11_20150730	07/30/15	1.04	0.39	54	8.65	16.50	0.6
D-5	AW-A11	AW-A11-20151209	12/09/15	1.15	2.45	-30	8.77	11.39	0.0
D-5	AW-A11	AW-A11_20160728	07/28/16	0.86	0.00	56	9.01	16.87	0.0
D-5	AW-A11	AW-A11_20161202	12/02/16	0.85	0.86	3	8.67	11.47	0.0
D-5	AW-A11	AW-A11_20170301	03/01/17	1.18	1.00	-19	8.34	11.03	0.0
D-5	AW-A11	AW-A11_20170621	06/21/17	0.77	0.00	63	8.53	15.40	0.0
D-5	AW-A11	AW-A11_20170724	07/24/17	0.56	0.00	89	9.64	14.76	1.2
D-5	AW-A11	AW-A11_20170914	09/14/17	0.80	0.00	-212	8.84	16.01	0.0
D-5	AW-A11	AW-A11_20171212	12/12/17	0.76	4.61	-154	8.80	8.92	8.8
D-5	AW-A11	AW-A11_20180320	03/20/18	0.75	0.00	-104	8.80	11.31	0.0
D-5	AW-A11	AW-A11_20180614	06/14/18	0.50	0.00	69	8.81	16.85	2.1
D-5	AW-A11	AW-A11_20180919	09/19/18	0.53	3.56	94	8.84	14.71	0.0
D-5	AW-A11	AW-A11_20190319	03/19/19	0.43	0.00	-18	8.70	11.51	0.0
E-5	AW-A14	AW-A14_20150730	07/30/15	0.83	0.83	-4	8.74	15.72	1.7
E-5	AW-A14	AW-A14-20151209	12/09/15	0.64	8.96	-165	8.78	10.21	0.0
E-5	AW-A14	AW-A14_20160727	07/27/16	0.61	0.00	-77	7.36	15.16	0.0
E-5	AW-A14	AW-A14_20161130	11/30/16	0.95	1.41	-191	7.39	9.74	0.0
E-5	AW-A14	AW-A14_20170228	02/28/17	1.00	0.79	-244	8.29	12.55	0.0
E-5	AW-A14	AW-A14_20170621	06/21/17	0.86	0.00	-91	8.21	13.90	0.0
E-5	AW-A14	AW-A14_20170914	09/14/17	0.77	0.96	-170	9.68	13.95	0.0
E-5	AW-A14	AW-A14_20171212	12/12/17	1.05	0.00	-152	7.97	10.97	2.3
E-5	AW-A14	AW-A14_20180322	03/22/18	0.86	0.30	-186	8.31	9.06	0.0
E-5	AW-A14	AW-A14_20180614	06/14/18	0.80	0.00	-82	9.17	18.59	0.8
E-5	AW-A14	AW-A14_20180919	09/19/18	0.73	0.00	-138	9.08	15.21	1.7
E-5	AW-A14	AW-A14_20181211	12/11/18	1.21	6.49	-80	8.52	9.62	2.8
E-5	AW-A14	AW-A14_20190320	03/20/19	0.50	5.71	-87	8.32	11.18	8.2
E-5	AW-A14	AW-A14_20190618	06/18/19	0.75	0.00	-212	8.52	11.26	1.8

Table 5
Field-Monitored Parameters
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Sample Location	Sample ID	Sample Date	Conductivity mS/cm	Dissolved Oxygen mg/L	Oxidation-Reduction Potential mV	pH s.u.	Temperature °C	Turbidity NTU
					NYSDEC Class GA Groundwater Quality Standards (µg/l)				
Intermediate Bedrock									
E-5	AW-B4	AW-B4_20150731	07/31/15	2.53	5.85	-34	7.15	17.33	1.0
E-5	AW-B4	AW-B4_A(1.0)-20150731 Diss	07/31/15	-	-	-	-	-	-
E-5	AW-B4	AW-B4_B(0.1)-20150731 Diss	07/31/15	-	-	-	-	-	-
E-5	AW-B4	AW-B4-20151209	12/09/15	2.85	0.98	-120	6.87	8.12	0.0
E-5	AW-B4	AW-B4_20160729	07/29/16	1.10	0.00	-7	7.30	25.62	0.0
E-5	AW-B4	AW-B4_20161130	11/30/16	0.66	2.83	21	6.95	10.31	3.2
E-5	AW-B4	AW-B4_20170302	03/02/17	0.93	9.32	-54	6.92	8.75	0.0
E-5	AW-B4	AW-B4_20170621	06/21/17	0.83	0.00	-124	7.21	18.67	0.0
E-5	AW-B4	AW-B4_20190319	03/19/19	0.61	0.39	228	6.87	7.15	8.2
E-5	AW-B4	AW-B4_20170913	09/13/17	0.76	0.00	-40	7.50	22.47	2.9
E-5	AW-B4	AW-B4_20171214	12/14/17	0.84	0.00	-18	7.00	6.45	8.3
E-5	AW-B4	AW-B4_20180321	03/21/18	0.91	0.00	-108	7.30	9.14	0.0
E-5	AW-B4	AW-B4_20180613	06/13/18	0.89	0.05	-117	6.90	17.14	0.6
E-5	AW-B4	AW-B4_20180918	09/18/18	0.60	5.65	144	8.36	19.71	9.2
E-5	AW-B4	AW-B4_20181211	12/11/18	0.74	0.00	292	7.18	8.62	2.2
E-5	AW-B4	AW-B4_20190319	03/19/19	0.61	0.39	228	6.87	7.15	8.2
E-5	AW-B4	AW-B4_20190618	06/18/19	0.97	3.03	248	7.25	16.17	1.7
F-4	AW-B17	AW-B17_20150806	08/06/15	1.26	0.23	-192	7.24	14.89	14.0
F-4	AW-B17	AW-B17-20151209	12/09/15	1.23	0.61	-131	6.87	10.23	0.0
F-4	AW-B17	AW-B17_20160727	07/27/16	0.97	0.00	-100	6.46	20.53	0.0
F-4	AW-B17	AW-B17_20161130	11/30/16	0.89	0.81	-174	6.97	10.64	2.5
F-4	AW-B17	AW-B17_20170301	03/01/17	1.15	0.62	-266	7.30	10.99	1.8
F-4	AW-B17	AW-B17_20170620	06/20/17	0.95	0.00	-119	7.67	15.39	1.3
F-4	AW-B17	AW-B17_20170912	09/12/17	1.03	0.30	-175	7.88	18.25	14.1
F-4	AW-B17	AW-B17_20171214	12/14/17	2.52	0.55	-165	6.46	7.06	3.5
F-4	AW-B17	AW-B17_20180320	03/20/18	0.98	0.00	-204	7.41	10.67	0.0
F-4	AW-B17	AW-B17_20180613	06/13/18	-0.81	0.00	-100	7.97	18.60	7.7
F-4	AW-B17	AW-B17_20180918	09/18/18	0.75	5.25	-71	7.58	21.09	9.7
F-4	AW-B17	AW-B17_20190319	03/19/19	0.67	0.00	-110	7.84	11.08	0.0
F-5	EW-B5	EW-B5_20160726	07/28/16	2.59	1.60	788	8.17	21.25	10.3
F-5	EW-B5	EW-B5_20161202	12/02/16	2.50	0.81	47	7.89	11.08	0.0
F-5	EW-B5	EW-B5_20170118	01/18/17	3.49	1.01	-5	8.55	10.03	1.8
F-5	EW-B5	EW-B5_20170301	03/01/17	2.77	0.84	-74	6.89	13.36	3.0
F-5	EW-B5	EW-B5_20170621	06/21/17	3.32	0.00	-17	9.37	16.32	0.0
F-5	EW-B5	EW-B5_20170725	07/25/17	3.59	0.00	220	8.59	11.98	0.7
F-5	EW-B5	EW-B5_20170914	09/14/17	3.62	0.26	106	8.65	12.99	1.9
F-5	EW-B5	DUP_20170914	09/14/17	3.62	0.26	106	8.65	12.99	1.9
F-5	EW-B5	EW-B5_20171212	12/12/17	3.90	0.44	62	8.46	9.48	5.3
F-5	EW-B5	Dup_20171212	12/12/17	3.90	0.44	62	8.46	9.48	5.3
F-5	EW-B5	EW-B5_20180322	03/22/18	3.68	0.59	-104	9.16	11.91	1.2
F-5	EW-B5	DUP01_20180322	03/22/18	3.68	0.59	-104	9.16	11.91	1.2
F-5	EW-B5	EW-B5_20180613	06/13/18	3.52	0.00	-25	9.10	12.06	1.8
F-5	EW-B5	DUP01_20180613	06/13/18	3.52	0.00	-25	9.10	12.06	1.8
F-5	EW-B5	EW-B5_20180918	09/18/18	3.42	1.48	83	8.53	13.41	0.8
F-5	EW-B5	DUP_20180918	09/18/18	3.42	1.48	83	8.53	13.41	0.8
F-5	EW-B5	EW-B5_20181210	12/10/18	1.99	0.00	180	8.30	8.70	1.6
F-5	EW-B5	DUP_20181210	12/10/18	1.99	0.00	180	8.30	8.70	1.6
F-5	EW-B5	EW-B5_20190114	01/14/19	2.73	3.00	266	6.89	12.24	0.0
F-5	EW-B5	EW-B5_20190320	03/20/19	2.43	11.80	81	8.14	14.83	0.3
F-5	EW-B5	DUP_20190320	03/20/19	2.43	11.80	81	8.14	14.83	0.3
F-5	EW-B5 (6)	EW-B5_20190618	06/18/19	2.54	14.88	302	8.16	17.42	0.0
F-5	EW-B5 (6)	DUP_D_20190618	06/18/19	2.54	14.88	302	8.16	17.42	0.0

Table 5
Field-Monitored Parameters
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Sample Location	Sample ID	Sample Date	Conductivity	Dissolved Oxygen	Oxidation-Reduction Potential	pH	Temperature	Turbidity
				mS/cm	mg/L	mV	s.u.	°C	NTU
				NYSDEC Class GA Groundwater Quality Standards (µg/l)					
Deep Bedrock									
E-5	AW-C11	AW-C11_20150806	08/06/15	1.55	0.55	-75	6.80	14.27	7.5
E-5	AW-C11	AW-C11_A(1.0)-20150806 Diss	08/06/15	-	-	-	-	-	-
E-5	AW-C11	AW-C11_B(0.1)-20150806 Diss	08/06/15	-	-	-	-	-	-
E-5	AW-C11	AW-C11-20151210	12/10/15	1.40	6.00	-42	6.25	10.87	16.3
E-5	AW-C11	AW-C11_20160728	07/28/16	1.61	0.00	72	5.71	17.90	38.1
E-5	AW-C11	AW-C11_20161130	11/30/16	1.61	0.58	-16	6.37	10.94	20.4
E-5	AW-C11	AW-C11_20170915	09/15/17	1.50	0.00	-48	7.16	19.99	0.5
E-5	AW-C11	AW-C11_20171212	12/12/17	1.58	0.43	37	6.69	7.34	9.9
E-5	AW-C11	AW-C11_20180322	03/22/18	1.43	0.00	-51	7.20	12.38	7.1
E-5	AW-C11	AW-C11_20180614	06/14/18	1.49	0.00	134	7.45	14.52	5.7
E-5	AW-C11	AW-C11_20180919	09/19/18	1.65	0.78	103	7.07	19.97	6.0
E-5	AW-C11	AW-C11_20181211	12/11/18	1.07	5.00	-1	7.58	9.08	8.3
E-5	AW-C11	AW-C11_20190321	03/21/19	1.14	0.43	-39	7.43	11.34	2.9
E-5	AW-C11	AW-C11_20190618	06/18/19	1.29	0.00	73	6.60	13.46	4.7
Surface Water									
I4	SW-01	SW-01_20150729	07/29/15	0.08	4.84	217	6.03	23.03	1.3
I4	SW-01	SW-01-20151208	12/08/15	0.09	11.57	164	6.07	1.78	0.0
I4	SW-01	SW-01_20160726	07/26/16	0.13	6.39	227	6.02	25.66	26.4
I4	SW-01	SW-01_20161201	12/01/16	0.11	7.07	199	4.87	15.56	0.0
I4	SW-01	SW-01_20170227	02/27/17	0.08	18.61	171	5.28	3.05	0.0
I4	SW-01	SW-01_20170622	06/22/17	0.12	5.87	187	6.44	22.02	0.3
I4	SW-01	SW-01_20170724	07/24/17	0.10	6.76	234	4.77	19.75	0.9
I4	SW-01	SW-01_20170912	09/12/17	0.25	5.57	108	6.39	16.80	0.8
I4	SW-01	SW-01_20171213	12/13/17	0.16	13.11	264	5.47	0.68	4.0
I4	SW-01	SW-01_20180320	03/20/18	0.08	10.50	142	5.83	2.42	0.0
I4	SW-01	SW-01_20180612	06/12/18	0.17	7.45	64	9.05	25.04	0.0
I4	SW-01	SW-01_20180920	09/20/18	0.21	6.10	280	5.75	16.34	0.4
I4	SW-01	SW-01_20190321	03/21/19	0.07	12.62	333	5.25	4.90	4.9
F5	SW-02	SW-02_20150729	07/29/15	0.08	3.51	205	6.47	25.97	1.0
F5	SW-02	DUP-M3_20150729	07/29/15	-	-	-	-	-	-
F5	SW-02	SW-02-20151208	12/08/15	0.09	10.91	137	6.81	5.68	0.0
F5	SW-02	SW-02_20160726	07/26/16	0.91	5.71	281	4.96	32.45	0.0
F5	SW-02	SW-02_20161201	12/01/16	0.12	8.14	248	4.73	10.80	0.0
F5	SW-02	SW-02_20170622	06/22/17	0.11	5.76	144	8.04	24.93	1.5
F5	SW-02	SW-02_20170724	07/24/17	0.07	6.93	192	8.00	17.70	1.5
F5	SW-02	SW-02_20170912	09/12/17	0.24	6.26	112	6.71	17.82	0.5
F5	SW-02	SW-02_20171213	12/13/17	0.10	10.36	275	6.11	1.58	3.5
F5	SW-02	SW-02_20180320	03/20/18	0.09	9.40	128	6.23	3.80	0.0
F5	SW-02	SW-02_20180612	06/12/18	0.13	6.65	120	9.54	24.63	0.0
F5	SW-02	SW-02_20180920	09/20/18	0.14	6.99	126	6.55	21.15	3.7
F5	SW-02	SW-02_20190321	03/21/19	0.07	8.52	373	5.35	5.32	4.6

Table 5
Field-Monitored Parameters
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Map Grid ID	Sample Location	Sample ID	Sample Date	Conductivity	Dissolved Oxygen	Oxidation-Reduction Potential	pH	Temperature	Turbidity
				mS/cm	mg/L	mV	s.u.	°C	NTU
				NYSDEC Class GA Groundwater Quality Standards (µg/l)					
E5	SW-03	SW-03_20150729	07/29/15	0.07	3.67	170	6.74	27.77	0.0
E5	SW-03	SW-03-20151208	12/08/15	0.07	14.31	139	6.52	6.63	0.0
E5	SW-03	DUP-20151208	12/08/15	-	-	-	-	-	-
E5	SW-03	SW-03_20160726	07/26/16	0.04	5.80	131	8.03	31.62	0.0
E5	SW-03	DUP-20160726	07/26/16	-	-	-	-	-	-
E5	SW-03	SW-03_20161201	12/01/16	0.12	11.01	171	5.91	5.32	0.0
E5	SW-03	SW-03_20170118	01/18/17	0.10	13.13	27	8.55	1.82	0.2
E5	SW-03	SW-03_20170227	02/27/17	0.05	12.24	118	6.09	3.68	1.0
E5	SW-03	SW-03_20170425	04/25/17	0.08	8.39	199	5.47	19.53	0.0
E5	SW-03	SW-03_20170622	06/22/17	0.08	5.93	126	7.39	28.59	0.7
E5	SW-03	SW-03_20170724	07/24/17	0.06	7.18	196	8.12	17.01	1.0
E5	SW-03	SW-03_20170912	09/12/17	0.22	5.78	-10	6.92	21.71	0.1
E5	SW-03	SW-03_20171213	12/13/17	0.08	10.21	191	6.45	4.50	0.0
E5	SW-03	SW-03_20180320	03/20/18	0.07	9.32	124	6.25	5.07	0.0
E5	SW-03	DUP-20180320	03/20/18	0.07	9.32	124	6.25	5.07	0.0
E5	SW-03	SW-03_20180612	06/12/18	0.14	8.23	195	10.00	24.65	0.0
E5	SW-03	DUP02-20180612	06/12/18	0.14	8.23	195	10.00	24.65	0.0
E5	SW-03	SW-03_20180920	09/20/18	0.14	8.29	93	7.07	23.77	0.2
E5	SW-03	DUP-20180920	09/20/18	0.14	8.29	93	7.07	23.77	0.2
E5	SW-03	SW-03_20190321	03/21/19	0.05	7.17	312	6.01	6.55	4.3
E5	SW-03	DUP-20190321	03/21/19	0.05	7.17	312	6.01	6.55	4.3
A5	SW-04	SW-04_20150729	07/29/15	0.07	4.34	152	6.82	32.57	0.0
A5	SW-04	SW-04-20151208	12/08/15	0.08	9.76	139	6.92	5.24	0.0
A5	SW-04	SW-04_20160726	07/26/16	0.09	8.01	121	7.79	27.91	0.0
A5	SW-04	SW-04_20161201	12/01/16	0.12	9.51	162	5.76	6.51	0.0
A5	SW-04	SW-04_20170622	06/22/17	0.09	5.82	127	9.23	25.01	0.0
A5	SW-04	SW-04_20170912	09/12/17	0.22	5.32	-15	7.04	23.25	0.0
A5	SW-04	SW-04_20171213	12/13/17	0.08	10.95	206	6.41	3.56	0.0
A5	SW-04	SW-04_20180320	03/20/18	0.06	6.71	130	6.09	15.22	0.0
A5	SW-04	SW-04_20180612	06/12/18	0.13	5.70	81	9.29	30.19	0.1
A5	SW-04	SW-04_20180920	09/20/18	0.14	8.16	87	7.01	24.95	1.2
A5	SW-04	SW-04_20190321	03/21/19	0.05	9.47	261	6.55	4.68	2.9

Notes:

1) Groundwater GA Standard from 6 NYCRR 703.5, Table 1 Water Quality Standards (or Water Quality Guidance Values from NYS Division of Water TOGS 1.1.1). GA standards are for protective of fresh groundwaters for drinking water source.
2) Insufficient water - field parameters not collected.
3) Due to low water yield, samples were collected the day following purging and turbidity levels may have increased over the course of sampling.
4) pH readings collected using two different probes, with one reading 14.0, and the other reading 12.77.
5) Sample analyzed at dilution due to a "foaming issue" with sample.
6) Field log erroneously noted pH = 18.16; confirmed to be 8.16 by Antea.

" - " indicates not available/not analyzed
J - indicates value is estimated.
U - indicates analyte was not detected above reporting limit shown.
mS/cm -m millisiemen per centimeter
mV - millivolts
NTU - nephelometric turbidity units
s.u. - standard units
µg/L - micrograms per liter

Table 6
Laboratory Method Summary
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Analyte	Groundwater Quality Standard GA standard[1] (µg/L)	Surface Water Quality Standard[1] Class A, B, C (µg/L)	Method Number	Media	Anticipated Reporting Limit (µg/L)	Sample Container Type	Container Volume (each in ml)*	No. Containers per sample	Preservation	Holding Time
Geochemistry Parameters										
Total Dissolved Solids	not screened	not screened	SM2540C	Water	10,000	Plastic	500	1	Cool, < 6 deg. C.	7 days
Hardness	not screened	not screened	SM2340C	Water	2,000	Plastic	250	1	HNO3 to pH<2	6 Months
Dissolved Metals										
Dissolved Chromium	50	calculated*	SW846 6020A	Water	1.5	Plastic	250	1	Filtration + HNO_3 to pH<2	6 Months
Dissolved Vanadium	n/a	190 A(A) 14 A(C)			2					
Hexavalent Chromium	50	16 A(A) 11 A(C)	SW846 7196A	Water	10	Plastic	125	1	Filtration, Cool, < 6 deg. C	24 hrs
Cyanide										
Total Cyanide	200	9000 H(FC)	SW846 9012B	Water	10	Plastic	250	1	NaOH to pH>12, Cool, < 6 deg. C.	14 Days
Volatile Organic Compounds										
Dichlorobenzenes (1,2-, 1,3- and 1,4-**	3	5	SW846 8260C	Water	1	Glass VOA	40	3	HCl to pH<2, Cool, < 6 deg. C.	14 Days
Free Available Cyanide										
Free Cyanide	n/a	5.2 A(A) 22 A(C)	OIA-1677	Water	2	Glass VOA	40	1	lead-acetate strip test for sulfide 40 mL VOA with NaOH or if sulfide detected 40 mL VOA no preservative	14 Days or 24 hrs

Notes:
1) 6 NYCCR 703.5, Table 1 Water Quality Standards Surface Waters (or Water Quality Guidance Values from NYS Dept. of Water TOGS 1.1.1 as noted).
not screened - indicates not a site-related constituent; data used for geochemical assessment/developing surface water criteria only
n/a indicates no screening value available. Total metals criteria may be used for screening dissolved metals that have no screening value available.
A(C) - protective of fish propogation in fresh waters - applicable to dissolved phases only (acid soluble phase for vanadium)
A(A) - protective of fish survival in fresh waters - applicable to dissolved phases only (acid soluble phase for vanadium)
* indicates A(A) and A(C) values are calculated based on hardness
GA - protective of fresh groundwaters for drinking water source
H(WS) protective of health for water drinking water source (groundwater and surface water values for zinc are TOGS 1.1.1 water quality guidance values)
H(FC) - protective of human health for fish consumption
** GA standard for dichlorobenzenes (DCB) applies individually to isomers (1,2-DCB 1,3-DCB and 1,4-DCB). Surface water A(C) value applies to the sum of the isomers.
DCB method will allow reporting to less than 3 ug/L with applicable qualification
µg/L - micrograms per liter
ml - milliliters

Table 7
Groundwater - Chromium, Cyanide and Vanadium Analytical Results
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
NYSDEC Class GA Groundwater Quality Standards (µg/l)			50	50	-	200	-	-
Overburden								
IP-4	IP-4_20150723	7/23/2015	10 U	8.1	2.2 J	**1380**	76	245.13
IP-4	IP-4-20151209	12/9/2015	10 UJ	3.3 U	8.6	**843**	--	244.80
IP-4	IP-4_20160727	7/27/2016	10 U	3.9	2.8 J	**710**	--	245.10
IP-4	IP-4_20161129	11/29/2016	10 U	2	2 U	**760**	18	244.82
IP-4	IP-4_20170301	3/1/2017	10 U	3.9	3	**640**	21	245.03
IP-4	IP-4_20170621	6/21/2017	19 U	7.4	4.3	**1200**	48	244.90
IP-4	IP-4_20170913	9/13/2017	10 U	5.4	2.2	**1400**	43	245.32
IP-4	IP-4_20171213	12/13/2017	10 U	5.2 U	--	**1100**	23 J	244.91
IP-4	IP-4_20180321	3/21/2018	10 U	2.5	--	**830**	22	244.88
IP-4	IP-4_20180614	6/14/2018	10 U	13	--	**2100**	77	245.02
IP-4	IP-4_20180919	9/19/2018	10 U	10	--	**2000**	72	245.36
MW-26	MW-26_20150727	7/27/2015	10 U	7.8	2 UJ	74	59	231.40
MW-26	MW-26-20151208	12/8/2015	10 U	7.1	2 U	68	--	231.00
MW-26	MW-26_20160727	7/27/2016	10 U	3.2	2 UJ	77	--	231.37
MW-26-DUP	DUP1_20160727	7/27/2016	10 UJ	3.4	2 UJ	71	--	231.37
MW-26	MW-26_20161129	11/29/2016	10 U	3.1	2 U	81	54	230.69
MW-26	MW-26_20170228	2/28/2017	5.1 J	7.3	2 U	94	240	233.10
MW-26	MW-26_20170620	6/20/2017	10 U	8.4	2 U	63	150	233.25
MW-26	MW-26_20170912	9/12/2017	10 U	3.1	2 U	95	98	231.68
MW-26	MW-26_20171212	12/12/2017	10 U	5 U	--	75	42 J	232.13
MW-26	MW-26_20180320	3/20/2018	36	39	--	87	63	233.69
MW-26	MW-26_20180612	6/12/2018	10 U	11 J	--	62 J	84	232.47
MW-26	MW-26_20180918	9/18/2018	10 U	3.2 J	--	89	100	231.90
MW-28	MW-28_20160727	7/27/2016	10 U	24	2 UJ	9.1 J	--	237.65
MW-28	MW-28_20170228	2/28/2017	10 U	17	2 U	**350**	100	229.93
MW-28	MW-28_20180321	3/21/2018	13	**140**	--	--	28	238.04
MW-31	MW-31_20150805	8/5/2015	10 U	11	2 U	74	4	208.23
MW-31	MW-31-20151209	12/9/2015	10 UJ	5.3	2 U	80	--	210.49
MW-31	MW-31_20160727	7/27/2016	10 U	11	2 U	130	--	211.43
MW-31	MW-31_20161201	12/1/2016	10 U	8.8	2 U	160	3.5 J	208.36
MW-31	MW-31_20170301	3/1/2017	10 U	9	2 U	190	3.4 J	202.88

Table 7
Groundwater - Chromium, Cyanide and Vanadium Analytical Results
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
NYSDEC Class GA Groundwater Quality Standards (µg/l)			50	50	-	200	-	-
MW-31	MW-31_20170622	6/22/2017	10 U	10	2 U	95	4.1	209.64
MW-31	MW-31_20170913	9/13/2017	10 U	10	2 U	160	4	209.00
MW-31	MW-31_20171214	12/14/2017	10 U	9.8	--	140	6.3 J	210.36
MW-31	MW-31_20180321	3/21/2018	10 U	8.1	--	180	4.1	210.10
MW-31	MW-31_20180613	6/13/2018	10 U	9.5	--	**220**	4.5	208.35
MW-31	MW-31_20180919	9/19/2018	10 U	11	--	**230**	10 U	210.33
MW-31	MW-31_20180319	3/19/2019	10 U	11	--	**220**	--	210.56
MW-OB7	MW-OB7_20150723	7/23/2015	**5260**	**4400**	2 UJ	71	1100	237.72
MW-OB7	MW-OB7-20151209	12/9/2015	**3150** J	**2750** J	2 U	51	--	239.09
MW-OB7	MW-OB7_20160728	7/28/2016	10 U	44	2 UJ	40	--	237.28
MW-OB7	MW-OB7_20161130	11/30/2016	11 U	**580**	2.8	180	1400	235.56
MW-OB7	MW-OB7_20170301	3/1/2017	**98**	**150**	2 U	22	310	241.71
MW-OB7	MW-OB7_20170620	6/20/2017	10 U	1.7	2 U	4 J	5.9	241.09
MW-OB7	MW-OB7_20170912	9/12/2017	6.7 J	18	2 U	31	15	237.42
MW-OB7	MW-OB7_20171212	12/12/2017	**230**	**230**	--	22	150	239.81
MW-OB7	MW-OB7_20180320	3/20/2018	10 U	5.5	--	7.6 J	5.1	241.75
MW-OB7	MW-OB7_20180613	6/13/2018	10 U	2.4	--	10	3.2 J	239.82
MW-OB7	MW-OB7_20180917	9/17/2018	10 U	46	--	32	12	238.70
MW-OB14	MW-OB14_20150805	8/5/2015	**7540**	**6300**	2 U	**860**	1900	230.18
MW-OB14	MW-OB14A_A(1.0)-20150805 Diss	8/5/2015	**6870**	**6300**	--	--	1900	230.18
MW-OB14	MW-OB14B_B(0.1)-20150805 Diss	8/5/2015	**7580**	**6700**	8.3	--	2400	230.18
MW-OB14	MW-OB14_20160727	7/27/2016	**2300**	**2900**	2 UJ	**430**	--	230.40
MW-OB14	MW-OB14_20161129	11/29/2016	**5300**	**8800**	2 U	**650**	3700	230.26
MW-OB14	MW-OB14_20170228	2/28/2017	**950**	**1000**	2 U	**310**	240	231.65
MW-OB14	MW-OB14_20170621	6/21/2017	**1300**	**1300**	2 U	**230**	290	230.95
MW-OB14	MW-OB14_20170913	9/13/2017	**8900**	**8100**	2 U	**1400**	5300	230.37
MW-OB14	MW-OB14_20171212	12/12/2017	25	**17000**	--	**2900** J	11000	230.17
MW-OB14	MW-OB14_20180321	3/21/2018	**3400**	**3700**	--	**710**	1500	231.28
MW-OB14	MW-OB14_20180613	6/13/2018	**4500**	**4300**	--	**1200**	2700	230.61
MW-OB14	MW-OB14_20180918	9/18/2018	**2700**	**4500**	--	**800**	1100	230.78
MW-OB14	MW-OB14_20181210	12/10/2018	**2000**	**3700** J	--	**610**	--	231.45
MW-OB14	MW-OB14_20190321	3/21/2019	**290**	**420**	--	**270**	--	238.6 [3]
MW-OB14	MW-OB14_20190618	6/18/2019	**120**	**160**		10 U		231.04
MW-OB25	MW-OB25-20151209	12/9/2015	**729** J	**608** J	2 U	58	--	230.85
MW-OB25	MW-OB25_20160728	7/28/2016	**570** J	**570**	3.2	120	--	229.67

Table 7
Groundwater - Chromium, Cyanide and Vanadium Analytical Results
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
NYSDEC Class GA Groundwater Quality Standards (µg/l)			50	50	-	200	-	-
MW-OB25	MW-OB25_20161201	12/1/2016	**700**	**720**	2.6	110	4.3	230.46
MW-OB25	MW-OB25_20170228	2/28/2017	**330**	**350**	2 U	18 U	4.1	232.20
MW-OB25	MW-OB25_20170621	6/21/2017	**330**	**330**	2.6	61	15	230.57
MW-OB25	MW-OB25_20170913	9/13/2017	**660**	**560**	2.7	75	17	229.49
MW-OB25	MW-OB25_20171212	12/12/2017	**810**	**740**	--	110	220	230.24
MW-OB25	MW-OB25_20180320	3/20/2018	**400**	**360**	--	58	5.3	231.29
MW-OB25	MW-OB25_20180613	6/13/2018	**630**	**570**	--	110	10	229.99
MW-OB25	MW-OB25_20180919	9/19/2018	**670**	**760**	--	110	20	229.67
MW-OB25	MW-OB25_20181210	12/10/2018	**270**	**280** J	--	23	--	231.05
MW-OB25	MW-OB25_20190319	3/19/2019	**380**	**410**	--	20	--	230.70
MW-OB25	MW-OB25_20190619	6/19/2019	**250** J	**230** J	--	68 J	--	230.32
MW-OB26	MW-OB26_20160728	7/28/2016	**280**	**270**	3.7	**250**	--	226.77
MW-OB26	MW-OB26_20161201	12/1/2016	10 U	22	4	**300**	25	224.84
MW-OB26	MW-OB26_20170228	2/28/2017	16	30	2 U	**390**	16	228.30
MW-OB26	MW-OB26_20170622	6/22/2017	12	9.7	5.6	180	5.2	228.47
MW-OB26	MW-OB26_20170914	9/14/2017	10 U	12	3.9	**230**	35	226.68
MW-OB26	MW-OB26_20171213	12/13/2017	6.6 J	23	--	**360**	51 J	224.74
MW-OB26	MW-OB26_20180320	3/20/2018	10 U	6.3	--	**300**	16	227.99
MW-OB26	MW-OB26_20180614	6/14/2018	33	**140**	--	**300**	110	227.70
MW-OB26	MW-OB26_20180919	9/19/2018	6.2 J	5.6	--	**250**	15	227.37
MW-OB26	MW-OB26_20181211	12/11/2018	**62**	**50**	--	160 J	4.4	228.64
MW-OB26	MW-OB26_20190320	3/20/2019	24	37	--	93 J	--	227.10
MW-OB26	MW-OB26_20190619	6/19/2019	26 J	18 J	--	65 J	--	228.29
MW-OB30	MW-OB30-20151209	12/9/2015	--	--	22	**897**	--	211.65
MW-OB30	MW-OB30-20151209A(1.0)	12/9/2015	10 UJ	--	--	--	1500	211.65
MW-OB30	MW-OB30-20151209B(0.1)	12/9/2015	10 UJ	--	--	--	--	211.65
MW-OB30	MW-OB30-20151209B(0.1)-2	12/10/2015	--	22	--	--	1600	211.65
MW-OB30	MW-OB30-20151209F	12/10/2015	10 UJ	21	--	--	1600	211.65
MW-OB30	MW-OB30_20160727	7/27/2016	48	48	25 J	**650**	--	211.09
MW-OB30	MW-OB30_20161201	12/1/2016	**100**	**170**	2 U	**400**	3500	213.71
MW-OB30	MW-OB30_20161228	12/28/2016	--	--	--	--	7000	-
MW-OB30	MW-OB30_20170118	1/18/2017	--	--	--	--	2500	215.73
MW-OB30	DUP_20170118	1/18/2017	--	--	--	--	2400	215.73
MW-OB30	MW-OB30_20170302	3/2/2017	**14000**	**15000**	4.3	**370**	1700	217.64
MW-OB30	MW-OB30_20170425	4/25/2017	**13000** J	**13000** J	3.4 U	**440**	1400 J	216.46
MW-OB30	DUP_20170425	4/25/2017	**14000**	**14000** J	3.3 U	**420**	1400 J	216.46

Table 7
Groundwater - Chromium, Cyanide and Vanadium Analytical Results
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Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
	NYSDEC Class GA Groundwater Quality Standards (µg/l)		50	50	-	200	-	-
MW-OB30	MW-OB30_20170622	6/22/2017	**8900**	**8500**	2.2	**330**	1800	216.37
MW-OB30	MW-OB30_20170724	7/24/2017	**17000**	**16000**	--	--	2300	216.15
MW-OB30	MW-OB30_20170913	9/13/2017	**12000**	**12000**	3	**300**	2300	215.32
MW-OB30	MW-OB30_20171220	12/20/2017	**5300**	**4500**	--	**400** J	2500	215.63
MW-OB30	MW-OB30_20180321	3/21/2018	**17000**	**19000**	--	**600**	1500	215.50
MW-OB30	MW-OB30_20180614	6/14/2018	**9500**	**9500**	--	**430**	1500	214.95
MW-OB30	MW-OB30_20180919	9/19/2018	**4400**	**4000**	--	**240**	1100	215.47
MW-OB30	MW-OB30_20190320	3/20/2019	**290**	**290**	--	29 J	--	216.93
MW-OB31	MW-OB31-20151209	12/9/2015	--	--	3.2	117	--	214.20
MW-OB31	MW-OB31-20151209A(1.0)	12/9/2015	10 UJ	--	--	--	--	214.20
MW-OB31	MW-OB31-20151209B(0.1)	12/9/2015	10 UJ	--	--	--	--	214.20
MW-OB31	MW-OB31-20151209F	12/9/2015	10 UJ	**200**	--	--	300	214.20
MW-OB31	MW-OB31-20151209A(1.0)-2	12/10/2015	--	**84**	--	--	210	214.20
MW-OB31	MW-OB31-20151209B(0.1)-2	12/10/2015	--	46	--	--	63	214.20
MW-OB31	MW-OB31_20160727	7/27/2016	8.9 J	**250**	2 U	67	--	213.04
MW-OB31	MW-OB31_20161201	12/1/2016	10 U	6.1	2.3	70	120	213.71
MW-OB31	MW-OB31_20170118	1/18/2017	--	--	--	--	5400	216.76
MW-OB31	MW-OB31_20170302	3/2/2017	**82**	**320**	2.6	**420**	4200	218.23
MW-OB31	MW-OB31_20170425	4/25/2017	10	**600** J	4.2 U	180	2400 J	217.35
MW-OB31	MW-OB31_20170622	6/22/2017	10 U	**310**	2 U	100	1800	216.21
MW-OB31	MW-OB31_20170725	7/25/2017	17	**610**	--	--	800 J	216.51
MW-OB31	MW-OB31_20170913	9/13/2017	28 U	**210**	2 U	84	1200	215.70
MW-OB31	MW-OB31_20171214	12/14/2017	8.1 J	**86**	--	60	290	215.11
MW-OB31	MW-OB31_20180321	3/21/2018	40	**300**	--	160	270	217.51
MW-OB31	MW-OB31_20180614	6/14/2018	10 U	**270**	--	66	370	215.80
MW-OB31	MW-OB31_20180919	9/19/2018	7.4 J	**140**	--	45	190	215.47
MW-OB31	MW-OB31_20190320	3/20/2019	10	**200**	--	68 J	--	219.49
MW-OB32	MW-OB32-20151208	12/8/2015	--	--	94	**2190**	--	217.48
MW-OB32	MW-OB32-20151208-A(1.0)	12/8/2015	15	32	--	--	18	217.48
MW-OB32	MW-OB32-20151208-B(0.1)	12/8/2015	14	**68**	--	--	25	217.48
MW-OB32	MW-OB32-20151208F	12/8/2015	10 U	34	--	--	15 J	217.48
MW-OB32	MW-OB32_20160726	7/26/2016	10 U	5.6	11 J	**1700**	--	216.89
MW-OB32	MW-OB32_20161201	12/1/2016	10 U	24	6	**1000**	12	217.83

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Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
	NYSDEC Class GA Groundwater Quality Standards (µg/l)		**50**	**50**	**-**	**200**	**-**	**-**
MW-OB32	MW-OB32_20170302	3/2/2017	**510**	**480**	7.4	**890**	16	219.69
MW-OB32	MW-OB32_20170425	4/25/2017	**170**	**210** J	9.7	**1400**	26 J	218.84
MW-OB32	MW-OB32_20170622	6/22/2017	**95**	**140**	16	**2000**	33	219.07
MW-OB32	MW-OB32_20170725	7/25/2017	16	**90**	--	--	35 J	218.90
MW-OB32	MW-OB32_20170913	9/13/2017	10 U	43	56	**8100**	36	218.79
MW-OB32	MW-OB32_20171214	12/14/2017	8.1 J	**67**	--	**8800**	62	218.62
MW-OB32	MW-OB32_20180321	3/21/2018	**400**	**460**	--	**1200**	18	219.22
MW-OB32	MW-OB32_20180614	6/14/2018	10 U	**57**	--	**5400**	46	218.70
MW-OB32	MW-OB32_20180919	9/19/2018	10 U	**59**	--	**5300**	40	218.92
MW-OB32	MW-OB32_20190319	3/20/2019	**450**	**460**	--	**880** J	--	219.76
MW-OB33	MW-OB33-20151208	12/8/2015	--	--	2 U	**214**	--	216.78
MW-OB33	MW-OB33-20151208A(1.0)	12/8/2015	**1190** J	**1000** J	--	--	15	216.78
MW-OB33	MW-OB33-20151208B(0.1)	12/8/2015	**1170** J	**1100**	--	--	15	216.78
MW-OB33	MW-OB33-20151208F	12/8/2015	**1160** J	**1100**	--	--	14	216.78
MW-OB33-DUP	DUP-20151208-2	12/8/2015	**1170** J	--	2 U	**213**	--	216.78
MW-OB33-DUP	DUP-20151208-2F	12/8/2015	**1180** J	**1100**	--	--	17	216.78
MW-OB33	MW-OB33_20160726	7/26/2016	**1700**	**1900**	2 U	190	--	216.27
MW-OB33	MW-OB33_20161201	12/1/2016	**1800**	**2000**	2 U	180	6.7	216.01
MW-OB33	MW-OB33_20170302	3/2/2017	**1900**	**2000**	6.2	**560**	19	217.42
MW-OB33	MW-OB33_20170622	6/22/2017	**3900**	**3500**	4	**540**	48	216.04
MW-OB33	MW-OB33_20170725	7/25/2017	**1700**	**2200** J	--	--	34 J	216.62
MW-OB33	MW-OB33_20170913	9/13/2017	**2300**	**2100**	7	**330**	25 J	216.48
MW-OB33	MW-OB33_20171214	12/14/2017	**2000**	**1900**	--	**290**	550	216.36
MW-OB33	MW-OB33_20180321	3/21/2018	**1900**	**2100**	--	**370**	110	216.74
MW-OB33	MW-OB33_20180614	6/14/2018	**5200**	**4900**	--	**730**	4 U	216.17
MW-OB33	MW-OB33_20180919	9/19/2018	**2500**	**2200**	--	180	21	216.38
MW-OB33	MW-OB33_20190320	3/20/2019	**1100**	**1300**	--	**390** J	--	217.30
MW-OB34	MW-OB34-20151208	12/8/2015	--	--	2 U	**913**	--	210.50
MW-OB34	MW-OB34-20151208A(1.0)	12/8/2015	10 U	**270**	--	--	14	210.50
MW-OB34	MW-OB34-20151208B(0.1)	12/8/2015	10 UJ	**300**	--	--	14	210.50
MW-OB34	MW-OB34-20151208F	12/8/2015	10 U	**310**	--	--	15 J	210.50
MW-OB34	QC-MW-OB34-20151208	12/8/2015	--	--	0.83 U	--	--	210.50
MW-OB34	MW-OB34_20160726	7/26/2016	10 U	**170**	4.9 J	**740**	--	208.59
MW-OB34	MW-OB34_20161201	12/1/2016	10 U	**200**	2 U	**720**	3.6 J	208.20

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Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
NYSDEC Class GA Groundwater Quality Standards (µg/l)			50	50	-	200	-	-
MW-OB34	MW-OB34_20170302	3/2/2017	**120**	**170**	9.6	**600**	4 U	213.12
MW-OB34	MW-OB34_20170622	6/22/2017	10 U	**53**	4.3	**570**	2 J	210.90
MW-OB34	MW-OB34_20170725	7/25/2017	10 U	**62** J	--	--	1.6 J	210.22
MW-OB34	MW-OB34_20170913	9/13/2017	10 U	**74**	6.4	**650**	2.3 J	209.16
MW-OB34	MW-OB34_20171214	12/14/2017	6.3 J	**110**	--	**840**	32 J	210.41
MW-OB34	MW-OB34_20180321	3/21/2018	10 U	**95**	--	**550**	4 U	210.89
MW-OB34	MW-OB34_20180615	6/15/2018	10 U	**53** B	--	**650**	1.9 J	208.69
MW-OB34	MW-OB34_20180919	9/19/2018	10 U	**95**	--	**550**	10 U	208.50
MW-OB34	MW-OB34_20190320	3/20/2019	21	**130**	--	**330** J	--	211.48
SUMP A	Sump_A_20160726	7/26/2016	**81**	**90**	8	**780** J	--	--
SUMP A	Sump A_20161130	11/30/2016	**130**	**140**	2 U	**760**	59	219.29
SUMP A	SUMPA_20170228	2/28/2017	**500**	**660**	28	**1900**	30	216.39
SUMP A	SUMP A_20170425	4/25/2017	**420**	**470** J	7.4 U	**580**	35 J	213.08
SUMP A	SumpA_20170621	6/21/2017	**1100**	**1100**	29	**2200**	23	210.61
SUMP A	SUMPA_20170724	7/24/2017	**590**	**550**	--	--	23	210.17
SUMP A	Sump A_20170912	9/12/2017	**470**	**460**	8.5	**550**	34	216.16
SUMP A	Sump A_20171212	12/12/2017	**250**	**270**	--	**430**	110	210.66
SUMP A	SUMP A_20180322	3/22/2018	**400**	**470**	--	**1300**	35	210.44
SUMP A	SUMP-A_20180614	6/14/2018	**120**	**150**	--	**470**	58	211.27
SUMP A	SUMP-A_20180918	9/18/2018	**1100**	**1200**	--	**660**	43	210.98
SUMP A	SUMP-A_20181211	12/11/2018	**410**	**410**	--	**680** J	39	211.05
SUMP A	SUMP-A_20190320	3/20/2019	**350**	**420**	--	**420** J	--	210.66
SUMP A	SUMP-A_20190618	6/18/2019	**350**	**380**	--	70	--	210.86
SUMP B	Sump_B_20160726	7/26/2016	**83**	**95**	49	**620** J	--	--
SUMP B	Sump B_20161130	11/30/2016	**110**	**110**	2 U	**530**	56	211.64
SUMP B	SUMPB_20170228	2/28/2017	**190**	**190**	5.3	**940**	49	212.67
SUMP B	SumpB_20170621	6/21/2017	**190**	**180**	9	**450**	65	211.99
SUMP B	SUMPB_20170724	7/24/2017	**140**	**150**	--	--	61	213.21
SUMP B	Sump B_20170912	9/12/2017	**180**	**180**	8.9	**1000**	47	213.55
SUMP B	Sump B_20171212	12/12/2017	**270**	**290**	--	**1500**	110	213.62
SUMP B	SUMP B_20180322	3/22/2018	**160**	**190**	--	**1200**	49	212.74
SUMP B	SUMP-B_20180614	6/14/2018	**620**	**610**	--	**340**	31	213.53
SUMP B	SUMP-B_20180918	9/18/2018	**130**	**150**	--	**710**	46	212.08
SUMP B	Sump B_20181210	12/10/2018	**240**	**270** J	--	**920**	--	211.18
SUMP B	Sump B_20190320	3/20/2019	**100**	**140**	--	**660** J	--	212.39
SUMP B	Sump B_20190618	6/18/2019	**120**	**160**	--	140	--	212.69

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Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
NYSDEC Class GA Groundwater Quality Standards (µg/l)			50	50	-	200	-	-
Shallow Bedrock								
AW-A2	AW-A2-20151209	12/9/2015	10 U	2 U	2 U	28	--	219.49
AW-A2	AW-A2_20160728	7/28/2016	10 U	1.5 U	2 U	21	--	219.95
AW-A2	AW-A2_20161129	11/29/2016	10 U	1.5	2 U	39	4 U	222.30
AW-A2	AW-A2_20170228	2/28/2017	10 U	1.5 U	2 U	19 U	1.2 J	223.99
AW-A2	AW-A2_20170620	6/20/2017	10 U	1.8	2 U	38	4 U	224.27
AW-A2	AW-A2_20170914	9/14/2017	10 U	4.2	2 U	35	4 U	223.38
AW-A2	AW-A2_20171214	12/14/2017	10 U	5 U	--	44	10 U	223.41
AW-A2	AW-A2_20180321	3/21/2018	10 U	1.5 U	--	37	1.5 J	223.89
AW-A2	AW-A2_20180613	6/13/2018	10 U	1.4 J	--	44	4 U	224.26
AW-A2	AW-A2_20180919	9/19/2018	10 U	5 U	--	24	10 U	224.15
AW-A10	AW-A10_20150729	7/29/2015	10 UJ	15	2 UJ	**578** J	230	204.83
AW-A10	AW-A10-20151209	12/9/2015	10 UJ	9.9	6	**550**	--	204.93
AW-A10	AW-A10_20160728	7/28/2016	10 U	14	2 U	**730**	--	204.10
AW-A10	AW-A10_20161202	12/2/2016	7.9 J	8.1	2 U	**440**	88	210.74
AW-A10	AW-A10_20170301	3/1/2017	10 U	4.4	2 U	**260**	39	214.74
AW-A10	AW-A10_20170621	6/21/2017	10 U	4.6	2 U	**210**	66	213.69
AW-A10	AW-A10_20170915	9/15/2017	10 U	2.7	2 U	87	20	212.79
AW-A10	AW-A10_20170915	12/13/2017	10 U	5 U	--	93	18 J	213.87
AW-A10	AW-A10_20180322	3/22/2018	10 U	3.2	--	110	23	214.07
AW-A10	AW-A10_20180614	6/14/2018	10 U	3.3	--	80	13	212.88
AW-A10	AW-A10_20180920	9/20/2018	10 U	3 J	--	91	12	212.84
AW-A11	AW-A11_20150730	7/30/2015	**126**	**140**	2 UJ	**129**	120	201.74
AW-A11	AW-A11-20151209	12/9/2015	**147**	**139** J	2 U	149	--	197.19
AW-A11	AW-A11_20160728	7/28/2016	**210** J	**250**	2 U	140	--	196.20
AW-A11	AW-A11_20161202	12/2/2016	**390**	**420**	2 U	81	79	212.98
AW-A11	AW-A11_20170301	3/1/2017	**860**	**890**	2 U	97	83	216.92
AW-A11	AW-A11_20170621	6/21/2017	**1200**	**1200**	2 U	63	85	214.70
AW-A11	AW-A11_20170725	7/25/2017	**860**	**870**	--	--	54 J	214.67
AW-A11	AW-A11_20170914	9/14/2017	**720**	**470**	2 U	62	34	213.87
AW-A11	AW-A11_20171212	12/12/2017	**210**	**290**	--	42	130	214.32
AW-A11	AW-A11_20180320	3/20/2018	**670**	**680**	--	57	79	214.49

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	NYSDEC Class GA Groundwater Quality Standards (µg/l)		50	50	-	200	-	-
AW-A11	AW-A11_20180614	6/14/2018	**640**	**610**	--	53	80	213.07
AW-A11	AW-A11_20180919	9/19/2018	**300**	**290**	--	56	84	212.95
AW-A11	AW-A11_20190319	3/19/2019	22	36	--	50	--	214.35
AW-A14	AW-A14_20150730	7/30/2015	12	27	2 UJ	**455**	6.2	218.97
AW-A14	AW-A14-20151209	12/9/2015	14 J	20.1	2 U	**460**	--	218.77
AW-A14	AW-A14_20160727	7/27/2016	8 J	11	2 UJ	**250**	--	218.34
AW-A14	AW-A14_20161130	11/30/2016	8.3 J	6.7	2 U	**270**	4	219.56
AW-A14	AW-A14_20170228	2/28/2017	10 U	8	2 U	**240**	5	220.18
AW-A14	AW-A14_20170621	6/21/2017	10 U	3.6	2 U	120	3.3 J	219.75
AW-A14	AW-A14_20170914	9/14/2017	10 U	7.5	2 U	83	2.5 J	219.87
AW-A14	AW-A14_20171212	12/12/2017	10 U	5 U	--	95	6.6 J	219.64
AW-A14	AW-A14_20180322	3/22/2018	10 U	11	--	61	2.5 J	220.15
AW-A14	AW-A14_20180614	6/14/2018	10 U	3.1	--	100	2.9 J	219.90
AW-A14	AW-A14_20180919	9/19/2018	10 U	3.1 J	--	90	10 U	219.76
AW-A14	AW-A14_20181211	12/11/2018	10 U	2.8 U	--	73 J	11	219.99
AW-A14	AW-A14_20190320	3/20/2019	10 U	3.7	--	38 J	--	220.84
AW-A14	AW-A14_20190618	6/18/2019	10 U	3.6 U	--	46	--	219.96
AW-A15	AW-A15_20150724	7/24/2015	10 U	5.6	2 UJ	42	1.2 J	228.08
AW-A15	AW-A15-20151209	12/9/2015	10 U	2 U	2 U	43	--	228.20
AW-A15	AW-A15_20160728	7/28/2016	10 UJ	1.5 U	2 U	39	--	228.55
AW-A15	AW-A15_20161130	11/30/2016	10 U	1.5 U	2 U	28	4 U	228.62
AW-A15	AW-A15_20170301	3/1/2017	10 U	0.81 J	2 U	45	4 U	230.37
AW-A15	AW-A15_20170620	6/20/2017	10 U	0.6 J	2 U	34	4 U	229.32
AW-A15	AW-A15_20170912	9/12/2017	5.8 J	0.51 J	2 U	41	4 U	230.60
AW-A15	AW-A15_20171211	12/11/2017	10 U	5 U	--	45	10 U	230.29
AW-A15	AW-A15_20180319	3/19/2018	10 U	0.49 J	--	40	4 U	231.47
AW-A15	AW-A15_20180613	6/13/2018	10 U	0.38 J	--	51	4 U	230.54
AW-A15	AW-A15_20180918	9/18/2018	10 U	5 U	--	72	10 U	230.74
MW-25S	MW-25S_20150728	7/28/2015	10 U	6.6	2 UJ	90	28	203.13
MW-25S	MW-25S-20151210	12/10/2015	10 U	4.7 J	2 U	89	--	203.24
MW-25S	MW-25S_20160728	7/28/2016	10 U	3.9	2 U	66	--	203.00
MW-25S	MW-25S_20161129	11/29/2016	10 U	3.3	2 U	58	12	212.64
MW-25S	MW-25S_20170301	3/1/2017	10 U	7.3	2.4	84	18	214.81
MW-25S	MW-25S_20170620	6/20/2017	10 U	8.6	2 U	130	27	214.34

Table 7
Groundwater - Chromium, Cyanide and Vanadium Analytical Results
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
	NYSDEC Class GA Groundwater Quality Standards (µg/l)		50	50	-	200	-	-
MW-25S	MW-25S_20170915	9/15/2017	**250**	**220**	2 U	27	32	214.49
MW-25S	MW-25S_20171213	12/13/2017	26	**56**	--	160	36	213.96
MW-25S	MW-25S_20180322	3/22/2018	10 U	20	--	**220**	39	214.03
MW-25S	MW-25S_20180614	6/14/2018	10 U	10	--	140	23	214.18
MW-25S	MW-25S_20180920	9/20/2018	10 U	5.4	--	10 U	29	214.25
Intermediate Bedrock								
AW-B2	AW-B2_20150723	7/23/2015	10 U	2.9	2 UJ	36	0.81 J	218.28
AW-B2-DUP	DUP-M1_20150723	7/23/2015	10 U	2.9	2 UJ	38	0.68 J	218.28
AW-B2	AW-B2-20151210	12/10/2015	10 U	2 U	2 U	44	--	209.39
AW-B2	AW-B2_20160728	7/28/2016	10 U	1.5 U	2 U	10 U	--	218.27
AW-B2	AW-B2_20161129	11/29/2016	10 U	1.5 U	2 U	7.7 J	4 U	220.64
AW-B2	AW-B2_20170228	2/28/2017	5.1 J	1.5 U	2 U	10 U	4 U	222.03
AW-B2	AW-B2_20170621	6/21/2017	10 U	1.5 U	2 U	10 U	4 U	223.73
AW-B2	AW-B2_20170914	9/14/2017	10 U	16	2 U	10 U	4 U	224.08
AW-B2	AW-B2_20171214	12/14/2017	10 U	5 U	--	10 U	10 U	223.08
AW-B2	AW-B2_20180321	3/21/2018	10 U	1.5 U	--	15 U	4 U	223.37
AW-B2	AW-B2_20180614	6/14/2018	10 U	0.64 J	--	13	4 U	224.15
AW-B2	AW-B2_20180918	9/18/2018	5 J	1.6 J	--	64	10 U	224.08
AW-B4	AW-B4_20150731	7/31/2015	10 U	5.4	--	10 U	5.3	203.70
AW-B4	AW-B4A_A(1.0)-20150731 Diss	7/31/2015	10 U	5.9	--	--	5.3	203.70
AW-B4	AW-B4B_B(0.1)-20150731 Diss	7/31/2015	10 U	5.7	--	--	4.7	203.70
AW-B4	AW-B4-20151209	12/9/2015	10 UJ	7.3	2 U	81	--	204.74
AW-B4	AW-B4_20160729	7/29/2016	10 U	17	8.2	**230**	--	204.51
AW-B4	AW-B4_20161130	11/30/2016	**110**	**130**	2 U	**190**	7.3	208.23
AW-B4	AW-B4_20170302	3/2/2017	**120**	**130**	2 U	170	6.6	213.51
AW-B4	AW-B4_20170621	6/21/2017	10 U	13	2.3	**220**	4	210.18
AW-B4	AW-B4_20170913	9/13/2017	10 U	9.9	2.3	**230**	6.2	209.19
AW-B4	AW-B4_20171214	12/14/2017	12	**61**	--	**230**	37 J	210.04
AW-B4	AW-B4_20180321	3/21/2018	33	**57**	--	190	10	210.39
AW-B4	AW-B4_20180613	6/13/2018	10 U	21	--	**200**	8.1	209.70
AW-B4	AW-B4_20180918	9/18/2018	24	32	--	**200** F1	21	208.64
AW-B4	AW-B4_20181211	12/11/2018	28 U	27	--	99 J	13	212.06
AW-B4	AW-B4_20190319	3/19/2019	10 U	10	--	130	--	210.65
AW-B4	AW-B4_20190618	6/18/2019	12	16	--	30	--	210.76

Table 7
Groundwater - Chromium, Cyanide and Vanadium Analytical Results
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Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
NYSDEC Class GA Groundwater Quality Standards (µg/l)			50	50	-	200	-	-
AW-B11	AW-B11_20150727	7/27/2015	10 U	5.1	2 UJ	51	1.4 J	189.79
AW-B11	AW-B11-20151209	12/9/2015	10 U	2.4 U	2 U	32	--	190.14
AW-B11	AW-B11_20160728	7/28/2016	10 U	4.4	2 UJ	19	--	192.04
AW-B11	AW-B11_20161201	12/1/2016	7.5 J	2.7	2	25	3.5 J	201.99
AW-B11	AW-B11_20170301	3/1/2017	10 UJ	2	2 U	30	1.3 J	208.21
AW-B11	AW-B11_20170622	6/22/2017	10 U	1.5 U	2 U	21	4 U	209.13
AW-B11	AW-B11_20170914	9/14/2017	10 U	1.9	2 U	17	1.5 J	208.64
AW-B11	AW-B11_20171213	12/13/2017	10 U	5 U	--	18 J	10 U	208.88
AW-B11	AW-B11_20180322	3/22/2018	10 U	1.1 J	--	23	1.2 J	209.69
AW-B11	AW-B11_20180614	6/14/2018	10 U	1.5	--	18	4 U	209.63
AW-B11	AW-B11_20180920	9/20/2018	10 U	5 U	--	14	10 U	209.25
AW-B17	AW-B17_20150806	8/6/2015	10 U	5.1	2 U	29	1.3 J	213.88
AW-B17	AW-B17-20151209	12/9/2015	10 UJ	2.1 U	2 U	31	--	211.77
AW-B17	AW-B17_20160727	7/27/2016	10 U	3	2 UJ	22	--	210.90
AW-B17	AW-B17_20161130	11/30/2016	10 U	2.3	2 U	26	4 U	211.37
AW-B17	AW-B17_20170301	3/1/2017	10 U	1.9	2 U	35	4 U	214.86
AW-B17	AW-B17_20170620	6/20/2017	10 U	1.7	2 U	26	4 U	212.96
AW-B17	AW-B17_20170914	9/14/2017	10 U	1.8	2 U	20	4 U	212.00
AW-B17	AW-B17_20171214	12/14/2017	10 U	5 U	--	36	10 U	212.54
AW-B17	AW-B17_20180320	3/20/2018	10 U	2.3	--	33	4 U	213.50
AW-B17	AW-B17_20180613	6/13/2018	10 U	3	--	30	1.6 J	211.96
AW-B17	AW-B17_20180918	9/18/2018	10 U	2.4 J	--	30	10 U	212.09
AW-B17	AW-B17_20190319	3/19/2019	10 U	3	--	29	--	212.66
AW-B18	AW-B18_20150724	7/24/2015	10 U	4.4	2 UJ	**206**	1.5 J	208.51
AW-B18	AW-B18-20151207	12/7/2015	--	--	2 U	**214**	--	208.75
AW-B18	AW-B18-20151207F	12/7/2015	10 U	2.1 U	--	--	--	208.75
AW-B18	AW-B18_20160726	7/26/2016	10 U	1.8 U	2 U	**270**	--	208.20
AW-B18	AW-B18_20161130	11/30/2016	10 UJ	2.7	2 U	**450**	1.6 J	209.62
AW-B18	AW-B18_20170228	2/28/2017	10 U	2.5	2 U	**200**	1.3 J	215.00
AW-B18	AW-B18_20170620	6/20/2017	10 U	1.2 J	2 U	**270**	4 U	212.56
AW-B18	AW-B18_20170913	9/13/2017	50 U	2.8	2 U	**260**	1.7 J	211.22
AW-B18	AW-B18_20171211	12/11/2017	10 U	13	--	**200** J	6.2 J	211.77
AW-B18	AW-B18_20180319	3/19/2018	10 U	2.1	--	170	4 U	204.29

Table 7
Groundwater - Chromium, Cyanide and Vanadium Analytical Results
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
NYSDEC Class GA Groundwater Quality Standards (µg/l)			**50**	**50**	**-**	**200**	**-**	**-**
AW-B18	AW-B18_20180612	6/12/2018	10 U	0.61 J	--	--	3.3 J	210.15
AW-B18	AW-B18_20180917	9/17/2018	10 U	5 U	--	**240**	10 U	210.38
AW-B20	AW-B20_20150805	8/5/2015	**578**	**510**	2 U	**274**	85	225.44
AW-B20	AW-B20A_A(1.0)-20150805 Diss	8/5/2015	**587**	**520**	--	--	85	225.44
AW-B20	AW-B20B_B(0.1)-20150805 Diss	8/5/2015	**584**	**570**	2 U	--	90	225.44
AW-B20	AW-B20_20161130	11/30/2016	**110** J	**91** J	2 U	250	41	226.20
AW-B20	AW-B20_20170301	3/1/2017	**85**	**160**	2 U	**310**	57	227.42
AW-B20	AW-B20_20170621	6/21/2017	40	49	2 U	**240**	45	227.25
AW-B20	AW-B20_20170913	9/13/2017	10 U	8.5	2 U	**260**	24	226.30
AW-B20	AW-B20_20171212	12/12/2017	10 U	18	--	**200**	32 J	226.13
AW-B20	AW-B20_20180320	3/20/2018	10 U	6.6	--	**270**	26	227.13
AW-B20	AW-B20_20180613	6/13/2018	10 U	8.4	--	**240**	22	226.50
AW-B20	AW-B20_20180918	9/18/2018	10 U	4.7 J	--	**230**	9.3 J	226.84
EW-B5	EW-B5_20160726	7/26/2016	**50000**	**57000**	2 U	10 UJ	--	192.34
EW-B5	EW-B5_20161202	12/2/2016	**100000**	**120000**	3	**490**	800 U	202.20
EW-B5	EW-B5_20170118	1/18/2017	**61**	**130000**	--	**--**	--	208.97
EW-B5	EW-B5_20170301	3/1/2017	**40000**	**43000**	3.6	**300**	400 U	206.14
EW-B5	EW-B5_20170621	6/21/2017	**140000**	**140000**	2 U	**650**	4000 U	204.62
EW-B5	DUP_20170621	6/21/2017	**130000**	**140000**	2 U	**600**	4000 U	204.62
EW-B5	EW-B5_20170725	7/25/2017	**140000**	**140000** J	--	**--**	8000 U	205.43
EW-B5	DUP_20170725	7/25/2017	**140000**	**130000**	--	**--**	8000 U	205.43
EW-B5	EW-B5_20170914	9/14/2017	**110000**	**120000**	2 U	**440**	2000 U	203.16
EW-B5	DUP_20170914	9/14/2017	**130000**	**120000**	2 U	**450**	4000 U	203.16
EW-B5	EW-B5_20171212	12/12/2017	**130000** J	**130000**	--	**900**	35000	203.72
EW-B5	DUP_20171212	12/12/2017	**67000** J	**130000**	--	**890**	36000	203.72
EW-B5	EW-B5_20180322	3/22/2018	**130000**	**140000**	--	**640**	3700	204.42
EW-B5-DUP	DUP01_20180322	3/22/2018	**130000**	**140000**	--	**760**	3400	204.42
EW-B5	EW-B5_20180613	6/13/2018	**130000** J	**100000**	--	**580**	2000 U	204.57
EW-B5-DUP	DUP_20180613	6/13/2018	**130000** J	**100000**	--	**520**	2000 U	204.57
EW-B5	EW-B5_20180918	9/18/2018	**120000**	**110000**	--	**550**	10 U	203.27
EW-B5-DUP	DUP_20180918	9/18/2018	**110000**	**110000**	--	**540**	14	203.27

Table 7
Groundwater - Chromium, Cyanide and Vanadium Analytical Results
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
NYSDEC Class GA Groundwater Quality Standards (µg/l)			50	50	-	200	-	-
EW-B5	EW-B5_20181210	12/10/2018	**37000**	**24000** J	--	87	--	206.10
EW-B5-DUP	DUP_20181210	12/10/2018	**35000**	**38000** J	--	87	--	206.10
EW-B5	EW-B5_20190114	1/14/2019	**46000**	**68000**	--	**490**	--	189.27
EW-B5	EW-B5_20190218	2/18/2019	**52000**	**53000**	--	**420**	--	189.95
EW-B5	EW-B5_20190320	3/20/2019	6.6 J	**9800**	--	**350** J	--	191.64
EW-B5-DUP	EW-B5_20190320- DUP	3/20/2019	**150** J	**9600**	--	**320** J	--	191.64
EW-B5	EW-B5_20190618	6/18/2019	**46000**	**58000**	--	**910** J	--	188.66
EW-B5-DUP	DUP_20190618	6/18/2019	**48000**	**61000**	--	**920**	--	188.66
MW-25D	MW-25D_20150728	7/28/2015	10 U	4.8	2 U	72	5.8	204.53
MW-25D	MW-25D-20151210	12/10/2015	10 UJ	3.1 J	8.9	148	--	204.32
MW-25D-DUP	DUP-20151210	12/10/2015	10 UJ	3.1 J	9.4	146	--	204.32
MW-25D	MW-25D_20160728	7/28/2016	10 UJ	3.9	2 U	160	--	203.26
MW-25D	MW-25D_20161129	11/29/2016	10 U	2.8	2 U	140	3.4 J	201.60
MW-25D	MW-25D_20170228	2/28/2017	10 U	2.3	2 U	180	2.8 J	210.63
MW-25D	MW-25D_20170621	6/21/2017	10 U	2.7	2 U	140	3.1 J	209.66
MW-25D	MW-25D_20170915	9/15/2017	7.4 J	5.1	3.8	95	7.5	209.41
MW-25D	MW-25D_20171213	12/13/2017	10 U	5 U	--	120	8.2 J	209.75
MW-25D	MW-25D_20180322	3/22/2018	10 U	3.6	--	130	7.3	209.98
MW-25D	MW-25D_20180614	6/14/2018	10 U	3.9	--	110	5.3	208.77
MW-25D	MW-25D_20180920	9/20/2018	10 U	3.5 J	--	100	10 U	204.66
Deep Bedrock								
AW-C2	AW-C2_20150806	8/6/2015	10 U	19	2 U	19	5.1	189.47
AW-C2	AW-C2-20151210	12/10/2015	10 U	**73.9**	2 U	22	--	185.65
AW-C2	AW-C2_20160728	7/28/2016	10 U	13	2 U	10	--	187.74
AW-C2	AW-C2_20161129	11/29/2016	10 U	13	2 U	23	2.1 J	184.89
AW-C2	AW-C2_20170228	2/28/2017	10 U	27	2 U	42	3.9 J	187.50
AW-C2	AW-C2_20170621	6/21/2017	10 U	21	2 U	18	2.2 J	188.86
AW-C2	AW-C2_20170913	9/13/2017	10 U	13	2 U	29	2.6 J	187.55
AW-C2	AW-C2_20171213	12/13/2017	10 U	15	--	31	6.9 J	187.87
AW-C2	AW-C2_20180322	3/22/2018	10 U	22	--	32	5.5	188.05
AW-C2	AW-C2_20180612	6/12/2018	10 U	17 J	--	25 J	3.9 J	187.87
AW-C2	AW-C2_20180918	9/18/2018	10 U	21	--	48	10 U	188.64
AW-C11	AW-C11_20150806	8/6/2015	10 U	**120**	2 U	53	52	195.34
AW-C11	AW-C11A_A(1.0)-20150806 Diss	8/6/2015	10 U	**100**	--	--	53	195.34
AW-C11	AW-C11B_B(0.1)-20150806 Diss	8/6/2015	27	**82**	2 U	--	52	195.34
AW-C11	AW-C11-20151210	12/10/2015	**349** J	**479**	2 U	50	--	194.70
AW-C11	AW-C11_20160728	7/28/2016	10 U	**460**	2 UJ	28	--	194.52

Table 7
Groundwater - Chromium, Cyanide and Vanadium Analytical Results
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Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Total Chromium µg/l	Cyanide, Free µg/l	Cyanide, Total µg/l	Dissolved Vanadium µg/l	Water Elevation ft, NGVD29
	NYSDEC Class GA Groundwater Quality Standards (µg/l)		**50**	**50**	**-**	**200**	**-**	**-**
AW-C11	AW-C11_20161130	11/30/2016	**5400**	**6000**	2 U	110	33 J	193.15
AW-C11-DUP	DUP2_20161130	11/30/2016	**5300**	**6300**	2 U	110	34 J	193.15
AW-C11	AW-C11_20170301	3/1/2017	**2500**	**2900**	2 U	86	40 U	195.88
AW-C11-DUP	DUP_20170301	3/1/2017	**2500**	**2900**	2 U	89	40 U	195.88
AW-C11	AW-C11_20170621	6/21/2017	**2200**	**2500**	2 U	67	4 U	196.07
AW-C11	AW-C11_20170915	9/15/2017	**7800**	**7300**	2 U	110	2000 U	194.99
AW-C11	AW-C11_20171212	12/12/2017	**5800**	**5900**	--	86	1600	194.83
AW-C11	AW-C11_20180322	3/22/2018	**6200**	**6900**	--	130	250	195.54
AW-C11	AW-C11_20180614	6/14/2018	**7100**	**6900**	--	140	200 U	195.69
AW-C11	AW-C11_20180919	9/19/2018	**5300**	**4900**	--	120	10 U	195.21
AW-C11	AW-C11_20181211	12/11/2018	**3200**	**3800**	--	54 J	18	197.63
AW-C11	AW-C11_20190319	3/20/2019	**260**	**830**	--	83 J	--	196.85
AW-C11	AW-C11_20190618	6/18/2019	**4700**	**5400**	--	88 J	--	197.07
Equipment Blanks								
--	EB_20190319	3/19/2019	10 U	0.46 J	--	10 U	--	
--	EB_20190320	3/20/2019	10 UJ	0.52 U	--	10 U	--	
--	EB_20190321	3/21/2019	10 U	0.47 BJ	2 U	10 U	4 U	
--	EB_20190618	6/18/2019	10 U	0.84 J	--	10 U	--	
--	EB_20190619	6/19/2019	10 UJ	1.5 U	--	10 U	--	

Notes:
1) Sample ID nomenclature indicates the following:
"F" in sample ID indicates sample was field filtered using 0.45 micrometer filter
A(1.0) in sample ID indicates sample was field filtered using 1.0 micrometer filter
B(0.1) in sample ID indicates sample was field filtered using 0.1 micrometer filter
2) Groundwater GA Standard from 6 NYCRR 703.5, Table 1 Water Quality Standards (or Water Quality Guidance Values from NYS Division of Water TOGS 1.1.1). GA standards are for protective of fresh groundwaters for drinking water source.
(3) Water was ponded on the ground surface around MW-OB14, due to snow melt. The water level in MW-OB14 was approximately 9 feet lower after 1 hour of purging.
µg/L - micrograms per liter
BOLD value indicates concentration above GA standard
" - " indicates not available/not analyzed
U - indicates analyte was not detected above reporting limit shown
J - indicates value is estimated
F1 - MS and/or MSD Recovery is outside acceptance limits

Table 8
Surface Water - Chromium, Cyanide and Vanadium Analytical Results
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Chromium µg/l	Cyanide, Free µg/l	Cyanide, µg/l	Dissolved Vanadium µg/l	Hardness (As CaCO3) µg/l	Total Dissolved Solids µg/l
		SWQC A(C) ug/L	11	26	5.2	n/a	14	n/a	n/a
		SWQC A(A) ug/L	16	198	22	n/a	190	n/a	n/a
SW-01	SW-01_20150729	7/29/2015	10 UJ	2 U	2 UJ	10 UJ	2 U	37000	79000 J
SW-01	SW-01-20151208	12/8/2015	10 UJ	2 UJ	2 U	10 U	--	35300	55000
SW-01	SW-01_20160726	7/26/2016	10 U	2.5	2 U	10 UJ	--	38000	65000
SW-01	DUP1_20161201	12/1/2016	5.8 J	1.5 U	2 U	3.2 J	4 U	32000	81000
SW-01	SW-01_20161201	12/1/2016	10 U	1.5 U	2 U	10 U	4 U	28000	85000
SW-01	SW01_20170227	2/27/2017	10 U	1.5 U	2 U	10 U	4 U	16000	42000 J
SW-01	SW-01_20170622	6/22/2017	10 U	1.5 U	2 U	4 J	4 U	24000 J	40000
SW-01	SW-01_20170724	7/24/2017	10 U	1.4 J	--	--	4 U	41000	44000
SW-01	SW-01_20170912	9/12/2017	10 U	0.62 J	2 U	10 U	4 U	28000	55000
SW-01	SW-01_20171213	12/13/2017	5.7 J	5 U	2 U	10 UJ	10 U	20000	51000
SW-01	SW-01_20180320	3/20/2018	10 U	1.5 U	1.2 U	10 U	4 U	28000	48000
SW-01	SW-01_20180612	6/12/2018	10 U	0.82 J	1.2 U	10 J	4 U	40000	130000
SW-01	SW-01_20180920	9/20/2018	10 U	5 U	1.2 U	10 U	10 U	48000	110000 J
SW-01	SW-01_20190321	3/21/2019	10 U	1.5 U	2 U	--	4 U	20000	68000
SW-02	SW-02_20150729	7/29/2015	10 UJ	2 U	2 UJ	10 UJ	2 U	41000	81000 J
SW-02	DUP-M3_20150729	7/29/2015	10 UJ	2 U	2 UJ	10 UJ	2 U	35000	82000 J
SW-02	SW-02-20151208	12/8/2015	10 U	2 UJ	2 U	10 U	--	37600	62000
SW-02	SW-02_20160726	7/26/2016	8.9 J	1.6	2 U	10 UJ	--	34000	74000
SW-02	SW-02_20161201	12/1/2016	5 J	1.5 U	2 U	10 U	4 U	32000	81000
SW-02	SW02_20170227	2/27/2017	10 U	0.47 J	2 U	10 U	4 U	20000	58000 J
SW-02	SW-02_20170622	6/22/2017	10 U	1.5 U	2 U	10 U	4 U	28000 J	49000
SW-02	SW-02_20170724	7/24/2017	10 U	0.62 J	--	--	4 U	33000	24000
SW-02	SW-02_20170912	9/12/2017	10 U	0.56 J	2 U	2 UJ	4 U	28000	51000
SW-02	SW-02_20171213	12/13/2017	10 U	5 U	2 U	10 UJ	10 U	20000	48000
SW-02	SW-02_20180320	3/20/2018	10 U	1.5 U	1.2 U	6.5 J	4 U	36000	87000
SW-02	SW-02_20180612	6/12/2018	10 U	0.52 J	1.2 U	10 UJ	4 U	36000	100000
SW-02	SW-02_20180920	9/20/2018	10 U	5 U	1.2 U	13	10 U	36000	94000
SW-02	SW-02_20190321	3/21/2019	10 U	1.5 U	2 U	--	4 U	24000	67000

Table 8
Surface Water - Chromium, Cyanide and Vanadium Analytical Results
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Chromium µg/l	Cyanide, Free µg/l	Cyanide, µg/l	Dissolved Vanadium µg/l	Hardness (As CaCO3) µg/l	Total Dissolved Solids µg/l
		SWQC A(C) ug/L	11	26	5.2	n/a	14	n/a	n/a
		SWQC A(A) ug/L	16	198	22	n/a	190	n/a	n/a
SW-03	SW-03_20150729	7/29/2015	10 UJ	2 U	2 UJ	10 UJ	2 U	34000	85000 J
SW-03	SW-03-20151208	12/8/2015	10 UJ	2 UJ	2 U	10 U	--	27500	54000
SW-03	DUP-20151208	12/8/2015	10 UJ	2 UJ	2 U	10 U	--	27800	53000
SW-03	SW-03_20160726	7/26/2016	10 U	1 J	2 U	10 UJ	--	34000	56000
SW-03	DUP-20160726	7/26/2016	8.9 J	0.49 J	2 U	10 UJ	--	--	--
SW-03	SW-03_20161201	12/1/2016	10 U	1.5 U	2 U	10 U	4 U	44000	69000
SW-03	SW-03_20170118	1/18/2017	--	--	--	--	4 U	26000	57000
SW-03	SW03_20170227	2/27/2017	10 U	1.5 U	2 U	10 U	4 U	16000	57000 J
SW-03-DUP	DUP01_20170227	2/27/2017	10 U	1.5 U	2 U	10 U	4 U	12000	42000 J
SW-03	SW-03_20170425	4/25/2017	10 U	1.5 UJ	2 U	10 U	4 U	16000	49000
SW-03-DUP	DUP_20170622	6/22/2017	10 U	1.5 U	2 U	10 U	4 U	28000 J	40000
SW-03	SW-03_20170622	6/22/2017	10 U	1.5 U	2 U	3.1 J	4 U	20000 J	44000
SW-03	SW-03_20170724	7/24/2017	10 U	0.44 J	--	--	4 U	32000	16000
SW-03	SW-03_20170912	9/12/2017	10 U	0.43 J	2 U	10 UJ	4 U	24000	51000
SW-03-DUP	DUP_20170912	9/12/2017	10 U	0.49 J	2 U	10 UJ	4 U	28000	48000
SW-03	SW-03_20171213	12/13/2017	10 U	5 U	2 U	10 UJ	10 U	16000	40000
SW-03-DUP	DUP_20171213	12/13/2017	5.7 J	5 U	2 U	10 UJ	10 U	20000	53000
SW-03	SW-03_20180320	3/20/2018	10 U	1.5 U	1.2 U	10 U	4 U	24000	78000
SW-03-DUP	DUP_20180320	3/20/2018	10 U	1.5 U	1.2 U	3.4 J	4 U	28000	89000
SW-03	SW-03_20180612	6/12/2018	10 U	1.5 U	1.2 U	10 U	4 U	32000	100000
SW-03-DUP	DUP02_20180612	6/12/2018	8.3 J	1.5 UJ	1.2 U	10 UJ	4 U	32000	110000
SW-03	SW-03_20180920	9/20/2018	6.2 J	5 U	1.2 U	10 U	10 U	32000	81000 J
SW-03-DUP	DUP_20180920	9/20/2018	5 J	5 U	1.2 U	10 U	10 U	32000	100000 J
SW-03-DUP	SW-03_20190321	3/21/2019	10 U	1.5 U	2 U	--	4 U	16000	52000
SW-03	SW-03_20190321	3/21/2019	10 U	1.5 U	2 U	--	4 U	20000	60000
SW-04	SW-04_20150729	7/29/2015	10 UJ	2 U	2 UJ	10 UJ	2 U	33000	83000 J
SW-04	SW-04-20151208	12/8/2015	10 UJ	2 UJ	2 U	10 U	--	33700	53000
SW-04	SW-04_20160726	7/26/2016	9.8 J	0.43 J	2 U	10 UJ	--	30000	64000
SW-04	SW-04_20161201	12/1/2016	10 U	1.5 U	2 U	10 U	4 U	32000	79000

Table 8
Surface Water - Chromium, Cyanide and Vanadium Analytical Results
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent µg/l	Dissolved Chromium µg/l	Cyanide, Free µg/l	Cyanide, µg/l	Dissolved Vanadium µg/l	Hardness (As CaCO3) µg/l	Total Dissolved Solids µg/l
		SWQC A(C) ug/L	11	26	5.2	n/a	14	n/a	n/a
		SWQC A(A) ug/L	16	198	22	n/a	190	n/a	n/a
SW-04	SW-04_20170622	6/22/2017	10 U	1.5 U	2 U	10 U	4 U	44000 J	47000
SW-04	SW-04_20170912	9/12/2017	16	1.5 U	2 U	10 UJ	4 U	24000	44000
SW-04	SW-04_20171213	12/13/2017	10 U	5 U	2 U	10 UJ	10 U	20000	48000
SW-04	SW-04_20180320	3/20/2018	10 U	1.5 U	1.2 U	2.8 J	4 U	24000	63000
SW-04	SW-04_20180612	6/12/2018	10 U	0.37 J	1.2 U	10 UJ	4 U	32000	110000
SW-04	SW-04_20180920	9/20/2018	6.2 J	5 U	1.2 U	2.9 J	10 U	32000	93000 J
SW-04	SW-04_20190321	3/21/2019	10 U	1.5 U	2 U	--	4 U	20000	56000

Notes:

µg/L - micrograms per liter

" - " indicates not available/not analyzed

U - indicates analyte was not detected above reporting limit shown

J - indicates value is estimated

n/a - indicates no standard available

1) Surface Water Quality Criteria (SWQC) are aquatic values, A(C) and A(A), from NYS Division of Water Technical and Operations Guidance Series *(TOGS 1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.*

Hudson River is classified as Class C waters in site vicinity.

SWQC shown are applicable for Class C, fresh water (chloride concentrations less than 250 mg/L or total dissolved solids less than 1,000 mg/L)

A(C) - protective of fish propagation in fresh waters - applicable to dissolved phases only (or acid soluble phase for vanadium)

A(A) - protective of fish survival in fresh waters - applicable to dissolved phases only (acid soluble phase for vanadium)

Calculated values based on hardness (per TOGS 1.1.1):

Chromium A(C) = (0.86) exp(0.819 [ln (ppm hardness)] + 0.6848)

Chromium A(A) = (0.316) exp(0.819 [ln (ppm hardness)] + 3.7256)

Chromium aquatic standard applies to dissolved form and does not include hexavalent chromium.

Vanadium aquatic standard applies to acid soluble form.

Table 9
Surface Water Quality Criteria for Hudson River
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location	Sample ID	Date	Hardness (As CaCO3)	Total Dissolved Solids (Residue, Filterable)	Hexavalent Chromium (dissolved) WQS		Calculated Chromium (dissolved) WQS		Free Cyanide WQS		Vanadium (dissolved) WQS	
Surface Water Quality Criteria (SWQC)[1]			µg/l	µg/l	A(C)	A(A)	A(C)	A(A)	A(C)	A(A)	A(C)	A(A)
SW-01	SW-01-20151208	12/08/15	35300	79000 J	11	16	32	243	5.2	22	14	190
SW-01	SW-01_20160726	07/25/16	38000	65000	11	16	34	258	5.2	22	14	190
SW-01	DUP1_20161201	12/01/16	32000	81000	11	16	29	224	5.2	22	14	190
SW-01	SW-01_20161201	12/01/16	28000	85000	11	16	26	201	5.2	22	14	190
SW-01	SW01_20170227	02/27/17	16000	42000	11	16	17	127	5.2	22	14	190
SW-01	SW-01_20170622	06/22/17	24000	40000	11	16	23	177	5.2	22	14	190
SW-01	SW-01_20170724	07/24/17	41000	44000	11	16	36	275	5.2	22	14	190
SW-01	SW-01_20170912	09/12/17	28000	55000	11	16	26	201	5.2	22	14	190
SW-01	SW-01_20171213	12/13/17	20000	51000	11	16	20	152	5.2	22	14	190
SW-01	SW-01_20180320	03/20/18	28000	48000	11	16	26	201	5.2	22	14	190
SW-01	SW-01_20180612	6/12/2018	40000	130000	11	16	35	269	5.2	22	14	190
SW-01	SW-01_20180920	9/20/2018	48000	110000	11	16	41	312	5.2	22	14	190
SW-01	SW-01_20190321	3/21/2019	20000	68000	11	16	20	152	5.2	22	14	190
SW-02	SW-02-20151208	12/08/15	37600	81000 J	11	16	33	256	5.2	22	14	190
SW-02	SW-02_20160726	07/25/16	34000	74000	11	16	31	235	5.2	22	14	190
SW-02	SW-02_20161201	12/01/16	32000	81000	11	16	29	224	5.2	22	14	190
SW-02	SW02_20170227	02/27/17	20000	58000	11	16	20	152	5.2	22	14	190
SW-02	SW-02_20170622	06/22/17	28000	49000	11	16	26	201	5.2	22	14	190
SW-02	SW-02_20170724	07/24/17	33000	24000	11	16	30	230	5.2	22	14	190
SW-02	SW-02_20170912	09/12/17	28000	51000	11	16	26	201	5.2	22	14	190
SW-02	SW-02_20171213	12/13/17	20000	48000	11	16	20	152	5.2	22	14	190
SW-02	SW-02_20180320	03/20/18	36000	87000	11	16	32	247	5.2	22	14	190
SW-02	SW-02_20180612	6/12/2018	36000	100000	11	16	32	247	5.2	22	14	190
SW-02	SW-02_20180920	9/20/2018	36000	94000	11	16	32	247	5.2	22	14	190
SW-02	SW-02_20190321	3/21/2019	24000	67000	11	16	23	177	5.2	22	14	190
SW-03	SW-03-20151208	12/08/15	27500	82000 J	11	16	26	198	5.2	22	14	190
SW-03	SW-03_20160725	07/25/16	34000	56000	11	16	31	235	5.2	22	14	190
SW-03	DUP-20160726	07/26/16	--	--	11	16	--	--	5.2	22	14	190
SW-03	SW-03_20161201	12/01/16	44000	69000	11	16	38	291	5.2	22	14	190
SW-03	SW-03_20170118	01/18/17	26000	57000	11	16	25	189	5.2	22	14	190
SW-03	SW03_20170227	02/27/17	16000	57000	11	16	17	127	5.2	22	14	190
SW-03	DUP01_20170227	02/27/17	12000	42000	11	16	13	100	5.2	22	14	190
SW-03	SW-03_20170425	04/25/17	16000	49000	11	16	17	127	5.2	22	14	190
SW-03	DUP_20170622	06/22/17	28000	40000	11	16	26	201	5.2	22	14	190
SW-03	SW-03_20170622	06/22/17	20000	44000	11	16	20	152	5.2	22	14	190

Table 9
Surface Water Quality Criteria for Hudson River
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location	Sample ID	Date	Hardness (As CaCO3)	Total Dissolved Solids (Residue, Filterable)	Hexavalent Chromium (dissolved) WQS		Calculated Chromium (dissolved) WQS		Free Cyanide WQS		Vanadium (dissolved) WQS	
Surface Water Quality Criteria (SWQC)[1]			µg/l	µg/l	A(C)	A(A)	A(C)	A(A)	A(C)	A(A)	A(C)	A(A)
SW-03	SW-03_20170724	07/24/17	32000	16000	11	16	29	224	5.2	22	14	190
SW-03	SW-03_20170912	09/12/17	24000	51000	11	16	23	177	5.2	22	14	190
SW-03	SW-03-DUP	09/12/17	28000	48000	11	16	26	201	5.2	22	14	190
SW-03	SW-03_20171213	12/13/17	16000	40000	11	16	17	127	5.2	22	14	190
SW-03	DUP_20171213	12/13/17	20000	53000	11	16	20	152	5.2	22	14	190
SW-03	SW-03_20180320	03/20/18	24000	78000	11	16	23	177	5.2	22	14	190
SW-03	SW-03_20180612	6/12/2018	32000	110000	11	16	29	224	5.2	22	14	190
SW-03	SW-03_20180920	9/20/2018	32000	81000	11	16	29	224	5.2	22	14	190
SW-03	DUP_20180920	9/20/2018	32000	100000	11	16	29	224	5.2	22	14	190
SW-03-DUP	SW-03_20190321	3/21/2019	16000	52000	11	16	17	127	5.2	22	14	190
SW-03	SW-03_20190321	3/21/2019	20000	60000	11	16	20	152	5.2	22	14	190
SW-04	SW-04-20151208	12/08/15	33700	85000 J	11	16	30	234	5.2	22	14	190
SW-04	SW-04_20160725	07/25/16	30000	64000	11	16	28	213	5.2	22	14	190
SW-04	SW-04_20161201	12/01/16	32000	79000	11	16	29	224	5.2	22	14	190
SW-04	SW-04_20170622	06/22/17	44000	47000	11	16	38	291	5.2	22	14	190
SW-04	SW-04_20170912	09/12/17	24000	44000	11	16	23	177	5.2	22	14	190
SW-04	SW-04_20171213	12/13/17	20000	48000	11	16	20	152	5.2	22	14	190
SW-04	SW-04_20180320	03/20/18	24000	63000	11	16	23	177	5.2	22	14	190
SW-04	SW-04_20180612	06/12/18	32000	110000	11	16	29	177	5.2	22	14	190
SW-04	SW-04_20180920	09/20/18	32000	93000	11	16	29	177	5.2	22	14	190
SW-04	SW-04_20190321	03/21/19	20000	56000	11	16	20	177	5.2	22	14	190

Notes:

1) Surface water quality criteria (SWQC) from Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations from NYS Division of Water TOGS 1.1.1. Hudson River is classified as Class C waters in site vicinity.

Surface water quality criteria shown are applicable for Class C, fresh water (chloride concentrations less than 250 mg/L or total dissolved solids less than 1,000 mg/L).

A(C) - protective of fish propogation in fresh waters - applicable to dissolved phases only (or acid soluble phase for vanadium).

A(A) - protective of fish survival in fresh waters - applicable to dissolved phases only (acid soluble phase for vanadium).

Calculated values based on hardness (per TOGS 1.1.1):

Chromium A(C) = (0.86) exp(0.819 [ln (ppm hardness)] + 0.6848)

Chromium A(A) = (0.316) exp(0.819 [ln (ppm hardness)] + 3.7256)

Chromium aquatic standard applies to dissolved form and does not include hexavalent chromium.

Vanadium aquatic standard applies to acid soluble form.

n/a - indicates no standard available

µg/L - micrograms per liter J - indicates value is estimated

Table 10
Comparison of Hexavalent Chromium Results Utilizing Alternate Laboratory Methods
Groundwater and Surface Water Monitoring Report
Main Plant Site - Glens Falls, NY

Location ID	Sample Name	Sample Date	Dissolved Chromium, Hexavalent		
			Method 7196A µg/l	Method 218.6 µg/l	Method 3500CrD µg/l
NYSDEC Class GA Groundwater Quality Standards (µg/l) [(1)]			50	50	50
MW-OB14	MW-OB14_20190618	6/18/2019	**120**	**150**	**130**
EW-B5	EW-B5_20190618	6/18/2019	**46000**	**47000**	**45000**
AW-C11	AW-C11_20190618	6/18/2019	**4700**	**4300**	**4200**
Equipment Blanks					
--	EB_20190618	6/18/2019	10 U	0.3 U	10 U

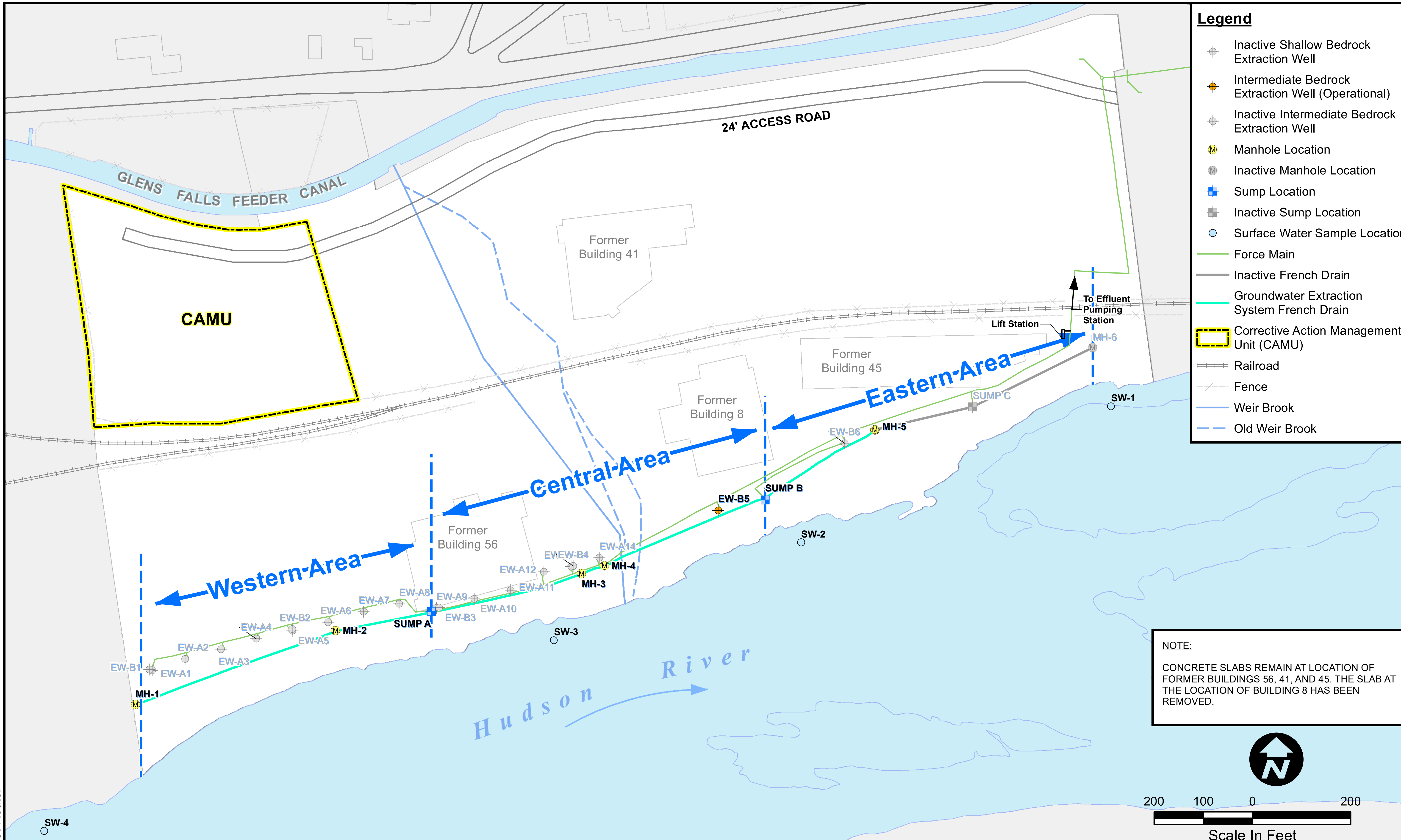
Notes:

1) Groundwater GA Standard from 6 NYCRR 703.5, Table 1 Water Quality Standards (or Water Quality Guidance Values from NYS Division of Water TOGS 1.1.1). GA standards are for protective of fresh groundwaters for drinking water source.

µg/L - micrograms per liter

BOLD value indicates concentration above GA standard

Figures

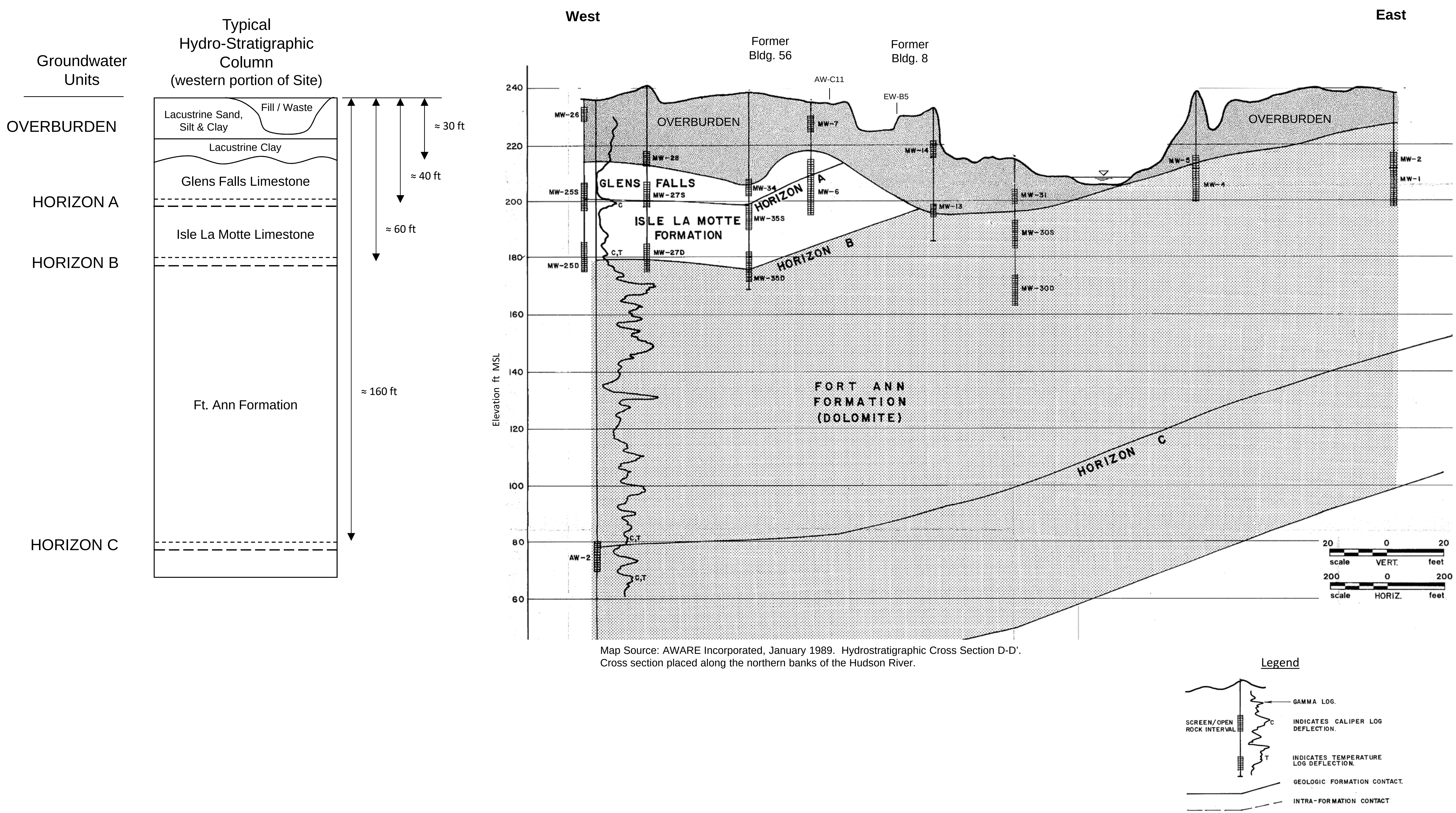


EHS Support

ASHLAND
FORMER CIBA-GEIGY / HERCULES SITE
GLENS FALLS, NY

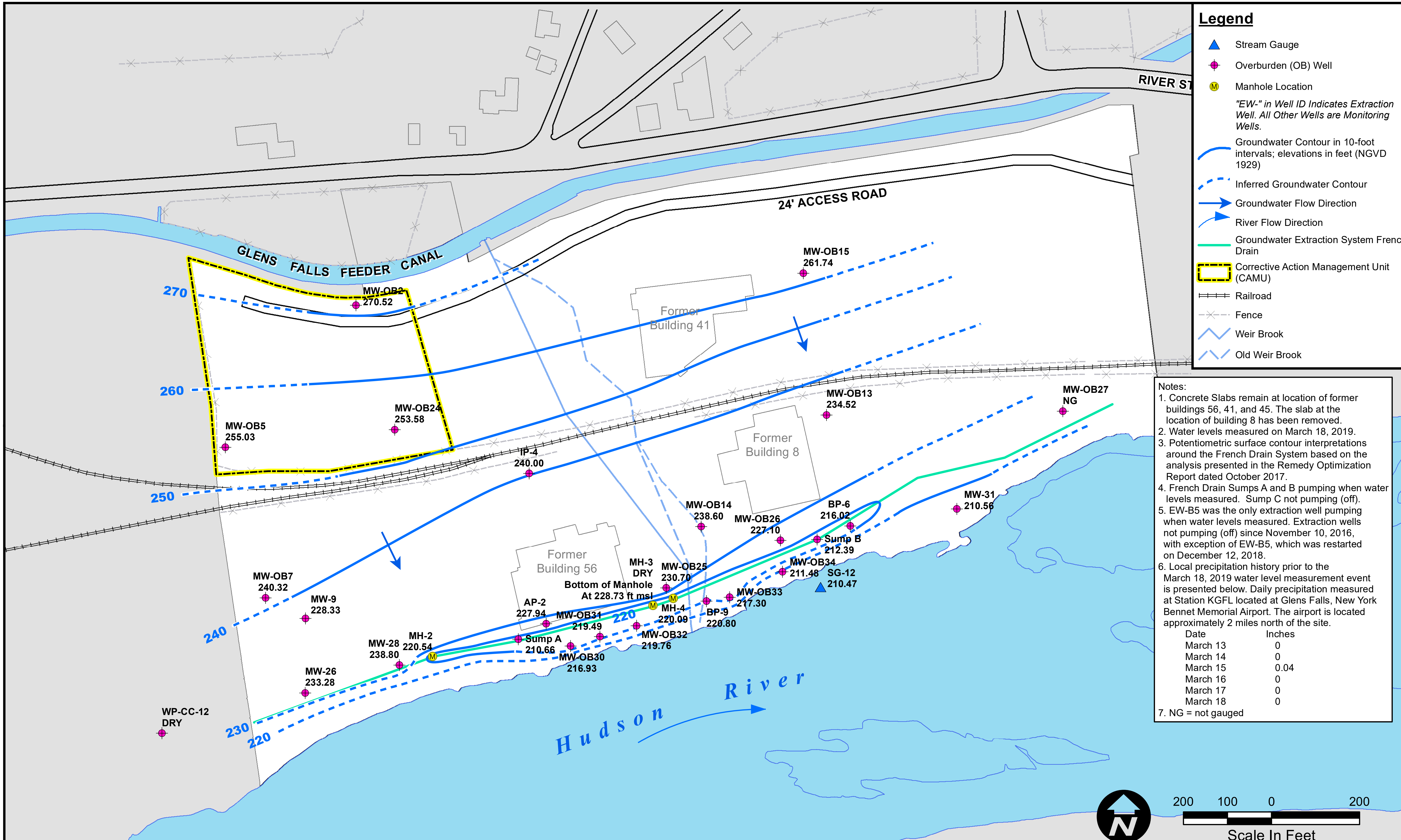
GROUNDWATER EXTRACTION SYSTEM COMPONENTS AND SURFACE WATER SAMPLING LOCATIONS

FIGURE 1



Map Source: AWARE Incorporated, January 1989. Hydrostratigraphic Cross Section D-D'.
Cross section placed along the northern banks of the Hudson River.

Former Ciba-Geigy / Hercules Glens Falls, NY EHS Support July 2018	**Hydro-Stratigraphic Units and Geologic Cross Section**	**Figure 2**



EHS Support	ASHLAND FORMER CIBA-GEIGY / HERCULES SITE GLENS FALLS, NY	OVERBURDEN WELL LOCATIONS AND POTENTIOMETRIC SURFACE: MARCH 2019	Figure 3

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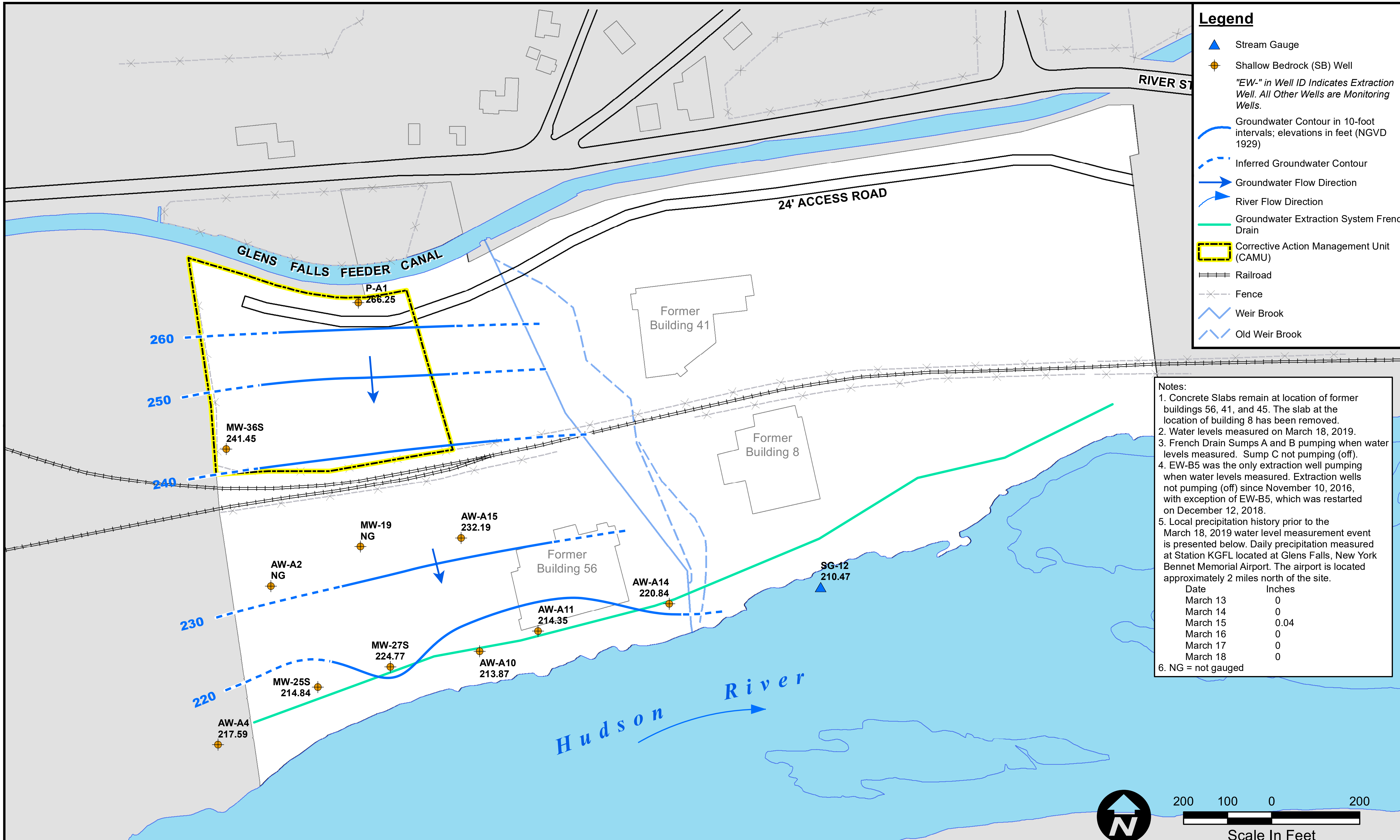

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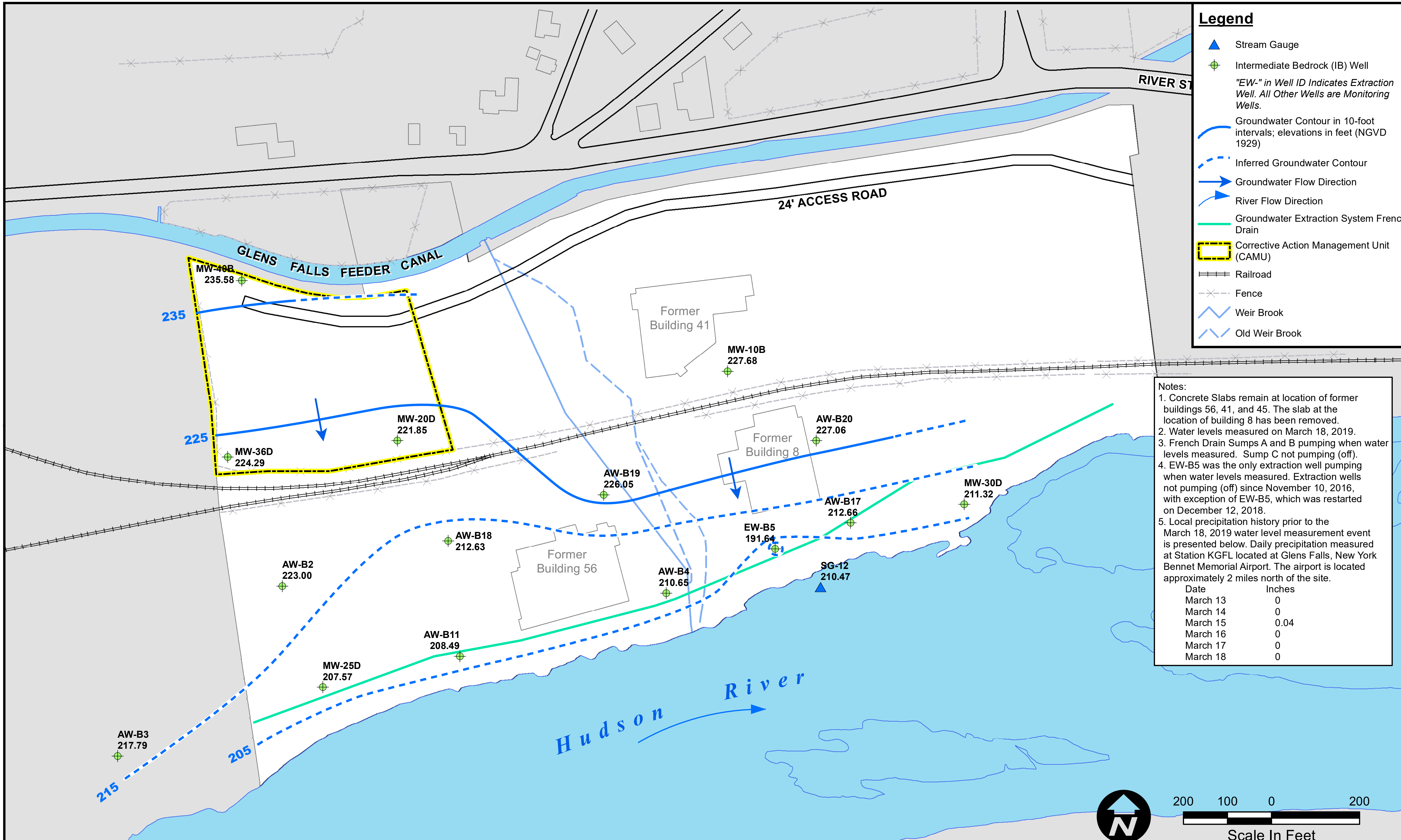
EHS Support	ASHLAND FORMER CIBA-GEIGY / HERCULES SITE GLENS FALLS, NY	SHALLOW BEDROCK WELL LOCATIONS AND POTENTIOMETRIC SURFACE: MARCH 2019	Figure 4



EHS Support

ASHLAND
FORMER CIBA-GEIGY / HERCULES SITE
GLENS FALLS, NY

INTERMEDIATE BEDROCK WELL LOCATIONS AND BEDROCK POTENTIOMETRIC SURFACE: MARCH 2019

Figure 5

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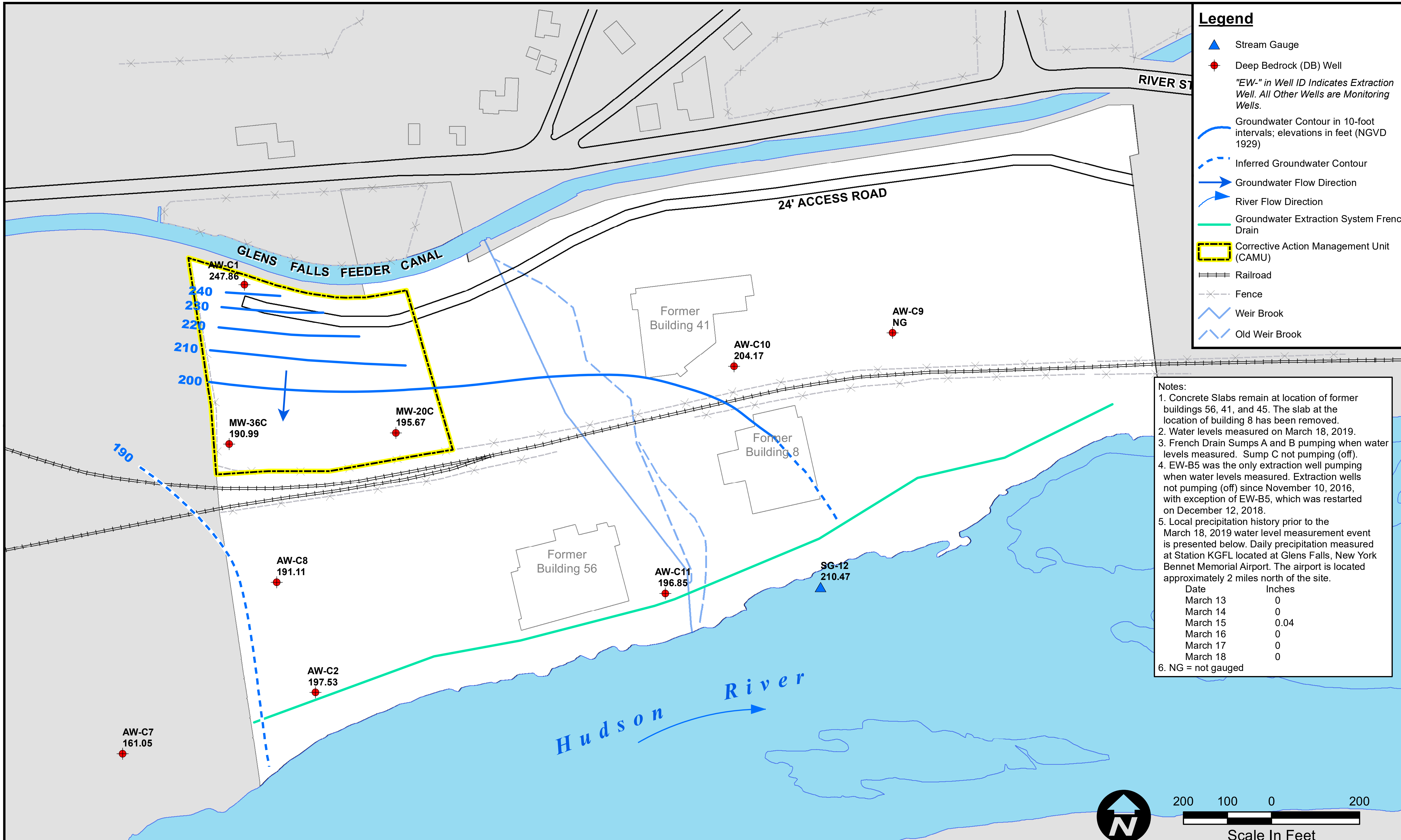

EHS Support	ASHLAND FORMER CIBA-GEIGY / HERCULES SITE GLENS FALLS, NY	DEEP BEDROCK WELL LOCATIONS AND POTENTIOMETRIC SURFACE: MARCH 2019	Figure 6

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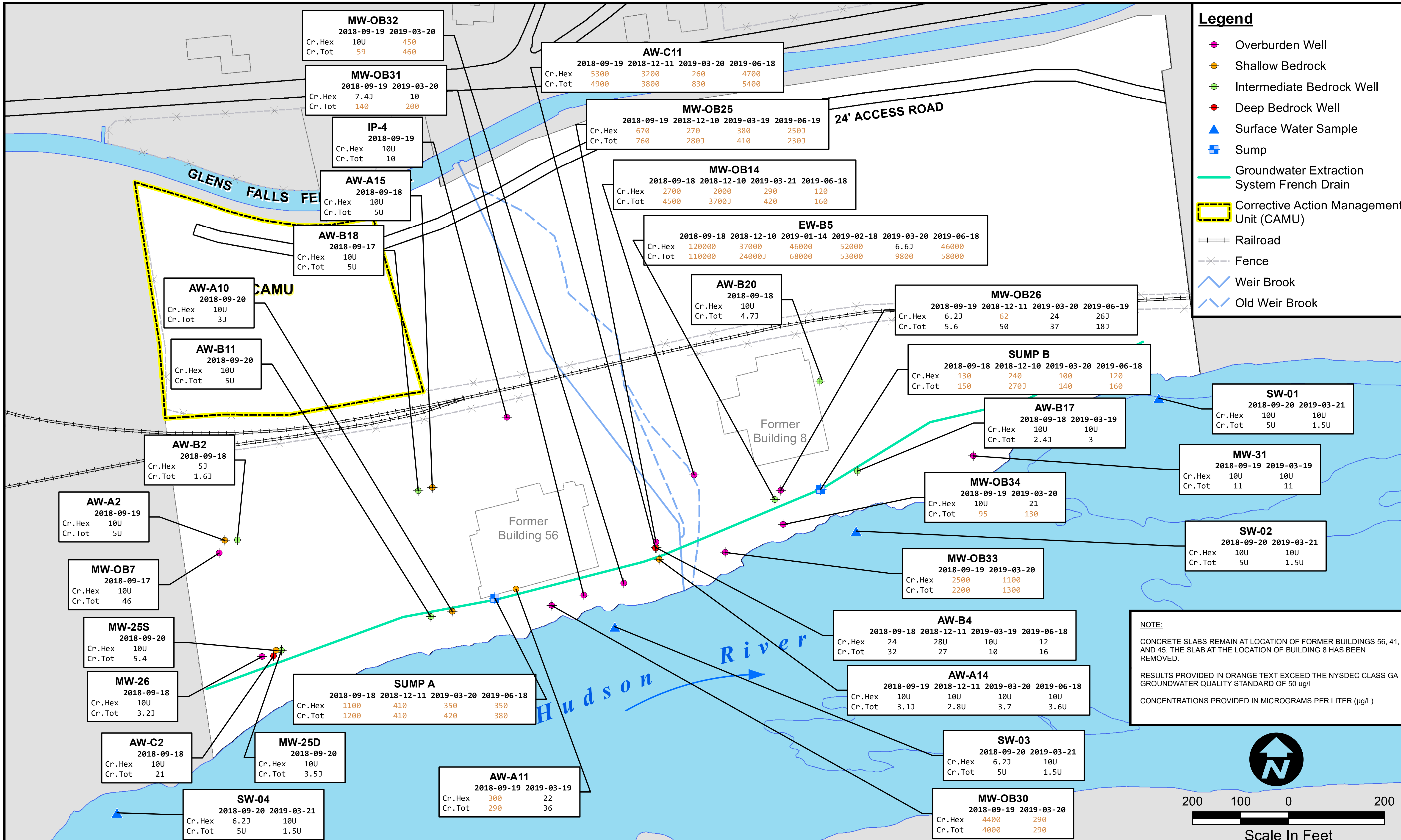

EHS Support

ASHLAND
FORMER CIBA-GEIGY / HERCULES SITE
GLENS FALLS, NY

CHROMIUM RESULTS - SEPTEMBER 2018 THROUGH JUNE 2019

FIGURE 7

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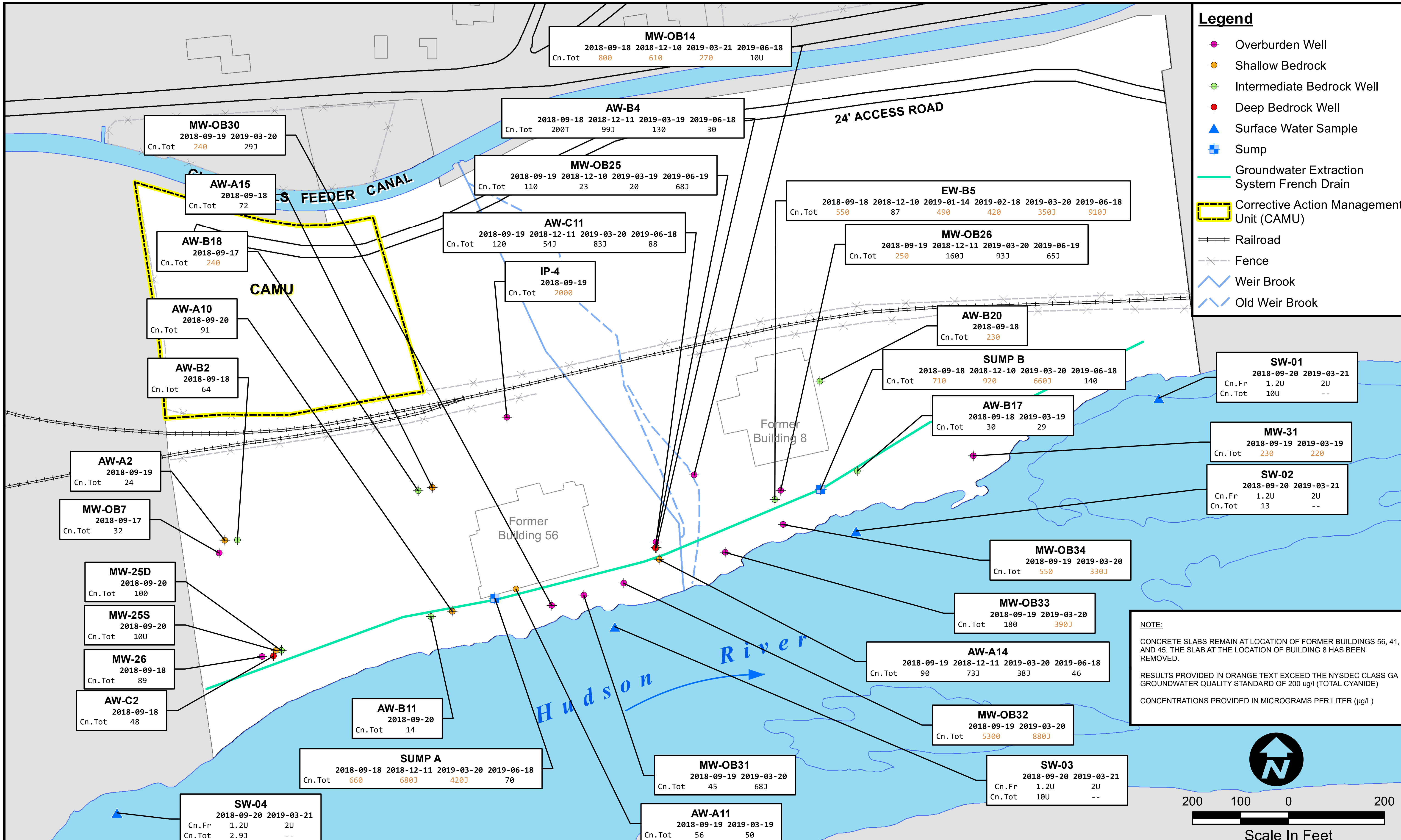

EHS Support

ASHLAND
FORMER CIBA-GEIGY / HERCULES SITE
GLENS FALLS, NY

CYANIDE RESULTS - SEPTEMBER 2018 THROUGH JUNE 2019

FIGURE 8

J:\EHSS_GIS\C16262_GlensFallsHudsonRiver\01_ANALYSIS\20170314_Feb_GW\CrCn_Series - July 2017.mxd

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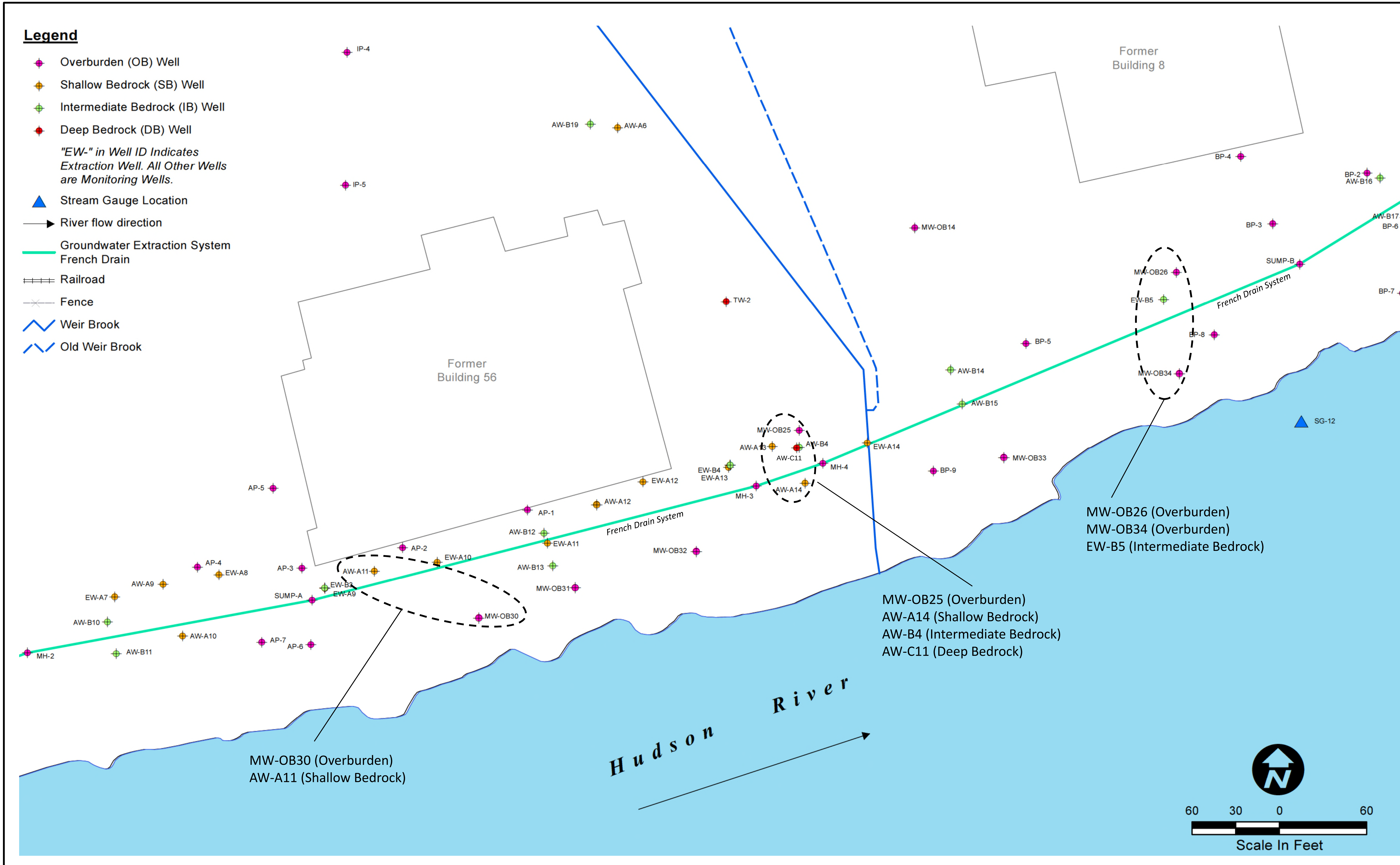
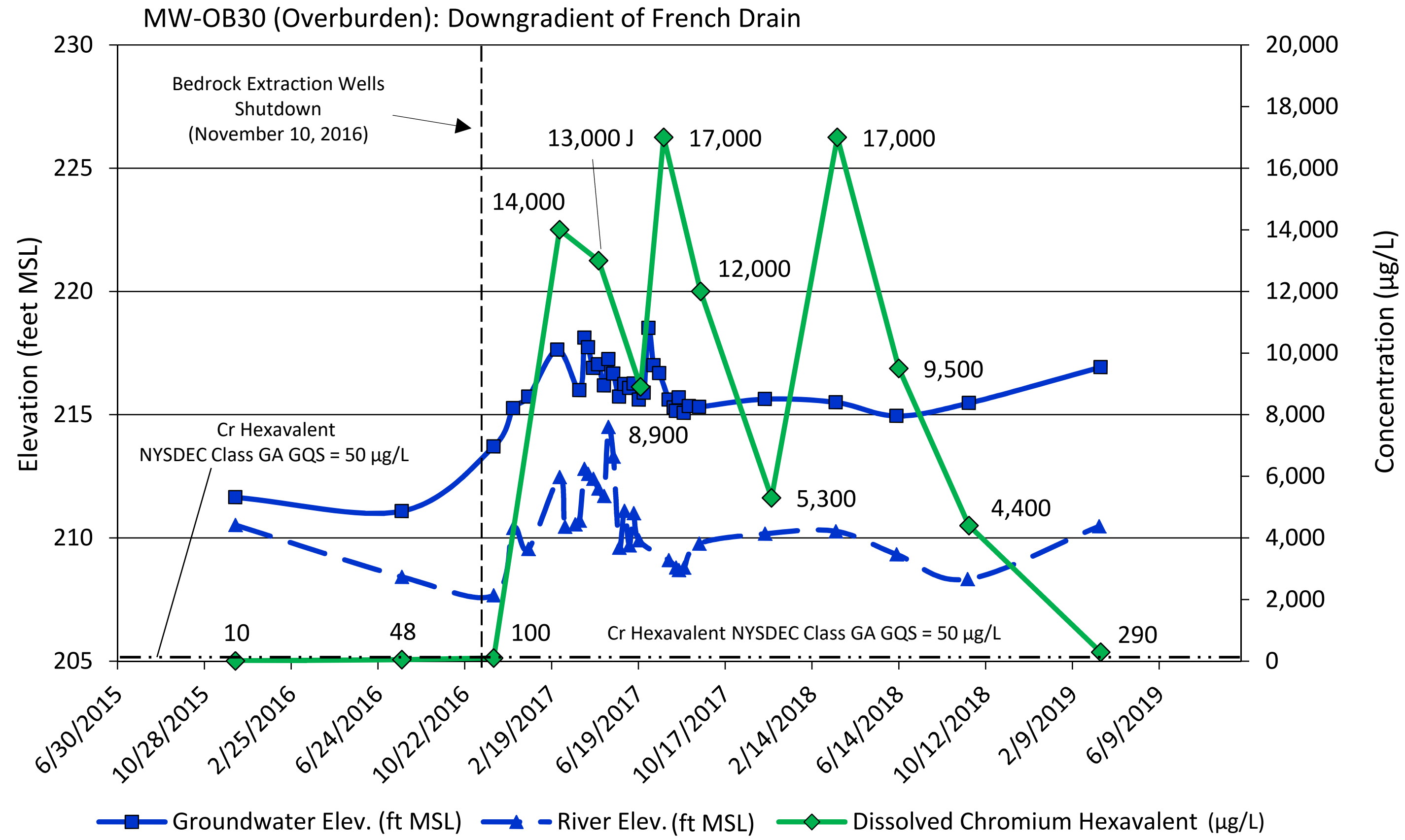
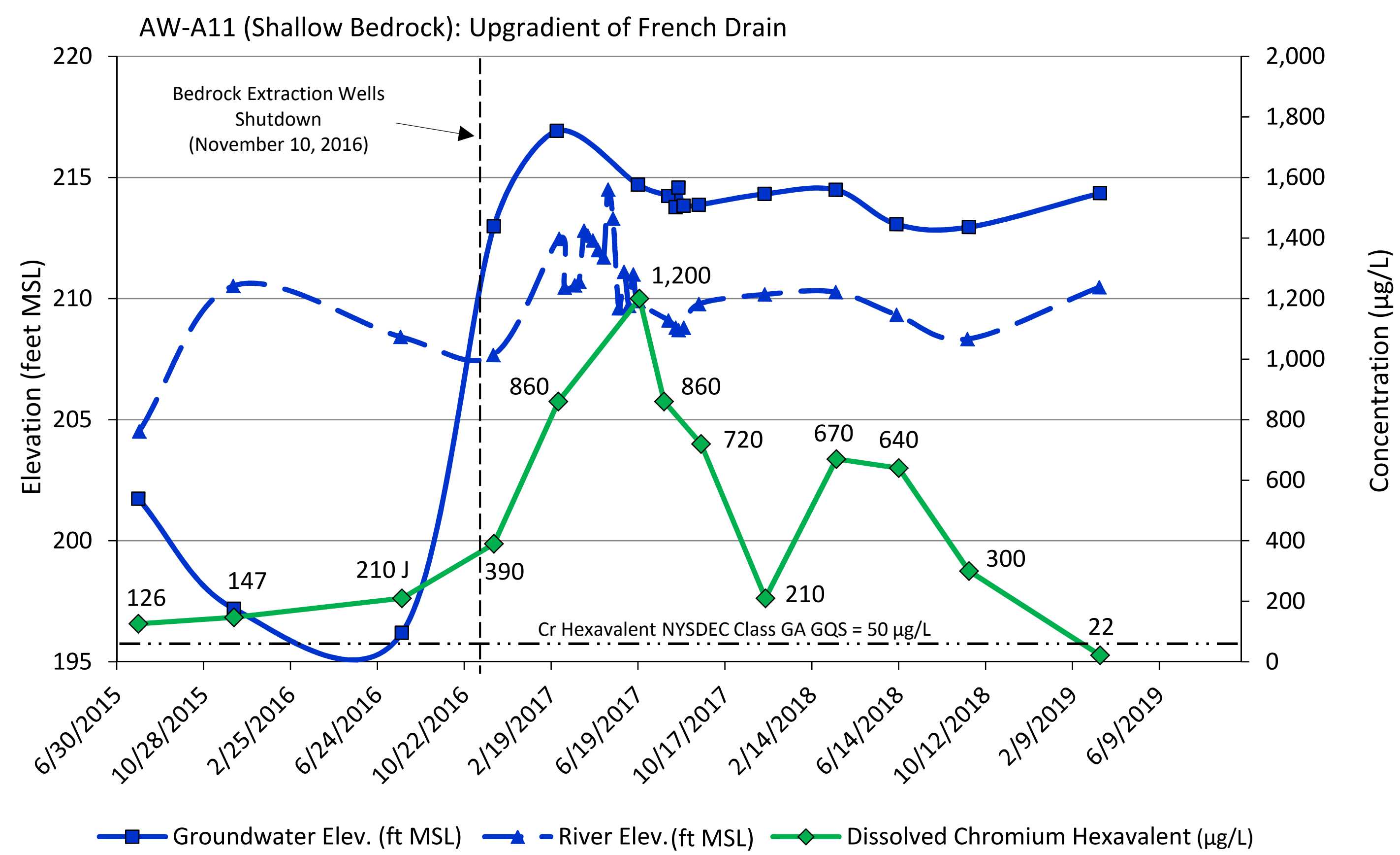


Former Ciba-Geigy / Hercules
Glens Falls, NY
EHS Support August 2019

Monitoring Well Locations: MW-OB25, MW-OB26, MW-OB30, MW-OB34, AW-A11, AW-A14, AW-B4, EW-B5, and AW-C11

Figure 9

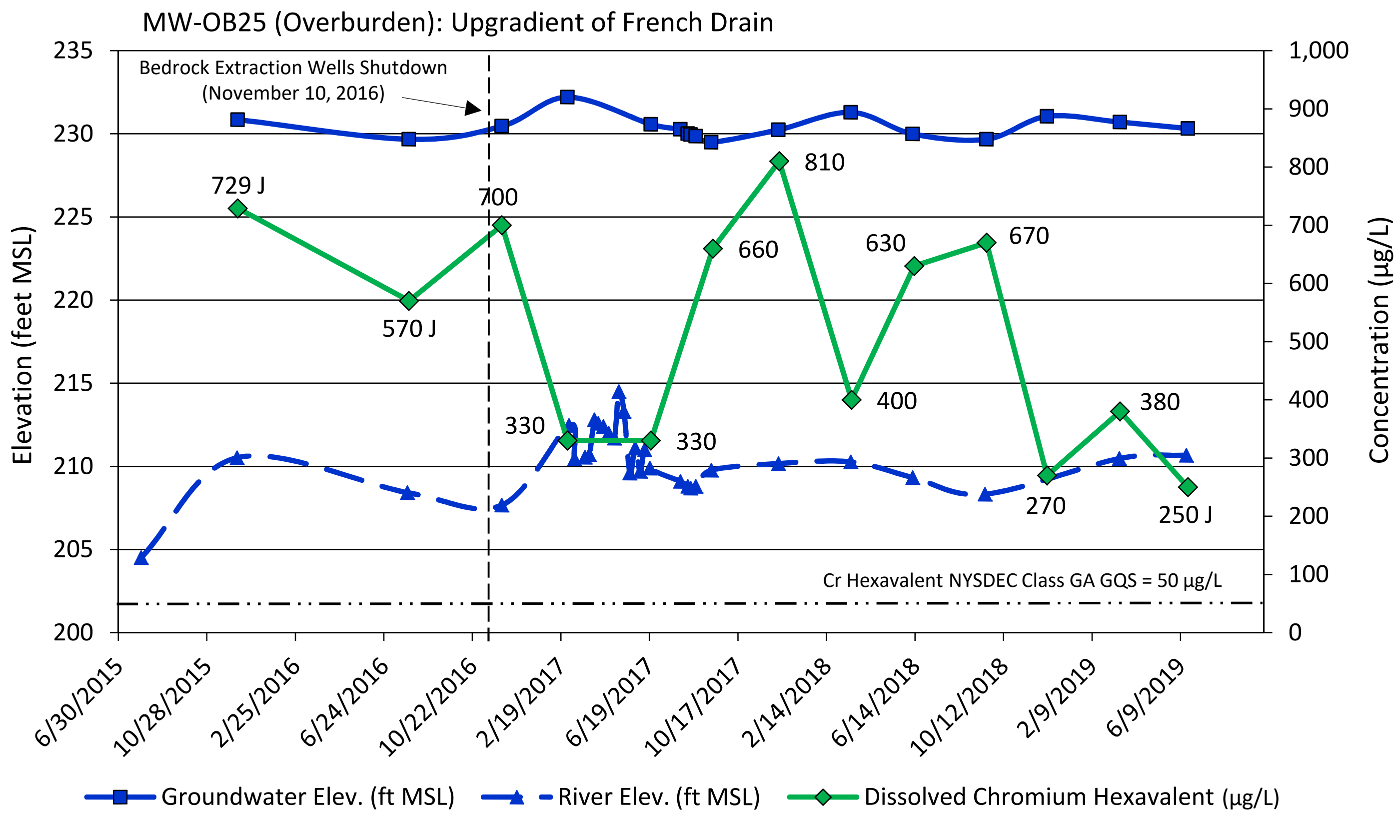


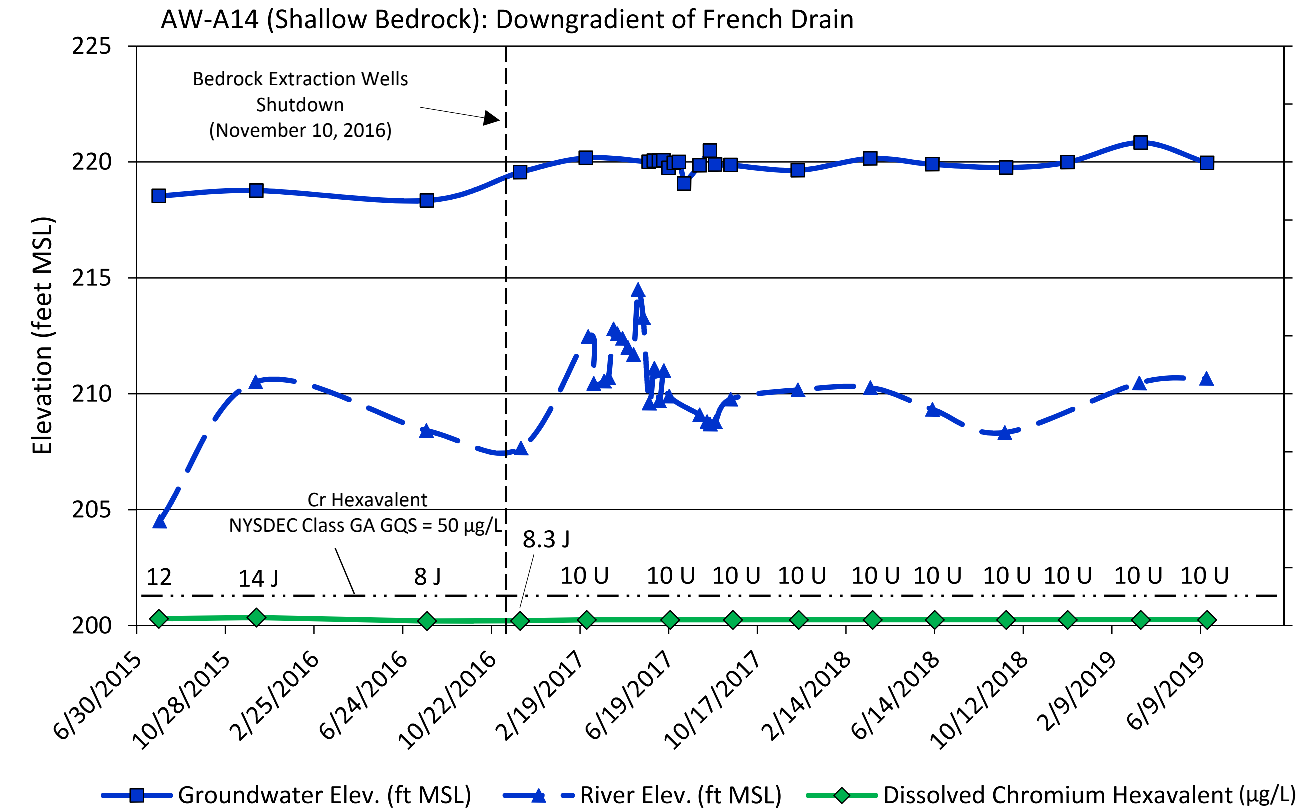


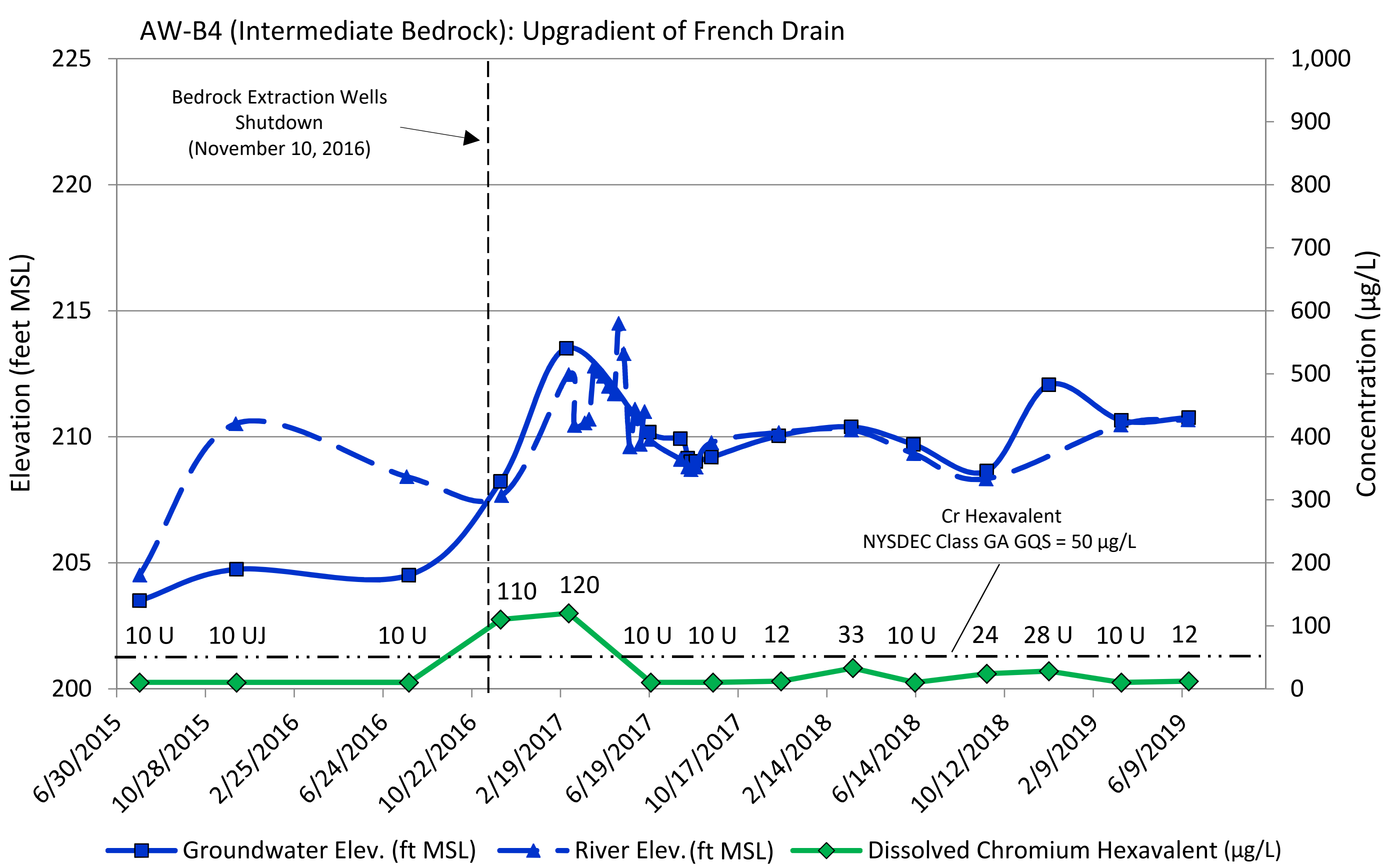
Notes:

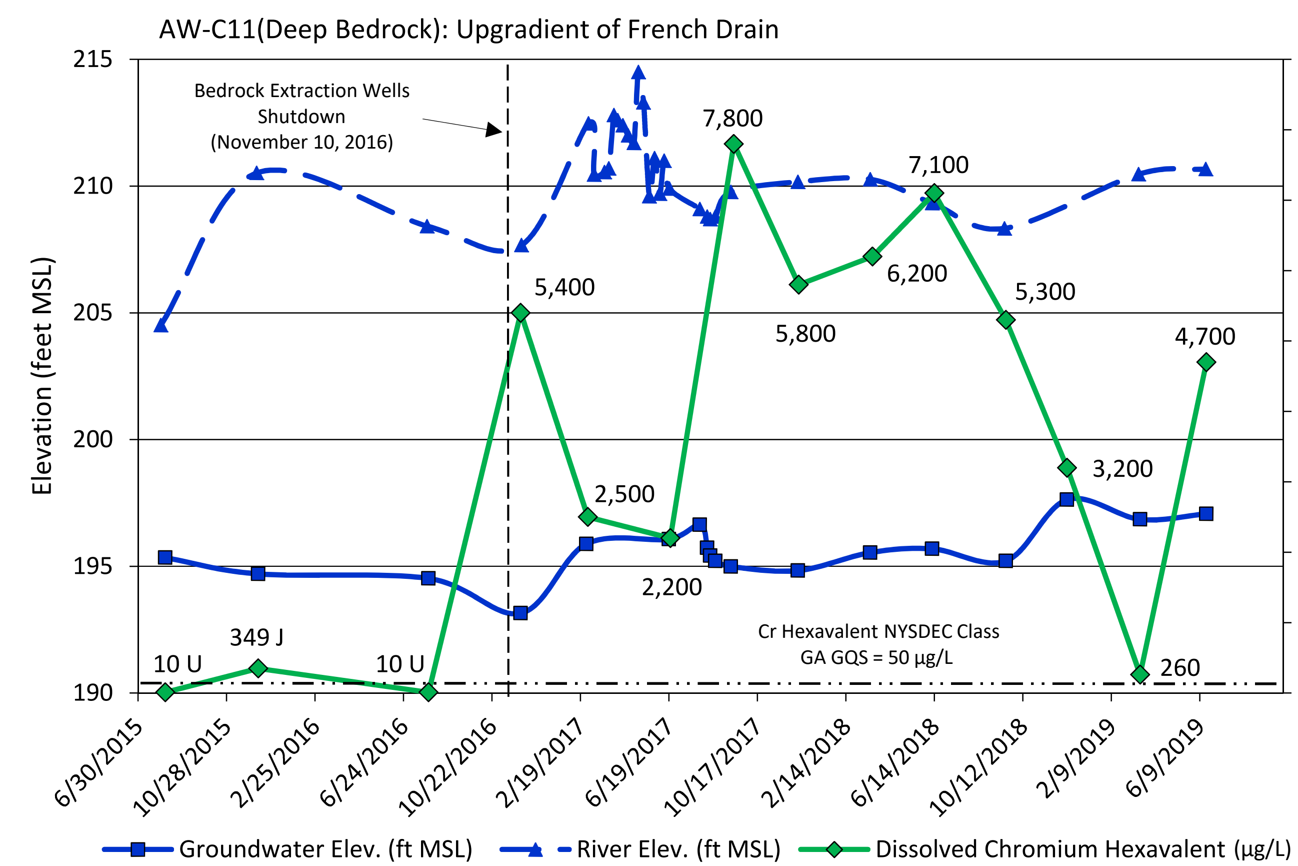
1. Groundwater (monitoring well) and surface water (Hudson River) hydraulic data points plotted on the graph are manual field measurements.
2. NYSDEC Class GA groundwater quality standard (GQS) from 6 NYCRR 703.5, Table 1 Water Quality Standards and Water Quality Guidance Values from NYS Division of Water TOGS 1.1.1.
3. U = indicates analyte was not detected above reporting limit shown
4. J = indicates value is estimated
5. µg/L = micrograms per liter
6. ft = feet
7. MSL = mean sea level

Former Ciba-Geigy / Hercules Glens Falls, NY EHS Support August 2019	**Chromium Concentration Plots: MW-OB30 (Overburden) and AW-A11 (Shallow Bedrock)**	**Figure 10**





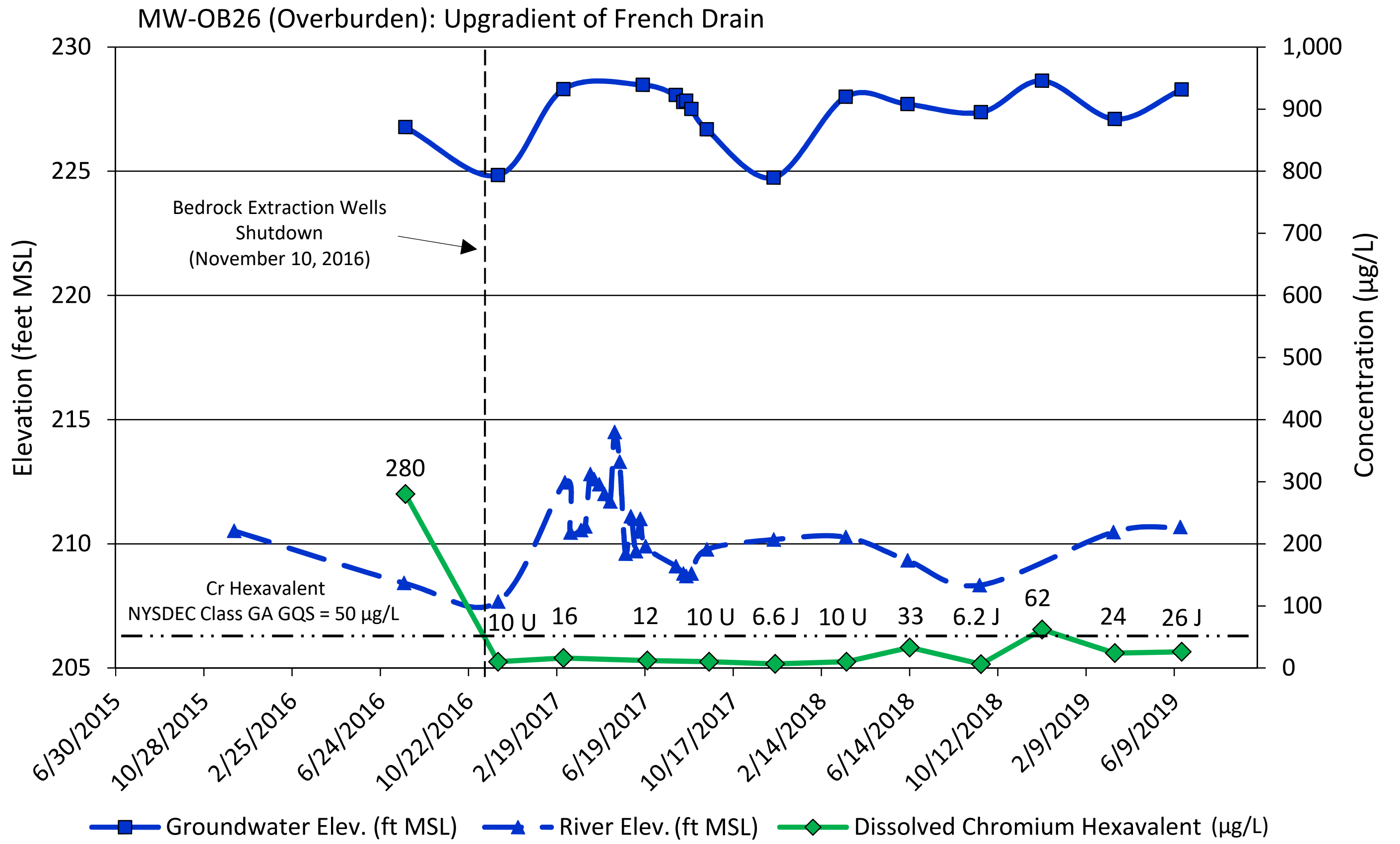


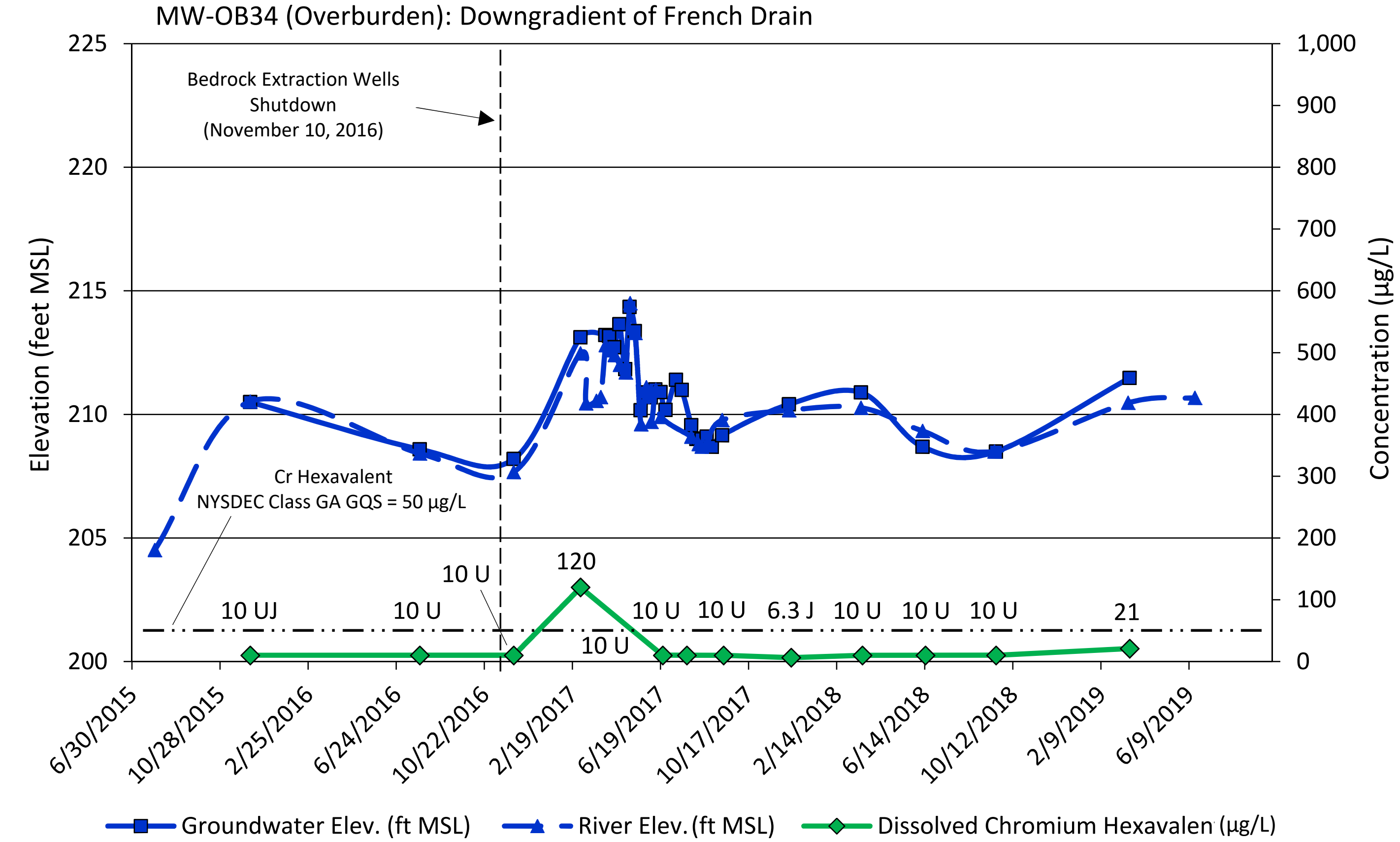


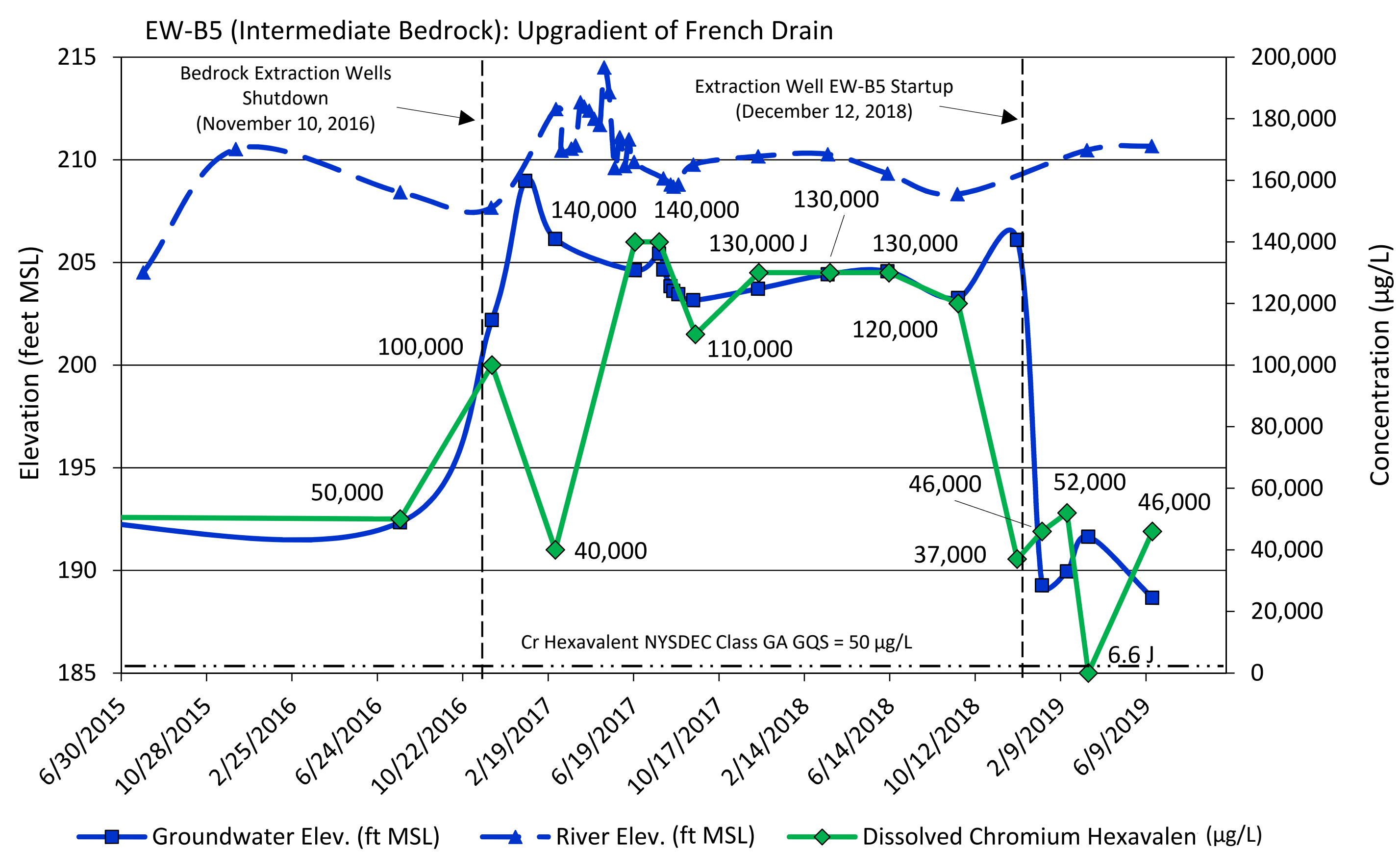
Notes:

1. Groundwater (monitoring well) and surface water (Hudson River) hydraulic data points plotted on the graph are manual field measurements.
2. NYSDEC Class GA groundwater quality standard (GQS) from 6 NYCRR 703.5, Table 1 Water Quality Standards and Water Quality Guidance Values from NYS Division of Water TOGS 1.1.1
3. U = indicates analyte was not detected above reporting limit shown
4. J = indicates value is estimated
5. µg/L = micrograms per liter
6. ft = feet
7. MSL = mean sea level

Former Ciba-Geigy / Hercules Glens Falls, NY EHS Support *August 2019*	**Chromium Concentration Plots: MW-OB25 (Overburden), AW-A14 (Shallow Bedrock), AW-B4 (Intermediate Bedrock) and AW-C11 (Deep Bedrock)**	**Figure 11**







Notes:
1. Groundwater (monitoring well) and surface water (Hudson River) hydraulic data points plotted on the graph are manual field measurements.
2. NYSDEC Class GA groundwater quality standard (GQS) from 6 NYCRR 703.5, Table 1 Water Quality Standards and Water Quality Guidance Values from NYS Division of Water TOGS 1.1.1.
3. U = indicates analyte was not detected above reporting limit shown
4. J = indicates value is estimated
5. µg/L = micrograms per liter
6. ft = feet
7. MSL = mean sea level

Former Ciba-Geigy / Hercules
Glens Falls, NY
EHS Support August 2019

Chromium Concentration Plots: MW-OB26 (Overburden), MW-OB34 (Overburden), and EW-B5 (Intermediate Bedrock)

Figure 12

Appendix A Field Sampling Logs and Barometric Pressure Graphs

Ashland - Glens Falls, NY
Daily Calibrations

Date: 02-18-2019 Quarter/Year: February, 2019

Personnel: Nate Suhadolnik, Kelsey Brennan

Parameter	Horiba Calibration Standards
pH	4.0
Conductivity	4.51 ms/cm
Turbidity	0 ntu
Diss. Oxygen	Varies per Temp., mg/L

Calibrations are to be conducted daily. Unsuccessful calibrations will be followed with second and third attempts. If calibrations remain unsuccessful, equipment will be removed from service, and spare equipment used in it's place. Calibration considered successful if within 2% of Calibration standards (NTU must be under 5 for turbidity).

Time	13:08	Staff: Nate Suhadolnik
Model:	Horiba U-52	Successful?
Meter Serial #:	21246	
pH	4.00	Y
Conductivitiy	4.43	Y
Turbiduty	0.0	Y
DO	4.68	Y
Temperature	18.03	N/A

Time	1332	Staff: Nate Suhadolnik
Model:	Horiba U-52	Successful?
Meter Serial #:	21246	
pH	3.99	Y
Conductivitiy	4.48	Y
Turbiduty	0.0	Y
DO	3.32	Y
Temperature	15.12	N/A

Time		Staff:
Model:		Successful?
Meter Serial #:		
pH		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A

Time		Staff:
Model:		Successful?
Meter Serial #:		
pH		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A

Time		Staff:
Model:		Successful?
Meter Serial #:		
pH		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A

Time		Staff:
Model:		Successful?
Meter Serial #:		
pH		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Nate Schadolnik, Kelsey Brennan		Well ID:	EW-B5	
Date: 02-18-2019		Original Install Depth:	N/A	feet
Weather: 20s + Snowing		Screen Length:	N/A	feet
Time In:	Time Out:	Well Diameter:	N/A	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	45.80 @ 12:52	Well Type:	Flushmount	☒	Stick-Up	☐
Depth to Water(From TOC) With Pump in place:	(feet)	N/A	Well Locked:	Yes	☒	No	☐
Total Depth (from TOC):	(feet)	N/A	Measuring Point Marked:	Yes	☒	No	☐
Length of Water Column :	(feet)	N/A	Well Condition:	Good	☒	Poor	☐
			Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	N/A
Pumping Rate of Pump:	(mL/min)	N/A
Total Volume Removed:	(mL or gal)	N/A

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: Bailer Pump Size: N/A Depth of Pump Intake: N/A

Evacuation Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒

Water Quality Meter (type/Serial Number): Horiba U-52

Sampling Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump):

Barometric Pressure (At time of sampling) in mm/Hg:

FIELD PARAMETER READINGS:

Time	13:17	←	
Rate (ml/min)	0.0	←	
Depth to Water (ft. TOC)	44.03	←	
Temperature (°C)	12.78	←	
pH	5.80	←	
Conductivity (mS/cm)	2.62	←	
Dissolved Oxygen (mg/L)	3.72	←	
Turbidity (NTU)	2.1	←	
ORP (mV)	258	←	

Single Parameters

SAMPLE INFORMATION

Sample List:
- Diss. Chromium ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: EW-B5_20190218
Start Time: 1316
End Time: 1317
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: NS

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Grab

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

(Semi-Annual Sampling)

Water Level Measurements
Ashland - Glens Falls, NY

Date 3/18/19 Quarter/Year: 1Q19

Personnel: Cody Horne, Chris Calandrillo, Cody M., Katelyn F.

Well Name	Install Depth (ft bgs)	Well Screen Length	Time	DTW (ft btoc)	Total Depth (ft btoc)	Comments
MAIN PLANT SITE						
AP-2	20.0	10	11:29	12.10	19.80	
AW-A2	32.0	10				Frozen over
AW-A4	37.0	10	9:55	20.84	39.07	
AW-A10	46.0	10	10:30	25.18	45.64	
AW-A11	58.0	10	11:16	25.25	56.41	
AW-A14	34.5	10	11:54	15.98	32.95	
AW-A15	31.0	10	10:53	14.71	34.07	
AW-B2	55.0	24	9:40	25.80	59.65	
AW-B3	58.5	10	9:40	26.91	60.64	
~~AW-B4~~ AW-C11	47.5	10	11:48	41.60	155.35	
AW-B11	67.0	10	10:27	30.16	58.69	
AW-B17	47.7	10	11:18	23.76	47.76	
AW-B18	50.5	10	10:55	34.67	54.71	
AW-B19	46.9	10	11:05	19.93	52.59	
AW-B20	31.0	10	~~[illegible]~~ 14:25	16.59	37.06	
AW-C1	144.0	10	9:13	35.64		
AW-C2	169.0	10	9:05	93.57	171.44	
AW-C7	155.0	10	9:44	84.26		
AW-C8	162.0	15	10:05	57.99	170.20	
AW-C9	127.0	10				Not Found
AW-C10	137.0	10	10:16	50.78		
~~AW-C11~~ AW-B4	158.0	10	11:42	27.60	46.06	
BP-6	23.0	10	11:15	20.72	25.01	
BP-9	16.0	10	11:35	11.72	18.48	
IP-4	8.5	4	10:57	12.80	9.40	
MW-9	49.4	10*	9:35	~~16.01~~	49.43	DTW: 17.92
MW-10B	35.0	10	10:20	27.02	34.77	
? MW-19	41.5	31.5	~~10:41~~	~~45.06~~		Not Found
MW-20C	160.0	10	9:59	73.58		
MW-20D	55.1	10	10:01	45.05	48.72	
MW-25D	60.7	10	8:55	33.73	61.51	
MW-25S	39.4	10	9:00	26.71	41.90	
MW-26	~8	5	8:50	8.82	13.05	
MW-27S	42.5	10	10:20	34.21	15.80	
MW-28	~12	5	10:22	1.46	11.80	
MW-30D	51.5	10	11:04	5.78	44.54	
MW-31	15.0	5	11:08	7.02	17.16	
MW-36C	160.0	10	14:29	75.61		
MW-36D	57.2	10	9:43	42.11	59.11	
MW-36S	33.0	9	9:38	23.40	35.95	
MW-40B	53.0	10	9:18	48.97	54.70	
MW-OB2	17.0	10	8:41	14.18	18.27	
MW-OB5	12.0	7	9:34	8.67	14.12	
MW-OB7	9.0	5	~~[illegible]~~	~~8.~~ 15.90	8.88	Time 1000
MW-OB13	8.0	5	14:26	9.98	15.62	

Water Level Measurements
Ashland - Glens Falls, NY

Date 3/18/19 Quarter/Year: 1Q 19
Personnel: Cody H., Chris C., ~~Garrett C.~~ Cody M., Cody H., Katelyn F.

Well Name	Install Depth (ft bgs)	Well Screen Length	Time	DTW (ft btoc)	Total Depth (ft btoc)	Comments
* MW-OB14	18.0	10				Flooded
MW-OB15	8.0	5	14:39	0.61	7.22	
MW-OB24	10.5	5	9:53	16.97	18.00	
MW-OB25	10.0	5	11:50	7.75	11.56	
MW-OB26	14.0	5	12:17	11.35	17.68	
? MW-OB27	11.0	5				Not Found
MW-OB30	18.25	12	11:50	8.78	18.59	
MW-OB31	13.67	8	11:46	6.53	13.94	
MW-OB32	13.05	5	11:43	8.20	13.32	
MW-OB33	15.21	10	11:31	6.73	15.47	
MW-OB34	16.04	10	11:27	12.10	16.17	
P-A1	34.5	10	9:00	17.09	19.03	
WP-CC-12	21.2	5	9:51	Dry	19.98	
SG-12	NA	N/A	11:22	3.0	N/A	
REMEDIATION SYSTEM						
Sump A	~31.5	N/A	10:48	29.23	N/A	210.66, 210.69 (comp) ±0.03
Sump B	~29.2	N/A	10:41	24.00	N/A	212.39, 212.49 (comp) ±0.10
EW-B5	51.8	15.8	12:11	44.11	54.03	
FRENCH DRAIN						
MH-1	~10.6	N/A	14:55	Dry	10.60	
MH-2	~20.5	N/A	14:50	20.33	20.45	
MH-3	~10.0	N/A	14:45	Dry	10.00	
MH-4	~23.3	N/A	11:57	18.77	24.03	
MH-5	~18.5	N/A	14:40	Dry	18.45	
MH-6	~9.6	N/A	14:35	Dry	9.59	

Note: MW-9 - No log available, assumed to have 10' screen.
SG-11 Canal gauge no longer in place. Feeder Canal depth to water and total depth to be measured from canal wall by trail near former location of SG-2.

4.37

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M.	Well ID:	AW-A11		
Date: 3/19/19	Original Install Depth:	58.0	feet	
Weather: Sunny 21°F	Screen Length:	10	feet	
Time In: 1400 Time Out: 1620	Well Diameter:	2	inches	

WELL INFORMATION

		3/18	3/19
Depth to Water (from TOC):	(feet)	~~25.25~~ ~~30.46~~	25.10
Depth to Water(From TOC) With Pump in place:	(feet)	24.92	
Total Depth (from TOC):	(feet)	56.41	
Length of Water Column :	(feet)	31.49	

Well Type:	Flushmount	[X]	Stick-Up	[ ]
Well Locked:	Yes	[X]	No	[ ]
Measuring Point Marked:	Yes	[X]	No	[ ]
Well Condition:	Good	[X]	Poor	[ ]
Well Condition Comments:	Good			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	5.13 gal
Pumping Rate of Pump:	(mL/min)	150
Total Volume Removed:	(mL or gal)	1.50

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 14313 Pump Size: ~~2"~~ 1.75" Depth of Pump Intake: 51.41

Evacuation Method: Bailer [ ] Peristaltic [ ] Bladder [X] Other [ ]

Tubing Used: Teflon [ ] Polyethylene [X] N/A [ ]

Water Quality Meter (type/Serial Number) U-5000 HORIBA 1BRIK5GJ

Sampling Method: Bailer [ ] Peristaltic [ ] Bladder [X] Other [ ]

Did well go dry? Yes [ ] No [X]

Final Depth to Water (prior to turning off pump): 25.89

Barometric Pressure (At time of sampling) in mm/Hg: 765.009

FIELD PARAMETER READINGS:

Time	1433	1435	1437	1439	1441	1443	1448	1453	1458	1503	1508	1513	1518	1523
Rate (ml/min)	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TOC)	25.21	25.25	25.29	25.31	25.33	25.35	25.42	25.45	25.49	25.56	25.57	25.62	25.65	25.68
Temperature (°C)	13.15	12.91	12.66	12.64	12.47	12.30	12.10	11.85	11.65	11.65	11.57	11.56	11.57	11.51
pH	8.70	8.58	8.51	8.49	8.44	8.45	8.41	8.35	8.35	8.37	8.37	8.42	8.45	8.49
Conductivity (mS/cm)	0.284	0.292	0.301	0.311	0.322	0.326	0.329	0.320	0.300	0.299	0.304	0.316	0.335	0.343
Dissolved Oxygen (mg/L)	1.16	0.60	0.40	0.30	0.17	0.13	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turbidity (NTU)	20.9	19.1	15.8	14.7	16.0	11.9	11.1	11.6	11.2	10.1	8.5	6.9	5.7	4.8
ORP (mV)	74	76	73	68	61	57	47	39	32	25	22	15	8	5

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & ~~Vanadium~~ [X]
- Diss. Hexavalent Chromium [X]
- Total Cyanide [X]
- Free Cyanide [X]
- Total Dissolved Solids [ ]
- Hardness [ ]
- VOCs (Dichlorobenzenes) [ ]

Sample ID: AW-A11_20190319

Start Time: 1600

End Time: 1603

MS/MSD: Yes [ ] No [X]

Duplicate: Yes [ ] No [X]

Total Bottles: 3

Sampled By: Cody Murphy

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

Page 1 of 2

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody Murphy	Well ID:	AW-A11		
Date: 3/19/19	Original Install Depth:	58.0	feet	
Weather: Sunny 21°F	Screen Length:	10	feet	
Time In: 1400 / Time Out: 1620	Well Diameter:	2	inches	

		3/18	3/19
Depth to Water (from TOC):	(feet)	25.25	25.10
Depth to Water(From TOC) With Pump in place:	(feet)		24.92
Total Depth (from TOC):	(feet)	56.41	
Length of Water Column :	(feet)	31.49	

WELL INFORMATION

Well Type:	Flushmount	☒	Stick-Up	☐
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐
Well Condition Comments:	Good			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	5.13 gal
Pumping Rate of Pump:	(mL/min)	150
Total Volume Removed:	(mL or gal)	1.50

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: ~~MP10~~ 14313 ~~Micro purge~~ 3565 Pump Size: ~~2"~~ 1.75" Depth of Pump Intake: 51.41

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-5000 HORIBA 1BRIK5GJ

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 25.89

Barometric Pressure (At time of sampling) in mm/Hg: 765.009

FIELD PARAMETER READINGS:

Time	1528	1533	1538	1543	1548	1553	1558							
Rate (ml/min)	150	150	150	150	150	150	150							
Depth to Water (ft. TOC)	25.69	25.70	25.73	25.76	25.78	25.81	25.84							
Temperature (°C)	11.45	11.48	11.57	11.80	11.61	11.51	11.51							
pH	8.52	8.56	8.60	8.61	8.67	8.68	8.70							
Conductivity (mS/cm)	0.357	0.368	0.383	0.397	0.408	0.418	0.427							
Dissolved Oxygen (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Turbidity (NTU)	4.1	2.7	1.9	1.1	0.3	0.0	0.0							
ORP (mV)	1	-2	-7	-11	-13	-15	-18							

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☒
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: AW-A11_20190319
Start Time: 1600
End Time: 1603
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: Cody Murphy

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Chris C.	Well ID:	AW-A14		
Date:	3/19/19	Original Install Depth:	34.5	feet	
Weather:	40° Sunny	Screen Length:	10	feet	
Time In: 1410	Time Out: 1550	Well Diameter:	2	inches	

		3/18	3/19
Depth to Water (from TOC):	(feet)	15.98	16.75
Depth to Water(From TOC) With Pump in place:	(feet)		16.18
Total Depth (from TOC):	(feet)	32.95	
Length of Water Column :	(feet)	16.70	

WELL INFORMATION

Well Type:	Flushmount	☑	Stick-Up	☐
Well Locked:	Yes	☐	No	☑
Measuring Point Marked:	Yes	☐	No	☑
Well Condition:	Good	☐	Poor	☑

Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	2.64
Pumping Rate of Pump:	(mL/min)	175
Total Volume Removed:	(mL or gal)	1.50

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: N 1431 Pump Size: 1.75" Depth of Pump Intake: 27.95

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☑ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-52 565Y9HWX U-52

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☑

Final Depth to Water (prior to turning off pump): 18.05

Barometric Pressure (At time of sampling) in mm/Hg: 764.905

FIELD PARAMETER READINGS:

Time	1430	1432	1434	1436	1438	1440	1445	1450	1455	1500	1505	1510	1515	1520
Rate (ml/min)	200	100	175	175	175	175	175	175	175	175	175	175	175	175
Depth to Water (ft. TOC)	16.83	17.80	17.18	17.75	17.78	17.79	17.79	17.82	17.85	17.86	17.85	17.95	17.95	17.99
Temperature (°C)	10.97	10.93	10.91	10.86	10.70	10.63	10.01	9.55	9.15	~~[illegible]~~ 9.01	10.80	8.60	8.64	9.07
pH	8.06	7.60	7.41	7.27	7.17	7.13	7.02	6.97	6.93	6.95	6.42	7.01	7.05	7.10
Conductivity (mS/cm)	0.082	0.057	0.056	0.055	0.054	0.055	0.055	0.056	0.060	0.067	0.073	0.089	0.099	0.115
Dissolved Oxygen (mg/L)	5.77	3.69	3.33	3.00	2.69	2.58	1.77	1.16	0.64	0.26	0.37	0.00	0.00	0.00
Turbidity (NTU)	89.0	109	97.4	102	101	95.0	90.6	85.3	82.9	79.5	62.3	62.5	61.2	58.5
ORP (mV)	-22	21	34	46	53	56	66	66	60	55	80	49	41	35

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & ~~Vanadium~~ ☑
- Diss. Hexavalent Chromium ☑
- Total Cyanide ☑
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: NS

Start Time: NS

End Time: NS

MS/MSD: Yes ☐ No ☑

Duplicate: Yes ☐ No ☑

Total Bottles: NS

Sampled By: NS

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

1500-1505: Horiba unit and flow cell cleaned out

Well did not stabalize

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Chris C	Well ID:	~~AW-B4~~ AW-A14
Date:	3/19/19	Original Install Depth:	~~47.5~~ 34.5 feet
Weather:	40° @ Sny	Screen Length:	10 feet
Time In: 1410	Time Out: 1550	Well Diameter:	2 inches

		3/18	3/19
Depth to Water (from TOC):	(feet)	15.98	16.75
Depth to Water(From TOC) With Pump in place:	(feet)		16.18
Total Depth (from TOC):	(feet)	32.95	
Length of Water Column :	(feet)	16.20	

WELL INFORMATION

Well Type:	Flushmount	☑	Stick-Up	☐
Well Locked:	Yes	☐	No	☑
Measuring Point Marked:	Yes	☐	No	☑
Well Condition:	Good	☐	Poor	☑
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	2.64
Pumping Rate of Pump:	(mL/min)	175
Total Volume Removed:	(mL or gal)	1.50

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 1431 Pump Size: 1.75" Depth of Pump Intake: 27.95

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☑ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-50 SLSY4HWX

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☑ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 18.05

Barometric Pressure (At time of sampling) in mm/Hg: 764.905

FIELD PARAMETER READINGS:

Time	1525	1530	1535	1540	1545	1550								
Rate (ml/min)	175	175	175	175	175									
Depth to Water (ft. TOC)	18.00	18.04	18.05	18.05	18.05									
Temperature (°C)	9.00	8.97	8.94	9.14	9.41									
pH	7.14	7.19	7.22	7.26	7.30									
Conductivity (mS/cm)	0.132	0.152	0.167	0.183	0.191									
Dissolved Oxygen (mg/L)	0.00	0.00	0.00	0.00	0.00									
Turbidity (NTU)	56.2	53.4	54.2	50.2	48.3									
ORP (mV)	27	9	-5	-16	-23									

SAMPLE INFORMATION

Sample List: @

- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☑
- Total Cyanide ☑
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: NS
Start Time: NS
End Time: NS
MS/MSD: Yes ☐ No ☑
Duplicate: Yes ☐ No ☑
Total Bottles: NS
Sampled By: NS

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.): well did not stabalize

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Cody M.
Date:	3/20/19
Weather:	Overcast 30's
Time In:	830
Time Out:	1445

Well ID:	AW-A14	
Original Install Depth:	34.5	feet
Screen Length:	10	feet
Well Diameter:	2	inches

		3/18	3/20
Depth to Water (from TOC):	(feet)	15.98	16.23 Δ
Depth to Water(From TOC) With Pump in place:	(feet)		16.73 Δ
Total Depth (from TOC):	(feet)	32.95	
Length of Water Column :	(feet)	16.72	

WELL INFORMATION

Well Type:	Flushmount	☒	Stick-Up	☐
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐

Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	2.73
Pumping Rate of Pump:	(mL/min)	150
Total Volume Removed:	(mL or gal)	8

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: ~~Bladder~~ pump 14311 Pump Size: 1.75 Depth of Pump Intake: 27.95

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): ~~U-5000~~ U-52 HORIBA BMDSR19H

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 17.87

Barometric Pressure (At time of sampling) in mm/Hg: 762.985

FIELD PARAMETER READINGS:

Time	9 20	9 22	9 24	9 26	9 28	9 30	9 35	9 40	9 45 *	10 02	10 07	10 12	10 17	10 22
Rate (ml/min)	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TOC)	~~18.50~~ 18.25 CM	18.10	18.15	18.18	18.24	18.25	18.30	18.31	18.29	18.27	18.28	18.27	18.24	18.22
Temperature (°C)	10.01	9.86	9.80	9.76	9.72	9.73	9.83	9.77	9.76	9.55	9.73	9.84	9.89	9.95
pH	7.08	7.36	7.43	7.53	7.61	7.65	7.74	7.75	7.80	7.90	7.83	7.82	7.84	7.86
Conductivity (mS/cm)	0.274	0.287	0.291	0.302	0.308	0.311	0.317	0.321	0.327	0.332	0.333	0.333	0.334	0.335
Dissolved Oxygen (mg/L)	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00
Turbidity (NTU)	142	136	135	142	124	115	121	114	116	38.2	37.8	37.1	37.4	37.7
ORP (mV)	21	2	-5	-19	-30	-35	-47	-57	-60	-54	-62	-66	-70	-73

SAMPLE INFORMATION

Sample List:

- Diss. Chromium ~~& Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID:	AW-A14 20190320
Start Time:	1425
End Time:	1430
MS/MSD:	Yes ☐ No ☒
Duplicate:	Yes ☐ No ☒
Total Bottles:	3
Sampled By:	CM

Duplicate ID:	
Sample Time:	
Total Bottles:	
Sampled By:	
MS/MSD ID:	
Sample Time:	
Total Bottles:	
Sampled By:	

Observations (water color, clarity, etc.):

* Clean HORIBA

Δ Pump was left in place overnight

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative~~ (No change) NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody Murphy		Well ID:	AW-A14
Date: 3/20/19		Original Install Depth:	34.5 feet
Weather: Overcast 30's		Screen Length:	10 feet
Time In: 8 30	Time Out: 1445	Well Diameter:	2 inches

		3/18	3/20	WELL INFORMATION				
Depth to Water (from TOC):	(feet)	15.98	16.23 Δ	Well Type:	Flushmount	☒	Stick-Up	☐
Depth to Water(From TOC) With Pump in place:	(feet)		16.23 Δ	Well Locked:	Yes	☒	No	☐
Total Depth (from TOC):	(feet)	32.95		Measuring Point Marked:	Yes	☒	No	☐
Length of Water Column :	(feet)	16.72		Well Condition:	Good	☒	Poor	☐
				Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	2.73	
Pumping Rate of Pump:	(mL/min)	150	
Total Volume Removed:	(mL or gal)	8	
Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: Bladder pump 14311 Pump Size: 1.75" Depth of Pump Intake: 27.95'

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 U-5000 HORIBA BMD5R19H

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 17.87

Barometric Pressure (At time of sampling) in mm/Hg: 762.885

FIELD PARAMETER READINGS:

Time	10 27	10 32	10 37	10 42	10 49	10 54	10 59	11 04	11 09	11 14	11 19	11 24	11 32	11 48
Rate (ml/min)	150	150	150	**	150	150	150	150	150	150	150	150	☐	150
Depth to Water (ft. TOC)	18.19	18.14	18.11		17.99	17.95	17.94	17.93	17.93	17.90	17.87	17.87		17.81
Temperature (°C)	10.01	10.15	10.25		9.70	10.21	10.38	10.71	10.91	11.19	11.37	11.46		10.98
pH	7.87	7.86	7.87		7.91	7.90	7.90	7.91	7.93	7.94	7.93	7.95		7.89
Conductivity (mS/cm)	0.337	0.338	0.337		0.327	0.328	0.328	0.331	0.332	0.332	0.332	0.332		0.300
Dissolved Oxygen (mg/L)	0.00	0.00	0.00		0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2.31
Turbidity (NTU)	37.9	37.3	35.1		27.4	26.3	26.4	25.7	25.9	26.8	23.2	22.6		45.8
ORP (mV)	-75	-77	-78	**	-61	-73	-76	-80	-83	-86	-87	-88		-43

SAMPLE INFORMATION

Sample List:			
Diss. Chromium & ~~Vanadium~~ ☒	Sample ID: AW-A14-032019	Duplicate ID:	
Diss. Hexavalent Chromium ☒	Start Time: 1425	Sample Time:	
Total Cyanide ☒	End Time: 1430	Total Bottles:	
Free Cyanide ☐	MS/MSD: Yes ☐ No ☒	Sampled By:	
Total Dissolved Solids ☐	Duplicate: Yes ☐ No ☒	MS/MSD ID:	
Hardness ☐	Total Bottles: 3	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By: CC	Total Bottles:	
		Sampled By:	

Observations (water color, clarity, etc.):

** 2nd Cleaning of HORIBA

*** 3rd Cleaning of HORIBA

☐ Instructed to pull pump and change bladder

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody Murphy	Well ID:	AW-A14	
Date: 3/20/19	Original Install Depth:	34.5	feet
Weather: Overcast 30's	Screen Length:	10	feet
Time In: 8:30 Time Out: 1445	Well Diameter:	2	inches

WELL INFORMATION

		3/18	3/20
Depth to Water (from TOC):	(feet)	15.98	16.23 A
Depth to Water(From TOC) With Pump in place:	(feet)		16.23 A
Total Depth (from TOC):	(feet)	32.95	
Length of Water Column :	(feet)	16.72	

Well Type:	Flushmount	☒	Stick-Up	☐
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	2.73
Pumping Rate of Pump:	(mL/min)	150
Total Volume Removed:	(mL or gal)	8.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: Bladder Pump 14311 Pump Size: 1.75" Depth of Pump Intake: 27.95'

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): ~~U-5000~~ U-52 HORIBA BMD5R19H

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 17.87

Barometric Pressure (At time of sampling) in mm/Hg: 762.985

FIELD PARAMETER READINGS:

Time	11 53	11 58	12 03	12 08	12 13	12 18	12 23	12 28	12 33	12 38	12 43	12 48	12 53	1258
Rate (ml/min)	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TOC)	17.86	17.88	17.87	17.87	17.86	17.86	17.87	17.86	17.86	17.86	17.85	17.82	17.90	17.80
Temperature (°C)	11.23	11.42	11.57	11.69	11.68	12.01	12.18	12.32	12.56	12.51	12.61	12.65	12.85	13.11
pH	7.88	7.87	7.90	7.96	8.03	8.03	8.06	8.07	8.09	8.09	8.10	8.11	7.74	7.81
Conductivity (mS/cm)	0.290	0.295	0.305	0.322	0.334	0.342	0.349	0.357	0.359	0.361	0.365	3.367	0.370	0.370
Dissolved Oxygen (mg/L)	1.90	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turbidity (NTU)	41.8	33.6	27.6	25.1	20.5	20.9	19.6	17.6	17.0	16.3	16.4	15.9	15.4	15.3
ORP (mV)	-52	-63	-72	-80	-86	-91	-94	-98	-101	-102	-104	-106	-88	-44

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID:	AW-A14_20190320
Start Time:	1425
End Time:	1430
MS/MSD:	Yes ☐ No ☒
Duplicate:	Yes ☐ No ☒
Total Bottles:	3
Sampled By:	CM

Duplicate ID:	
Sample Time:	
Total Bottles:	
Sampled By:	
MS/MSD ID:	
Sample Time:	
Total Bottles:	
Sampled By:	

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody Murphy	Well ID:	AW-A14	
Date: 3/20/19	Original Install Depth:	34.5	feet
Weather: Overcast 30's	Screen Length:	10	feet
Time In: 8:30 Time Out: 1445	Well Diameter:	2	inches

WELL INFORMATION

		3/18	3/20					
Depth to Water (from TOC):	(feet)	15.98	16.23 Δ	Well Type:	Flushmount	☒	Stick-Up	☐
Depth to Water(From TOC) With Pump in place:	(feet)		16.23 Δ	Well Locked:	Yes	☒	No	☐
Total Depth (from TOC):	(feet)		32.95	Measuring Point Marked:	Yes	☒	No	☐
Length of Water Column :	(feet)		16.72	Well Condition:	Good	☒	Poor	☐
				Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	2.73
Pumping Rate of Pump:	(mL/min)	150
Total Volume Removed:	(mL or gal)	8.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: Bladder pump 14311 Pump Size: 1.75" Depth of Pump Intake: 27.95'

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-5000 HORIBA BMD5R19H

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 17.87

Barometric Pressure (At time of sampling) in mm/Hg: 762.988

FIELD PARAMETER READINGS:

Time	1303	1308	1313	1318	1323	1328	1333	1338	1343	1348	1353	1400	1405	1410
Rate (ml/min)	150	150	150	150	150	150	150	150	150	150	150 Δ	150	150	150
Depth to Water (ft. TOC)	17.79	17.90	17.90	17.89	17.88	17.86	17.85	17.83	17.84	17.86	17.86	17.87	17.85	17.87
Temperature (°C)	13.00	12.23	12.57	13.10	13.12	13.14	13.15	13.15	13.12	13.06	13.02	10.99	11.20	11.12
pH	8.16	8.16	8.16	7.43	7.43	7.47	7.54	7.82	8.02	8.04	8.04	8.02	8.21	8.27
Conductivity (mS/cm)	0.374	0.382	0.382	0.382	0.380	0.383	0.385	0.387	0.387	0.384	0.384	0.492	0.495	0.502
Dissolved Oxygen (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.21	7.39	6.72
Turbidity (NTU)	14.6	15.2	15.2	15.4	15.4	14.7	14.4	14.9	14.1	15.9	16.7	10.8	10.4	8.9
ORP (mV)	-111	-113	-113	-77	-78	-83	-87	-103	-112	-115	-115	-32	-61	-76

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: AW-A14 20190321
Start Time: 1425
End Time: 1430
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: CM

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Δ Switch out to U-5000 HORIBA GLM5C6LB

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody Murphy	Well ID:	AW-A14	
Date: 3/20/19	Original Install Depth:	34.5	feet
Weather: Overcast 30°	Screen Length:	10	feet
Time In: 8:30 Time Out: 1445	Well Diameter:	2	inches

		3/18	3/20	WELL INFORMATION				
Depth to Water (from TOC):	(feet)	15.98	16.23 A	Well Type:	Flushmount	☒	Stick-Up	☐
Depth to Water(From TOC) With Pump in place:	(feet)		16.23 A	Well Locked:	Yes	☒	No	☐
Total Depth (from TOC):	(feet)	32.95		Measuring Point Marked:	Yes	☒	No	☐
Length of Water Column :	(feet)	16.72		Well Condition:	Good	☒	Poor	☐
				Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	2.73	
Pumping Rate of Pump:	(mL/min)	150	
Total Volume Removed:	(mL or gal)	8.00	
Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: Bladder Pump 14311 Pump Size: 1.75" Depth of Pump Intake: 27.95'

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): ~~U-5000~~ U-52 HORIBA GLM5C6LB

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 17.47

Barometric Pressure (At time of sampling) in mm/Hg: 762.985

FIELD PARAMETER READINGS:

Time	14 15	14 20	~~14 25~~											
Rate (ml/min)	150	150												
Depth to Water (ft. TOC)	17.86	17.47												
Temperature (°C)	11.10	11.18												
pH	8.31	8.32												
Conductivity (mS/cm)	0.504	0.502												
Dissolved Oxygen (mg/L)	6.17	5.71												
Turbidity (NTU)	8.4	8.2												
ORP (mV)	-83	-87												

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: AW-A14_20190320
Start Time: 14:25
End Time: 1430
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: CM

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.): Approved to sample @ 14:25

Free Cyanide Sulfide Test Strip: Positive (Black) / ~~Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	KatelynF
Date:	3/19/19
Weather:	Sunny, 29°F
Time In:	1130
Time Out:	1540

Well ID:	AW-B4	
Original Install Depth:	47.5	feet
Screen Length:	10	feet
Well Diameter:	2	inches

		3/18/19	3/19/19
Depth to Water (from TOC):	(feet)	27.60	27.52
Depth to Water(From TOC) With Pump in place:	(feet)	27.33	
Total Depth (from TOC):	(feet)	46.06	
Length of Water Column :	(feet)	18.54	

WELL INFORMATION

Well Type:	Flushmount	☒	Stick-Up	☐
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐

Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	3.02
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	1.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 22659 Pump Size: 3/4" Depth of Pump Intake: ~~36.83~~ 41.06 KF

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 | PIPABORQ Horiba

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 28.04

Barometric Pressure (At time of sampling) in mm/Hg: 766.146

FIELD PARAMETER READINGS:

Time	1320	1322	1324	1326	1328	1330	1335	1340	1345	1350	1355	1400	1405	1410
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	28.04	28.06	28.06	28.07	28.07	28.09	28.10	28.11	28.14	28.14	28.14	28.15	28.15	28.15
Temperature (°C)	9.80	9.31	8.80	8.87	8.87	8.72	8.55	8.51	8.45	8.33	8.15	8.07	8.05	8.13
pH	6.64	6.71	6.73	6.74	6.76	6.78	6.81	6.86	6.92	6.95	6.96	6.95	6.94	7.00
Conductivity (mS/cm)	0.584	0.586	0.592	0.591	0.590	0.593	0.597	0.599	0.599	0.598	0.598	0.601	0.602	0.602
Dissolved Oxygen (mg/L)	5.03	4.88	4.69	4.49	4.19	4.08	4.20	3.20	2.83	2.46	2.03	1.60	1.69	1.04
Turbidity (NTU)	9.0	9.1	9.5	9.0	8.5	8.9	9.0	8.3	9.0	7.7	8.1	8.2	8.5	7.9
ORP (mV)	320	325	328	330	332	332	331	326	315	307	299	293	285	273

SAMPLE INFORMATION

Sample List:

- Diss. Chromium ~~& Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: AW-B4-20190319

Start Time: 1443

End Time: 1526

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 3

Sampled By: KF

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

~~Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)~~ N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

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GROUNDWATER SAMPLING LOG
Ashland Glens Falls, NY
Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: ~~Chris C.~~ Katelyn F.	Well ID:	AW-B4	
Date: 3/19/19	Original Install Depth:	47.5	feet
Weather: Sunny, 29°F	Screen Length:	10	feet
Time In: 1150 Time Out: 1540	Well Diameter:	2	inches

WELL INFORMATION

		3/18/19	3/19/19
Depth to Water (from TOC):	(feet)	27.60	27.52
Depth to Water(From TOC) With Pump in place:	(feet)	27.33	
Total Depth (from TOC):	(feet)	46.06	
Length of Water Column :	(feet)	18.54	

Well Type:	Flushmount ☒	Stick-Up ☐	
Well Locked:	Yes ☒	No ☐	
Measuring Point Marked:	Yes ☒	No ☐	
Well Condition:	Good ☒	Poor ☐	
Well Condition Comments:			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	3.02
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	2.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 22659 Pump Size: 3/4" Depth of Pump Intake: ~~36.83~~ 41.06

Evacuation Method:	Bailer ☐	Peristaltic ☐	Bladder ☒	Other ☐
Tubing Used:	Teflon ☐	Polyethylene ☒	N/A ☐	

Water Quality Meter (type/Serial Number): U-52/P1PABJR9

Sampling Method:	Bailer ☐	Peristaltic ☐	Bladder ☒	Other ☐
Did well go dry?	Yes ☐	No ☒		

Final Depth to Water (prior to turning off pump): 28.04

Barometric Pressure (At time of sampling) in mm/Hg: 766.146

FIELD PARAMETER READINGS:

Time	1415	1420	1425	1430	1435	1440	1445						
Rate (ml/min)	100	100	100	100	100								
Depth to Water (ft. TOC)	28.11	28.12	28.06	28.06	28.05								
Temperature (°C)	7.37	7.73	7.47	7.34	7.15								
pH	6.95	6.94	6.92	6.90	6.87								
Conductivity (mS/cm)	0.602	0.601	0.604	0.606	0.608								
Dissolved Oxygen (mg/L)	0.80	0.59	0.36	0.25	0.39								
Turbidity (NTU)	7.4	7.5	8.1	8.0	8.2								
ORP (mV)	265	255	244	236	228								

SAMPLE INFORMATION

Sample List:
- Diss. Chromium ~~& Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: AW-B4-20190319
Start Time: 1443
End Time: 1524
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: KF

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M	Well ID:	AW-B17	
Date: 3/19/19	Original Install Depth:	47.7	feet
Weather: ~~20s~~ Sunny 39°F cm	Screen Length:	10	feet
Time In: 1140 Time Out: 1300	Well Diameter:	2	inches

		3/18	3/19
Depth to Water (from TOC):	(feet)	23.76	23.67
Depth to Water(From TOC) With Pump in place:	(feet)		23.75
Total Depth (from TOC):	(feet)	47.76	
Length of Water Column :	(feet)	24.01	

WELL INFORMATION

Well Type:	Flushmount	☒	Stick-Up	☐
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐

Well Condition Comments: Good

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	3.91 gal
Pumping Rate of Pump:	(mL/min)	150
Total Volume Removed:	(mL or gal)	8250 ml

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: Bladder Pump 1430 Pump Size: ~~2~~ 1.75" Depth of Pump Intake: 42.76

Evacuation Method:	Bailer	☐	Peristaltic	☐	Bladder	☒	Other	☐
Tubing Used:	Teflon	☐	Polyethylene	☒	N/A	☐		

Water Quality Meter (type/Serial Number): U-52 Horiba 1BR1KSGJ

Sampling Method:	Bailer	☐	Peristaltic	☐	Bladder	☒	Other	☐
Did well go dry?	Yes	☐	No	☒				

Final Depth to Water (prior to turning off pump): 37.07

Barometric Pressure (At time of sampling) in mm/Hg: 766.46

FIELD PARAMETER READINGS:

Time	11 52	11 54	11 56	11 58	1200	1202	12 07	12 12	1217	12 22	12 27	12 32	12 37	12 42
Rate (ml/min)	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TOC)	24.37	24.70	25.25	25.61	26.03	26.34	27.26	28.25	29.01	29.90	30.88	31.45	32.42	33.22
Temperature (°C)	11.06	11.22	11.48	11.44	11.53	11.63	11.80	11.88	11.98	12.13	11.88	11.19	11.50	11.17
pH	7.47	7.46	7.50	7.55	7.60	7.66	7.77	7.84	7.86	7.86	7.86	7.85	7.85	7.83
Conductivity (mS/cm)	0.708	0.709	0.707	0.704	0.697	0.693	0.682	0.676	0.673	0.671	0.667	0.668	0.668	0.667
Dissolved Oxygen (mg/L)	0.67	0.34	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turbidity (NTU)	4.9	4.7	6.1	8.7	12.9	13.6	13.5	15.3	15.4	13.3	10.7	7.6	3.4	1.2
ORP (mV)	-79	-87	-98	-102	-109	-111	-115	-114	-113	-114	-115	-115	-115	-113

Observations (water color, clarity, etc.):

SAMPLE INFORMATION

Sample List:

- Diss. Chromium ~~& Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: AW-B17_20190319

Start Time: 1253

End Time: 1300

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 3

Sampled By: CM

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M.	Well ID:	AW-B17	
Date: 3/19/19	Original Install Depth:	47.7	feet
Weather: ~~20°F~~ Sunny 39°F CM	Screen Length:	10	feet
Time In: 1140 Time Out: 1300	Well Diameter:	2	inches

		3/18	3/19
Depth to Water (from TOC):	(feet)	23.76	23.67
Depth to Water(From TOC) With Pump in place:	(feet)		23.75
Total Depth (from TOC):	(feet)	47.76	
Length of Water Column :	(feet)	24.01	

WELL INFORMATION

- Well Type: Flushmount [X] Stick-Up [ ]
- Well Locked: Yes [X] No [ ]
- Measuring Point Marked: Yes [X] No [ ]
- Well Condition: Good [X] Poor [ ]
- Well Condition Comments: Good

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	3.91 gal
Pumping Rate of Pump:	(mL/min)	150
Total Volume Removed:	(mL or gal)	8250 ml

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

- Pump ID: Bladder Pump 14310 Pump Size: ~~2"~~ 1.75" Depth of Pump Intake: 42.76
- Evacuation Method: Bailer [ ] Peristaltic [ ] Bladder [X] Other [ ]
- Tubing Used: Teflon [ ] Polyethylene [ ] N/A [ ]
- Water Quality Meter (type/Serial Number): U-52 Horiba 1BRIKSGJ
- Sampling Method: Bailer [ ] Peristaltic [ ] Bladder [X] Other [ ]
- Did well go dry? Yes [ ] No [X]
- Final Depth to Water (prior to turning off pump): 37.07
- Barometric Pressure (At time of sampling) in mm/Hg: 766.46

FIELD PARAMETER READINGS:

Time	12 47												
Rate (ml/min)	150												
Depth to Water (ft. TOC)	34.56												
Temperature (°C)	11.08												
pH	7.84												
Conductivity (mS/cm)	0.665												
Dissolved Oxygen (mg/L)	0.00												
Turbidity (NTU)	0.0												
ORP (mV)	-110												

SAMPLE INFORMATION

Sample List:
- Diss. Chromium ~~& Vanadium~~ [X]
- Diss. Hexavalent Chromium [X]
- Total Cyanide [X]
- Free Cyanide [ ]
- Total Dissolved Solids [ ]
- Hardness [ ]
- VOCs (Dichlorobenzenes) [ ]

Sample ID: AW-B17_20190319
Start Time: 1253
End Time: 1300
MS/MSD: Yes [ ] No [X]
Duplicate: Yes [ ] No [X]
Total Bottles: 3
Sampled By: CM

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Garrett C.		Well ID:	AW-C11
Date: 3/20/19		Original Install Depth:	158.0 feet
Weather: Sunny 40's		Screen Length:	10 feet
Time In: 1200	Time Out: 1415	Well Diameter:	2 inches

		3/19	3/20
Depth to Water (from TOC):	(feet)	41.60	41.85
Depth to Water(From TOC) With Pump in place:	(feet)	40.43	
Total Depth (from TOC):	(feet)	155.35	
Length of Water Column :	(feet)	114.92	

WELL INFORMATION

Well Type:	Flushmount	☒	Stick-Up	☐
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐

Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	18.73
Pumping Rate of Pump:	(mL/min)	150
Total Volume Removed:	(mL or gal)	3

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION GC

Pump ID: 14310 GC   Pump Size: 1.75   Depth of Pump Intake: 150.35

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-52 BMD5R9IF

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 41.42

Barometric Pressure (At time of sampling) in mm/Hg: 763.57

FIELD PARAMETER READINGS:

Time	1242	1244	1246	1248	1250	1252	1257	1302	1307	1312	1317	1322	1327	1332
Rate (ml/min)	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TOC)	41.42	41.42	41.42	41.42	41.42	41.42	41.42	41.42	41.42	41.42	41.42	41.42	41.42	41.42
Temperature (°C)	12.49	11.85	11.85	11.79	11.74	11.70	11.51	11.44	11.46	11.38	11.36	11.39	11.47	11.54
pH	6.55	6.88	6.96	7.00	7.04	7.06	7.14	7.19	7.24	7.28	7.31	7.33	7.36	7.38
Conductivity (mS/cm)	0.870	0.909	0.918	0.936	0.944	0.954	0.995	1.02	1.05	[illegible]	1.04	1.10	1.10	1.12
Dissolved Oxygen (mg/L)	4.21	3.12	2.59	2.21	1.96	1.79	1.42	1.28	1.03	~~1.00~~ .90	.76	.66	0.59	0.52
Turbidity (NTU)	8.9	8.0	7.3	6.2	4.9	11.3	3.3	2.7	2.4	2.3	2.7	2.7	3.6	3.1
ORP (mV)	30	-66	-75	-84	-89	-91	-94	-93	-88	-83	-78	-73	-61	-51

SAMPLE INFORMATION

Sample List:			
Diss. Chromium ~~& Vanadium~~ ☒	Sample ID: AW-C11-20190321	~~Duplicate ID:~~	
Diss. Hexavalent Chromium ☒	Start Time: 1349	Sample Time:	
Total Cyanide ☒	End Time: 1357	Total Bottles:	
Free Cyanide ☐	MS/MSD: Yes ☒ No ☐	Sampled By:	
Total Dissolved Solids ☐	Duplicate: Yes ☐ No ☒	MS/MSD ID:	AW-C11-20190321
Hardness ☐	Total Bottles: 3	Sample Time:	1349
VOCs (Dichlorobenzenes) ☐	Sampled By: GC	Total Bottles:	3
		Sampled By:	GC

Observations (water color, clarity, etc.):

tank changed

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Garrett G.	Well ID:	AW-C11		
Date: 3/20/19	Original Install Depth:	158.0	feet	
Weather: Sunny 40s	Screen Length:	10	feet	
Time In: 1200 Time Out: 1415	Well Diameter:	2	inches	

WELL INFORMATION

		3/19 | 3/20				
Depth to Water (from TOC):	(feet)	41.60 | 41.85	Well Type:	Flushmount ☒	Stick-Up ☐
Depth to Water(From TOC) With Pump in place:	(feet)	40.43	Well Locked:	Yes ☒	No ☐
Total Depth (from TOC):	(feet)	155.55	Measuring Point Marked:	Yes ☒	No ☐
Length of Water Column :	(feet)	114.92	Well Condition:	Good ☒	Poor ☐
			Well Condition Comments:		

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	18.73
Pumping Rate of Pump:	(mL/min)	150
Total Volume Removed:	(mL or gal)	3

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 14310 Pump Size: 1.75' Depth of Pump Intake: 150.55

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-52 8MDSR19H

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 41.42

Barometric Pressure (At time of sampling) in mm/Hg: 763.157

FIELD PARAMETER READINGS:

Time	1337	1342	1347											
Rate (ml/min)	150	150	150											
Depth to Water (ft. TOC)	41.42	41.42	41.42											
Temperature (°C)	11.67	11.44	11.34											
pH	7.39	7.41	7.43											
Conductivity (mS/cm)	1.13	1.13	1.14											
Dissolved Oxygen (mg/L)	0.48	0.46	0.43											
Turbidity (NTU)	3.2	3.0	2.9											
ORP (mV)	-46	-43	-39											

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: AW-C11_20190321
Start Time: 1349
End Time: 1357
MS/MSD: Yes ☒ No ☐
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: GL

~~Duplicate~~ ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID: AW-C11_20190321
Sample Time: 1349
Total Bottles: 3
Sampled By: GC

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

Page 2 of 2

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Cody M.	Well ID:	EW-B5		
Date:	3/20/19	Original Install Depth:	51.8	feet	
Weather:	Sunny 50's	Screen Length:	15.8	feet	
Time In: 1515	Time Out: 1545	Well Diameter:	8	inches	

		3/18	3/20
Depth to Water (from TOC):	(feet)	44.11	~~54.03~~ CC
Depth to Water(From TOC) With Pump in place:	(feet)	NA	44.62
Total Depth (from TOC):	(feet)	54.03	
Length of Water Column :	(feet)	9.41	

WELL INFORMATION

Well Type:	Flushmount	☐	Stick-Up	☐	NA
Well Locked:	Yes	☒	No	☐	
Measuring Point Marked:	Yes	☒	No	☐	
Well Condition:	Good	☒	Poor	☐	
Well Condition Comments:					

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	NM
Pumping Rate of Pump:	(mL/min)	NA
Total Volume Removed:	(mL or gal)	.25 gallons

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 2" Bailer Pump Size: NA Depth of Pump Intake: NA

Evacuation Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒

Water Quality Meter (type/Serial Number): U-52 Horiba 6LM5C6LB

Sampling Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 43.35

Barometric Pressure (At time of sampling) in mm/Hg: 762.056

FIELD PARAMETER READINGS:

Time	1528												
Rate (ml/min)	NA												
Depth to Water (ft. TOC)	44.62												
Temperature (°C)	14.83												
pH	8.14												
Conductivity (mS/cm)	2.43												
Dissolved Oxygen (mg/L)	11.80												
Turbidity (NTU)	0.3												
ORP (mV)	81												

SAMPLE INFORMATION

Sample List:
- Diss. Chromium ~~& Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: EW-B5_20190320
Start Time: 15:33
End Time: 1540
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☒ No ☐
Total Bottles: 3
Sampled By: CM

Duplicate ID: Dup_20190320
Sample Time: —
Total Bottles: 3
Sampled By: CM

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG
Ashland Glens Falls, NY
Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Chris C.	Well ID:	MW-31		
Date:	3/19/19	Original Install Depth:	15.0	feet	
Weather:	40° Sunny	Screen Length:	5	feet	
Time In: 1200	Time Out: 1255	Well Diameter:	2	inches	

WELL INFORMATION

		3/18	3/19
Depth to Water (from TOC):	(feet)	7.02	6.83
Depth to Water(From TOC) With Pump in place:	(feet)		6.83
Total Depth (from TOC):	(feet)	17.16	
Length of Water Column :	(feet)	10.33	

Well Type:	Flushmount ☐		Stick-Up ☒	
Well Locked:	Yes ☒		No ☐	
Measuring Point Marked:	Yes ☒		No ☐	
Well Condition:	Good ☒		Poor ☐	
Well Condition Comments:	good			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.68
Pumping Rate of Pump:	(mL/min)	200
Total Volume Removed:	(mL or gal)	1.5 gal

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 19315	Pump Size: 1.75"	Depth of Pump Intake: 14.66		
Evacuation Method:	Bailer ☐	Peristaltic ☐	Bladder ☒	Other ☐
Tubing Used:	Teflon ☐	Polyethylene ☒	N/A ☐	
Water Quality Meter (type/Serial Number):	SLS791TWX Horiba U-52			
Sampling Method:	Bailer ☐	Peristaltic ☐	Bladder ☒	Other ☐
Did well go dry?	Yes ☐	No ☒		
Final Depth to Water (prior to turning off pump):	6.85			
Barometric Pressure (At time of sampling) in mm/Hg:	~~30.xx~~ GC 766.46			

FIELD PARAMETER READINGS:

Time	1222	1224	1226	1228	1230	1232	1237	1242					
Rate (ml/min)	200	200	180	200	200	200	200	200					
Depth to Water (ft. TOC)	6.84	6.85	6.87	6.85	6.85	6.85	6.85	6.85					
Temperature (°C)	15.57	9.82	9.56	9.09	8.76	8.66	8.57	8.42					
pH	6.96	6.88	6.84	6.81	6.78	6.77	6.74	6.73					
Conductivity (mS/cm)	0.825	0.934	0.929	0.922	0.918	0.916	0.917	0.919					
Dissolved Oxygen (mg/L)	2.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Turbidity (NTU)	17.7	12.0	5.5	1.5	0.2	0.0	0.0	0.0					
ORP (mV)	-70	-73	-75	-77	-78	-79	-84	-87					

SAMPLE INFORMATION

Sample List:	Sample ID: MW-31_20190319	Duplicate ID:
Diss. Chromium & Vanadium ☒	Start Time: 1246	Sample Time:
Diss. Hexavalent Chromium ☒	End Time: 1255	Total Bottles:
Total Cyanide ☒	MS/MSD: Yes ☐ No ☒	Sampled By:
Free Cyanide ☐	Duplicate: Yes ☐ No ☒	MS/MSD ID:
Total Dissolved Solids ☐	Total Bottles: 3	Sample Time:
Hardness ☐	Sampled By: CC	Total Bottles:
VOCs (Dichlorobenzenes) ☐		Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Chris C	Well ID:	MW-OB14
Date:	3/21/19	Original Install Depth:	18.0 feet
Weather:	40° overcast	Screen Length:	10 feet
Time In: 0844	Time Out: 1401	Well Diameter:	2 inches

		3/18	3/21/19
Depth to Water (from TOC):	(feet)	NA	3.05
Depth to Water(From TOC) With Pump in place:	(feet)		7.14
Total Depth (from TOC):	(feet)		19.41
Length of Water Column :	(feet)		16.36

WELL INFORMATION

- Well Type: Flushmount [x] Stick-Up [ ]
- Well Locked: Yes [ ] No [x]
- Measuring Point Marked: Yes [ ] No [x]
- Well Condition: Good [ ] Poor [x]
- Well Condition Comments: 2 bolts missing.

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	2.67 gal
Pumping Rate of Pump:	(mL/min)	~150
Total Volume Removed:	(mL or gal)	6

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

- Pump ID: ~~1431~~ 14313 Pump Size: 1.75" Depth of Pump Intake: 11.41
- Evacuation Method: Bailer [ ] Peristaltic [ ] Bladder [x] Other [ ]
- Tubing Used: Teflon [ ] Polyethylene [x] N/A [ ]
- Water Quality Meter (type/Serial Number): Horiba U52 SCSY9HWX
- Sampling Method: Bailer [ ] Peristaltic [ ] Bladder [x] Other [ ]
- Did well go dry? Yes [ ] No [x]
- Final Depth to Water (prior to turning off pump): 13.00
- Barometric Pressure (At time of sampling) in mm/Hg: 757.845

FIELD PARAMETER READINGS:

Time	0939	0941	0943	0945	0947	0949	0954	0959	1004	1009	1014	1019	1024	1029
Rate (ml/min)	200	200	200	200	200	200	200	200	200	200	200	100	100	100
Depth to Water (ft. TOC)	2.99	3.34	3.65	4.18	4.65	5.29	6.61	7.50	8.41	9.22	9.73	10.65	11.10	11.40
Temperature (°C)	10.71	9.34	8.33	7.81	7.74	7.63	7.29	6.97	7.17	7.01	8.71	7.54	7.57	7.29
pH	5.03	5.52	5.75	6.08	6.18	6.23	6.47	6.49	6.52	6.57	6.23	6.45	6.41	6.42
Conductivity (mS/cm)	0.155	0.159	0.161	0.160	0.158	0.156	0.149	0.140	0.136	0.132	0.111	0.119	0.120	0.119
Dissolved Oxygen (mg/L)	2.56	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.00	0.00	0.00
Turbidity (NTU)	216	219	230	245	263	229	228	226	226	226	207	197	192	194
ORP (mV)	198	135	99	37	17	3	-15	-26	-25	-26	5	-9	-10	-9

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & Vanadium [x]
- Diss. Hexavalent Chromium [x]
- Total Cyanide [x]
- Free Cyanide [ ]
- Total Dissolved Solids [ ]
- Hardness [ ]
- VOCs (Dichlorobenzenes) [ ]

- Sample ID: MW-OB14-20190321
- Start Time: 1354
- End Time: 1400
- MS/MSD: Yes [ ] No [x]
- Duplicate: Yes [ ] No [x]
- Total Bottles: 3
- Sampled By: CC

- Duplicate ID:
- Sample Time:
- Total Bottles:
- Sampled By:
- MS/MSD ID:
- Sample Time:
- Total Bottles:
- Sampled By:

Observations (water color, clarity, etc.):

1019-1014: Horiba calibrat

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Chris C	Well ID:	MW-OB14	
Date:	3/21/19	Original Install Depth:	18.0	feet
Weather:	40° overcast	Screen Length:	10	feet
Time In: 0844	Time Out: 1407	Well Diameter:	2	inches

WELL INFORMATION

		3/18	3/21				
Depth to Water (from TOC):	(feet)	NA	3.05	Well Type: 1431	Flushmount ☑		Stick-Up ☐
Depth to Water(From TOC) With Pump in place:	(feet)		7.14	Well Locked:	Yes ☐		No ☑
Total Depth (from TOC):	(feet)		19.41	Measuring Point Marked:	Yes ☐		No ☑
Length of Water Column :	(feet)		16.36	Well Condition:	Good ☐		Poor ☑
				Well Condition Comments:	2 bolts miss		

WELL WATER INFORMATION			EVACUATION INFORMATION				
Volume of Water in Well:	(mL or gal)	2.67 gal	Pump ID: 1431	Pump Size: 1.75"	Depth of Pump Intake: 14.41		
Pumping Rate of Pump:	(mL/min)	~150	Evacuation Method:	Bailer ☐	Peristaltic ☐	Bladder ☑	Other ☐
Total Volume Removed:	(mL or gal)	6	Tubing Used:	Teflon ☐	Polyethylene ☑	N/A ☐	

Volume Measurements	(gal)	(ml)	Tubing/Well Size				
				Water Quality Meter (type/Serial Number): Horiba U52 SCS79HWX			
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method: Bailer ☐	Peristaltic ☐	Bladder ☑	Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry? Yes ☐	No ☑		
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): 13.10			
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: 752.845			

FIELD PARAMETER READINGS:

Time	1034	1039	1044	1049	1054	1059	1104	1109	1114	1119	1124	1129	1134	1139
Rate (ml/min)		100	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	~~11.70~~	11.70	12.55	12.65	12.79	12.90	12.80	12.70	12.65	12.45	12.40	12.35	12.30	12.36
Temperature (°C)		8.33	8.69	8.35	8.30	8.41	8.41	8.44	8.76	8.83	8.64	8.41	8.33	13.37
pH		6.01	6.64	6.92	6.91	6.88	6.92	6.98	7.07	7.21	7.26	7.55	7.37	3.66
Conductivity (mS/cm)		0.137	0.160	0.175	0.179	0.178	0.184	0.188	0.195	0.202	0.206	0.212	0.214	0.145
Dissolved Oxygen (mg/L)		2.21	0.00	5.52	5.36	4.78	4.38	4.03	3.56	3.07	2.80	2.33	2.13	9.07
Turbidity (NTU)		220	207	119	113	115	99.7	89.5	76.1	64.8	64.4	53.7	52.6	15.7
ORP (mV)		-5	-35	-42	-54	-60	-65	-72	-81	-91	-95	-102	-106	327

SAMPLE INFORMATION

Sample List:				
Diss. Chromium & ~~Vanadium~~ ☑	Sample ID: MW-OB14_20190321		Duplicate ID:	
Diss. Hexavalent Chromium ☑	Start Time: 1354		Sample Time:	
Total Cyanide ☑	End Time: 1400		Total Bottles:	
Free Cyanide ☐	MS/MSD: Yes ☐	No ☑	Sampled By:	
Total Dissolved Solids ☐	Duplicate: Yes ☐	No ☑	MS/MSD ID:	
Hardness ☐	Total Bottles: 3		Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By: CC		Total Bottles:	
			Sampled By:	

Observations (water color, clarity, etc.):

1034: pump ~~1433~~ 1434 replaced
1134: horiba unit shut off
VC of sump

Free Cyanide Sulfide Test Strip: Positive (Black) / ~~Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	C[illegible] C	Well ID:	~~MW-0830~~ MW-0314
Date:	3/21/19	Original Install Depth:	18.25 feet
Weather:	40° overcast	Screen Length:	10 ft feet
Time In: 0844	Time Out: 1407	Well Diameter:	2 inches

		3/18	3/21
Depth to Water (from TOC):	(feet)	NA	13.05
Depth to Water(From TOC) With Pump in place:	(feet)		2.14
Total Depth (from TOC):	(feet)		19.41
Length of Water Column :	(feet)		16.36

WELL INFORMATION

Well Type:	Flushmount	☑	Stick-Up	☐
Well Locked:	Yes	☐	No	☑
Measuring Point Marked:	Yes	☐	No	☑
Well Condition:	Good	☐	Poor	☑

Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	2.67 gal
Pumping Rate of Pump:	(mL/min)	~150
Total Volume Removed:	(mL or gal)	6

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 14318 Pump Size: 1.75" Depth of Pump Intake: 14.41

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☑ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U52 VCF0S[illegible]

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☑ Other ☐

Did well go dry? Yes ☐ No ☑

Final Depth to Water (prior to turning off pump): 13.10

Barometric Pressure (At time of sampling) in mm/Hg: 752.845

FIELD PARAMETER READINGS:

Time	1144	1149	1154	1159	1204	1209	1214	1219	~~1224~~	1229	1234	1239	1244	1249
Rate (ml/min)	100	100	100	100	100	100	100	100		100	100	100	100	100
Depth to Water (ft. TOC)	12.60	12.68	12.84	12.93	13.03	13.04	12.85	12.74		12.63	12.65	12.65	12.68	12.68
Temperature (°C)	9.37	8.72	7.91	7.74	7.64	7.52	7.39	7.21		7.78	7.56	7.52	7.50	7.46
pH	6.59	6.80	7.22	7.42	7.51	7.64	7.70	7.76		7.95	8.14	8.27	8.54	8.37
Conductivity (mS/cm)	0.361	0.356	0.324	0.308	0.304	0.302	0.302	0.302		0.315	0.318	0.326	0.557	0.342
Dissolved Oxygen (mg/L)	10.05	9.95	9.52	9.78	9.04	8.67	8.47	8.30		2.13	0.94	0.70	0.56	0.52
Turbidity (NTU)	15.4	15.3	17.5	21.7	21.8	18.5	18.4	18.3		27.2	27.4	14.7	15.2	15.0
ORP (mV)	55	23	-30	-56	-66	-77	-81	-83		-9	-46	-59	-66	-74

SAMPLE INFORMATION

Sample List:				
Diss. Chromium & ~~Vanadium~~ ☑	Sample ID: MW-0314_20190321		Duplicate ID:	
Diss. Hexavalent Chromium ☑	Start Time:	1354	Sample Time:	
Total Cyanide ☑	End Time:	1400	Total Bottles:	
Free Cyanide ☐	MS/MSD: Yes ☐	No ☑	Sampled By:	
Total Dissolved Solids ☐	Duplicate: Yes ☐	No ☑	MS/MSD ID:	
Hardness ☐	Total Bottles:	3	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By:	C	Total Bottles:	
			Sampled By:	

Observations (water color, clarity, etc.):

1224: horiba cleared out

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	C. C.	Well ID:	~~MW-OB30~~ MW-OB14
Date:	3/21/19	Original Install Depth:	18.~~25~~ 20 feet
Weather:	40° overcast	Screen Length:	10 ~~12~~ 10 feet
Time In:	0844	Time Out: 1407	Well Diameter: 2 inches

WELL INFORMATION

		2/18	3/21			
Depth to Water (from TOC):	(feet)	NA	3.95	Well Type:	Flushmount ☑	Stick-Up ☐
Depth to Water(From TOC) With Pump in place:	(feet)		2.14	Well Locked:	Yes ☐	No ☑
Total Depth (from TOC):	(feet)		18.4	Measuring Point Marked:	Yes ☐	No ☑
Length of Water Column :	(feet)		16.31	Well Condition:	Good ☐	Poor ☑
				Well Condition Comments:		

WELL WATER INFORMATION			EVACUATION INFORMATION
Volume of Water in Well:	(mL or gal)	2.67	Pump ID: 14318 Pump Size: 1.75" Depth of Pump Intake: 14.41
Pumping Rate of Pump:	(mL/min)	~150	Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☑ Other ☐
Total Volume Removed:	(mL or gal)	6	Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐

Volume Measurements	(gal)	(ml)	Tubing/Well Size	
				Water Quality Meter (type/Serial Number): Horiba U52 U4FOSWMJ
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☑ Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry? Yes ☐ No ☑
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): 13.10
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: 757.845

FIELD PARAMETER READINGS:

Time	1254	1259	1304	1309	1314	1319	1324	1329	1334	1339	1348	1349		
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100		
Depth to Water (ft. TOC)	12.70	12.72	12.73	12.75	12.76	12.79	12.81	12.82	12.83	12.84	12.88	12.90		
Temperature (°C)	7.36	7.28	7.20	7.12	6.96	6.97	6.92	6.87	6.86	6.88	6.87	6.86		
pH	8.43	8.48	8.56	8.61	8.74	8.81	8.89	8.98	9.03	9.11	9.16	9.18		
Conductivity (mS/cm)	0.347	0.352	0.355	0.359	0.362	0.366	0.370	0.373	0.374	0.376	0.379	0.378		
Dissolved Oxygen (mg/L)	0.47	0.39	0.36	0.32	[illegible]	0.23	0.21	0.13	0.14	0.13	0.12	0.12		
Turbidity (NTU)	14.7	14.3	14.0	13.4	13.1	12.6	11.8	11.1	11.2	10.0	9.8	9.7		
ORP (mV)	-83	-87	-90	-91	-94	-94	-95	-97	-97	-98	-98	-98		

SAMPLE INFORMATION

Sample List:			
Diss. Chromium & ~~Vanadium~~ ☑	Sample ID: MW-OB14_20190321	Duplicate ID:	
Diss. Hexavalent Chromium ☑	Start Time: 1354	Sample Time:	
Total Cyanide ☑	End Time: 1400	Total Bottles:	
Free Cyanide ☐	MS/MSD: Yes ☐ No ☑	Sampled By:	
Total Dissolved Solids ☐	Duplicate: Yes ☐ No ☑	MS/MSD ID:	
Hardness ☐	Total Bottles: 3	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By: CC	Total Bottles:	
		Sampled By:	

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

F.F. hex chrom (125 unpreserved), nitric acid (red lab) — Sample name: well ID-Date

no F.F. green label - NaOH — client: Ashland

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Chris C.		Well ID:	MW-OB25	
Date: 3/19/19		Original Install Depth:	10.0	feet
Weather: Sunny 21°F		Screen Length:	5	feet
Time In: ~~8~~ 0925	Time Out: 1035	Well Diameter:	2	inches

		3/18/19	3/19/19
Depth to Water (from TOC):	(feet)	7.75	7.84
Depth to Water(From TOC) With Pump in place:	(feet)		8.05
Total Depth (from TOC):	(feet)	11.56	
Length of Water Column :	(feet)		3.72

WELL INFORMATION

Well Type:	Flushmount	☑	Stick-Up	☐
Well Locked:	Yes	☐	No	☑
Measuring Point Marked:	Yes	☐	No	☑
Well Condition:	Good	☐	Poor	☑

Well Condition Comments: no bolts

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.61
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	1 gallon

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 416004652 Pump Size: 3/8 x 1/4 Depth of Pump Intake: ~~9.00~~ 9.70 CC

Evacuation Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐
Tubing Used:	Teflon ☐	Polyethylene ☑	N/A ☐	

Water Quality Meter (type/Serial Number): SLSY9HWX Horiba - U-52

Sampling Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐
Did well go dry?	Yes ☐	No ☒		

Final Depth to Water (prior to turning off pump): 8.80

Barometric Pressure (At time of sampling) in mm/Hg: 766.342

FIELD PARAMETER READINGS:

Time	0945	0947	0949	0951	0953	0955	1000	1005	1010	1015	1020			
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100			
Depth to Water (ft. TOC)	8.17	8.23	8.28	8.30	8.33	8.37	8.45	8.52	8.56	8.60	8.64			
Temperature (°C)	12.78	8.74	7.98	7.83	7.58	6.94	6.80	6.43	6.25	6.24	6.35			
pH	6.51	6.75	6.89	6.99	7.07	7.13	7.14	7.14	7.11	7.11	7.11			
Conductivity (mS/cm)	0.288	0.303	0.305	0.303	0.304	0.309	0.310	0.314	0.318	0.320	0.320			
Dissolved Oxygen (mg/L)	7.16	7.41	6.71	6.40	5.98	5.87	5.54	5.34	5.57	5.36	5.21			
Turbidity (NTU)	8.7	6.1	3.0	2.0	3.1	3.1	2.2	3.9	7.1	7.2	7.1			
ORP (mV)	163	153	152	153	158	165	175	186	196	200	202			

SAMPLE INFORMATION

Sample List:
- Diss. Chromium ~~& Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID:	MW-OB25_20190319
Start Time:	1024
End Time:	~~1027~~ 1030
MS/MSD:	Yes ☐ No ☒
Duplicate:	Yes ☐ No ☒
Total Bottles:	3
Sampled By:	CC

Duplicate ID:	
Sample Time:	
Total Bottles:	
Sampled By:	
MS/MSD ID:	
Sample Time:	
Total Bottles:	
Sampled By:	

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

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F.F. hex. chrom (125mL), red label (nitric acid)
no F.F. green label, NaOH

sample name wellID_date
client Ashland

GROUNDWATER SAMPLING LOG
Ashland Glens Falls, NY
Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M.	Well ID:	MW-OB26	
Date: 3/19/19	Original Install Depth:	14.0	feet
Weather: Sunny, 31°F	Screen Length:	5	feet
Time In: 928 Time Out: 1020	Well Diameter:	2	inches

		3/18/19	3/19/19
Depth to Water (from TOC):	(feet)	11.35	11.50
Depth to Water(From TOC) With Pump in place:	(feet)		11.47
Total Depth (from TOC):	(feet)	17.68	
Length of Water Column :	(feet)	6.18	

WELL INFORMATION

Well Type:	Flushmount	☑	Stick-Up	☐
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☑	Poor	☐
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.01
Pumping Rate of Pump:	(mL/min)	120 → 105
Total Volume Removed:	(mL or gal)	.25

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: H1600455 Pump Size: 1/4" Depth of Pump Intake: ~~14.52~~ 15.18 CM

Evacuation Method:	Bailer	☐	Peristaltic	☒	Bladder	☐	Other	☐
Tubing Used:	Teflon	☐	Polyethylene	☒	N/A	☐		

Water Quality Meter (type/Serial Number): U-52 / Horiba 1BR1K5G0

Sampling Method:	Bailer	☐	Peristaltic	☒	Bladder	☐	Other	☐
Did well go dry?	Yes	☒	No	☐				

Final Depth to Water (prior to turning off pump): DRY

Barometric Pressure (At time of sampling) in mm/Hg: 766.315

FIELD PARAMETER READINGS:

Time	940	942	944	946	948	950	955	1000					
Rate (ml/min)	120	120	120	120	120	105	105	105					
Depth to Water (ft. TOC)	12.98	13.25	13.51	13.72	13.98	14.31	14.91	15.51					
Temperature (°C)	9.87	9.66	9.62	9.59	9.57	9.50	9.39	9.40					
pH	7.12	7.49	7.60	7.66	7.70	7.68	7.73	7.74					
Conductivity (mS/cm)	0.111	0.110	0.109	0.108	0.109	0.109	0.110	0.112					
Dissolved Oxygen (mg/L)	7.57	7.03	7.66	6.99	6.95	6.84	6.77	6.74					
Turbidity (NTU)	2.3	2.3	3.6	3.9	3.8	4.0	4.3	3.7					
ORP (mV)	118	117	123	122	128	133	146	153					

SAMPLE INFORMATION

Sample List:

- Diss. Chromium ~~& Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB26_20190319
Start Time: NS
End Time: NS
MS/MSD: Yes ☐ No ☐
Duplicate: Yes ☐ No ☐
Total Bottles:
Sampled By:

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):
Well went Dry

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Chris C	Well ID:	MW-08B6		
Date:	3/20/19	Original Install Depth:	18	feet	
Weather:	50° Sunny	Screen Length:	5	feet	
Time In: 1425	Time Out: 1535	Well Diameter:	2	inches	

WELL INFORMATION 3/20

Depth to Water (from TOC):	(feet)	11.35 | 12.75	Well Type:	Flushmount	☑	Stick-Up	☐
Depth to Water(From TOC) With Pump in place:	(feet)	~~NA~~ 12.78	Well Locked:	Yes	☐	No	☑
Total Depth (from TOC):	(feet)	17.68	Measuring Point Marked:	Yes	☐	No	☑
Length of Water Column :	(feet)	4.93	Well Condition:	Good	☐	Poor	☐
			Well Condition Comments:				

WELL WATER INFORMATION				EVACUATION INFORMATION
Volume of Water in Well:	(mL or gal)	.7987		Pump ID: H1004652 Pump Size: 1/4 x 3/8 Depth of Pump Intake: 15.22
Pumping Rate of Pump:	(mL/min)	150		Evacuation Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐
Total Volume Removed:	(mL or gal)	—		Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number): U-52 Horiba SL5Y9HWX
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry? Yes ☐ No ☒
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): 14.80
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: 762.665

FIELD PARAMETER READINGS:

Time	1437													
Rate (ml/min)	150													
Depth to Water (ft. TOC)	13.40													
Temperature (°C)	12.72													
pH	9.12													
Conductivity (mS/cm)	0.438													
Dissolved Oxygen (mg/L)	7.04													
Turbidity (NTU)	5.7													
ORP (mV)	82													

SAMPLE INFORMATION

Sample List:		Sample ID:	MW-08B6_20190320	Duplicate ID:	
Diss. Chromium & ~~Vanadium~~	☑	Start Time:	1442	Sample Time:	
Diss. Hexavalent Chromium	☑	End Time:	1450	Total Bottles:	
Total Cyanide	☑	MS/MSD:	Yes ☐ No ☑	Sampled By:	
Free Cyanide	☐	Duplicate:	Yes ☐ No ☑	MS/MSD ID:	
Total Dissolved Solids	☐	Total Bottles:	3	Sample Time:	
Hardness	☐	Sampled By:	C	Total Bottles:	
VOCs (Dichlorobenzenes)	☐			Sampled By:	

Observations (water color, clarity, etc.):

GRAB

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

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GROUNDWATER SAMPLING LOG
Ashland Glens Falls, NY
Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Chris C.	Well ID:	MW-OB30	
Date: 3/20/19	Original Install Depth:	18.25	feet
Weather: Sunny, 50°F	Screen Length:	12	feet
Time In: 1235 Time Out: 1355	Well Diameter:	2	inches

WELL INFORMATION

		3/18	3/20/19
Depth to Water (from TOC):	(feet)	8.78	8.25
Depth to Water(From TOC) With Pump in place:	(feet)	8.20	
Total Depth (from TOC):	(feet)	18.55	
Length of Water Column :	(feet)	10.~~33~~ 32	

Well Type:	Flushmount ☐		Stick-Up ☑	
Well Locked:	Yes ☑		No ☐	
Measuring Point Marked:	Yes ☑		No ☐	
Well Condition:	Good ☑		Poor ☐	
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.68
Pumping Rate of Pump:	(mL/min)	200
Total Volume Removed:	(mL or gal)	0.5 gal

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: H16004657 Pump Size: 1/4x3/8 Depth of Pump Intake: ~~13.67~~ ~~13.44~~ 13.39 CC

Evacuation Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U52 SLSY9HMX

Sampling Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☑

Final Depth to Water (prior to turning off pump): 10.55

Barometric Pressure (At time of sampling) in mm/Hg: ~~30.33~~ 763.84

FIELD PARAMETER READINGS:

Time	1250	1252	1254	1256	1258	1300	1305	1310					
Rate (ml/min)	200	200	200	200	200	200	200	200					
Depth to Water (ft. TOC)	8.70	8.75	8.85	8.95	9.08	9.15	9.59	9.65					
Temperature (°C)	13.19	12.24	11.95	12.21	12.30	12.24	11.51	11.46					
pH	9.91	10.86	10.89	10.91	10.91	10.91	10.96	10.96					
Conductivity (mS/cm)	0.702	0.707	0.703	0.691	0.689	0.691	0.703	0.706					
Dissolved Oxygen (mg/L)	2.53	0.93	0.22	0.00	0.00	0.00	0.00	0.00					
Turbidity (NTU)	11.8	9.0	7.6	6.3	6.3	4.4	4.2	3.1					
ORP (mV)	118	95	86	78	73	69	62	59					

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & ~~Vanadium~~ ☑
- Diss. Hexavalent Chromium ☑
- Total Cyanide ☑
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB30_20190320
Start Time: 1314
End Time: 1325
MS/MSD: Yes ☐ No ☑
Duplicate: Yes ☐ No ☑
Total Bottles: 3
Sampled By: CC

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black)~~ / Negative (No change) NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: KatelynF		Well ID:	MW-OB31	
Date: 3/20/19		Original Install Depth:	13.67	feet
Weather: Sunny, 50°F		Screen Length:	8	feet
Time In: 1245	Time Out: 1530	Well Diameter:	2	inches

WELL INFORMATION

		3/18	3/20/19
Depth to Water (from TOC):	(feet)	6.53	6.67
Depth to Water(From TOC) With Pump in place:	(feet)	6.31	
Total Depth (from TOC):	(feet)	13.94	
Length of Water Column :	(feet)	7.27	

Well Type:	Flushmount [ ]		Stick-Up [x]	
Well Locked:	Yes [x]		No [ ]	
Measuring Point Marked:	Yes [x]		No [ ]	
Well Condition:	Good [x]		Poor [ ]	
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.21
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	7.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Geopump Pump Size: 1/4, 3/8 Depth of Pump Intake: 10.34

Evacuation Method:	Bailer [ ]	Peristaltic [x]	Bladder [ ]	Other [ ]
Tubing Used:	Teflon [ ]	Polyethylene [x]	N/A [ ]	

Water Quality Meter (type/Serial Number): U-52 / P9PAB2R9

Sampling Method:	Bailer [ ]	Peristaltic [x]	Bladder [ ]	Other [ ]
Did well go dry?	Yes [ ]	No [x]		

Final Depth to Water (prior to turning off pump): 7.19

Barometric Pressure (At time of sampling) in mm/Hg: 762,056

FIELD PARAMETER READINGS:

Time	1257	1259	1301	1303	1305	1307	1312	1317	1322	1327	1332	1337	1342	1347
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	6.67	6.67	6.73	6.75	6.78	6.78	6.86	6.93	6.95	7.00	7.00	7.05	7.06	7.05
Temperature (°C)	12.26	10.81	9.57	8.30	8.20	8.10	7.99	7.84	7.88	7.97	7.85	7.87	7.92	8.20
pH	8.74	8.53	8.41	8.17	8.13	8.10	8.06	8.02	8.19	8.30	8.36	8.38	8.39	8.41
Conductivity (mS/cm)	0.283	0.296	0.304	0.314	0.315	0.316	0.320	0.329	0.339	0.341	0.343	0.342	0.347	0.350
Dissolved Oxygen (mg/L)	14.79	13.32	11.18	11.26	10.87	10.62	11.33	11.26	10.95	11.32	10.75	10.45	10.19	9.91
Turbidity (NTU)	1.0	1.1	1.6	1.0	0.4	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.4	0.6
ORP (mV)	296	301	310	323	327	329	330	311	257	242	226	199	172	157

SAMPLE INFORMATION

Sample List:
- Diss. Chromium ~~& Vanadium~~ [x]
- Diss. Hexavalent Chromium [x]
- Total Cyanide [x]
- Free Cyanide [ ]
- Total Dissolved Solids [ ]
- Hardness [ ]
- VOCs (Dichlorobenzenes) [ ]

Sample ID:	MW-OB31-20190320
Start Time:	1525
End Time:	1529
MS/MSD:	Yes [ ] No [x]
Duplicate:	Yes [ ] No [x]
Total Bottles:	3
Sampled By:	KF

Duplicate ID:	
Sample Time:	
Total Bottles:	
Sampled By:	
MS/MSD ID:	
Sample Time:	
Total Bottles:	
Sampled By:	

Observations (water color, clarity, etc.):

~~Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn F	Well ID:	MW-OB31	
Date: 3/20/19	Original Install Depth:	13.67	feet
Weather: Sunny, 50°F	Screen Length:	8	feet
Time In: 1245 Time Out: 1530	Well Diameter:	2	inches

WELL INFORMATION

		3/18	3/20/19
Depth to Water (from TOC):	(feet)	6.53	6.67
Depth to Water(From TOC) With Pump in place:	(feet)	6.31	
Total Depth (from TOC):	(feet)	13.94	
Length of Water Column :	(feet)	7.~~31~~	

Well Type:	Flushmount ☐		Stick-Up ☒	
Well Locked:	Yes ☒		No ☐	
Measuring Point Marked:	Yes ☒		No ☐	
Well Condition:	Good ☒		Poor ☐	
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.21
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	7.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Geopump Pump Size: 1/4, 3/8 Depth of Pump Intake: 10.~~31~~

Evacuation Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐
Tubing Used:	Teflon ☐	Polyethylene ☒	N/A ☐	

Water Quality Meter (type/Serial Number): U-52 / P1PAB0R9

Sampling Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐
Did well go dry?	Yes ☐	No ☒		

Final Depth to Water (prior to turning off pump): 7.19

Barometric Pressure (At time of sampling) in mm/Hg: 762.056

FIELD PARAMETER READINGS:

Time	1352	1357	1402	1407	1412	1417	1422	1427	1432	1437	1442	1447	1452	1457
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	7.12	7.15	7.17	7.17	7.17	7.17	7.17	7.25	7.21	7.21	7.22	7.22	7.22	7.22
Temperature (°C)	8.14	8.17	8.25	8.31	8.38	8.21	8.17	8.22	7.90	7.56	7.58	7.43	7.37	7.33
pH	8.42	8.78	9.10	9.27	9.43	9.64	9.82	9.98	9.79	10.14	10.27	10.34	10.40	10.49
Conductivity (mS/cm)	0.374	0.406	0.430	0.463	0.499	0.535	0.586	0.620	0.681	0.720	0.766	0.793	0.829	0.859
Dissolved Oxygen (mg/L)	9.84	11.21	9.18	8.74	8.31	7.94	7.52	7.72	5.78	5.26	4.84	4.68	4.29	4.00
Turbidity (NTU)	0.5	0.6	0.7	0.7	0.7	0.8	0.7	0.7	1.1	0.9	0.7	1.1	1.1	1.2
ORP (mV)	132	89	61	55	50	47	46	41	-62	-72	-82	-87	-93	-99

SAMPLE INFORMATION

Sample List:		
Diss. Chromium ~~& Vanadium~~ ☒	Sample ID: MW-OB31-20190320	Duplicate ID:
Diss. Hexavalent Chromium ☒	Start Time: 1525	Sample Time:
Total Cyanide ☒	End Time: 1529	Total Bottles:
Free Cyanide ☐	MS/MSD: Yes ☐ No ☒	Sampled By:
Total Dissolved Solids ☐	Duplicate: Yes ☐ No ☒	MS/MSD ID:
Hardness ☐	Total Bottles: 3	Sample Time:
VOCs (Dichlorobenzenes) ☐	Sampled By: KF	Total Bottles:
		Sampled By:

Observations (water color, clarity, etc.):

Replaced Horiba between 1427 & 1432

VCFDSWMD

Free Cyanide Sulfide Test Strip: ~~Positive (Black)~~ / Negative (No change) NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG
Ashland Glens Falls, NY
Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn F.	Well ID:	MW-OB31	
Date: 3/20/19	Original Install Depth:	13.67	feet
Weather: Sunny, 50°F	Screen Length:	8	feet
Time In: 1245 Time Out: 1530	Well Diameter:	2	inches

WELL INFORMATION

		3/18	3/20/19
Depth to Water (from TOC):	(feet)	6.53	6.67
Depth to Water(From TOC) With Pump in place:	(feet)	6.31	
Total Depth (from TOC):	(feet)	13.94	
Length of Water Column :	(feet)	7.21	

Well Type:	Flushmount ☐	Stick-Up ☒
Well Locked:	Yes ☒	No ☐
Measuring Point Marked:	Yes ☒	No ☐
Well Condition:	Good ☒	Poor ☐
Well Condition Comments:		

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.21
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	7.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4DS2 Geopump Pump Size: 1/4 | 3/8 Depth of Pump Intake: 10.34

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 / VCFDSWMJ

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 7.19

Barometric Pressure (At time of sampling) in mm/Hg: 762.056

FIELD PARAMETER READINGS:

Time	1502	1507	1512	1517	1522									
Rate (ml/min)	100	100	100	100										
Depth to Water (ft. TOC)	7.22	7.22	7.22	7.22										
Temperature (°C)	7.33	7.37	7.44	7.36										
pH	10.45	10.49	10.50	10.51										
Conductivity (mS/cm)	0.885	0.905	0.919	0.930										
Dissolved Oxygen (mg/L)	3.73	3.49	3.33	3.44										
Turbidity (NTU)	1.4	1.3	1.5	1.4										
ORP (mV)	-106	-110	-114	-116										

SAMPLE INFORMATION

Sample List:
- Diss. Chromium ~~& Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB31-20190320
Start Time: 1525
End Time: 1529
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: KF

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG
Ashland Glens Falls, NY
Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Chris C	Well ID:	MW-OB32		
Date: 3/20/19	Original Install Depth:	13.05	feet	
Weather: Sunny 40s	Screen Length:	5	feet	
Time In: 1015 Time Out: 1120	Well Diameter:	2	inches	

WELL INFORMATION

		3/18	3/20
Depth to Water (from TOC):	(feet)	8.20	8.49
Depth to Water(From TOC) With Pump in place:	(feet)		8.49
Total Depth (from TOC):	(feet)	13.52	
Length of Water Column :	(feet)	4.88	

Well Type:	Flushmount ☐		Stick-Up ☒	
Well Locked:	Yes ☒		No ☐	
Measuring Point Marked:	Yes ☒		No ☐	
Well Condition:	Good ☒		Poor ☐	
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.80
Pumping Rate of Pump:	(mL/min)	200
Total Volume Removed:	(mL or gal)	0.75

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: H16004652 Pump Size: 1/4 x 3/8 Depth of Pump Intake: 10.88

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U52 SCSY9HWX

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 9.18

Barometric Pressure (At time of sampling) in mm/Hg: 765.26

FIELD PARAMETER READINGS:

Time	1040	1042	1044	1046	1048	1050	1055	1100					
Rate (ml/min)	200	200	200	200	200	200	200	200					
Depth to Water (ft. TOC)	8.60	8.75	8.77	8.81	8.84	8.86	8.94	8.98					
Temperature (°C)	11.21	7.66	7.64	7.61	7.65	7.63	7.61	7.57					
pH	6.51	7.71	7.78	7.79	7.79	7.79	7.79	7.83					
Conductivity (mS/cm)	0.295	0.535	0.536	0.537	0.537	0.537	0.534	0.532					
Dissolved Oxygen (mg/L)	10.82	10.21	9.67	9.26	8.88	8.65	8.21	7.92					
Turbidity (NTU)	3.1	2.1	0.7	0.0	0.0	0.0	0.0	0.0					
ORP (mV)	185	306	309	316	322	326	331	332					

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB32_20190320
Start Time: 1104
End Time: 1110
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 83
Sampled By: CC

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn F	Well ID:	MW-OB33	
Date: 3/20/19	Original Install Depth:	15.21	feet
Weather: Overcast 30s	Screen Length:	10	feet
Time In: 0915 Time Out: 1130	Well Diameter:	2	inches

WELL INFORMATION

		3/18	3/20
Depth to Water (from TOC):	(feet)	6.73	6.95
Depth to Water(From TOC) With Pump in place:	(feet)	6.93	
Total Depth (from TOC):	(feet)	~~15.55~~ 15.47	
Length of Water Column :	(feet)	8.52	

Well Type:	Flushmount	☐	Stick-Up	☒
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.39
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	5.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4057 Pump Size: 1/4 3/8 Depth of Pump Intake: ~~11.10~~ 11.21 KF

Evacuation Method:	Bailer	☐	Peristaltic	☒	Bladder	☐	Other	☐
Tubing Used:	Teflon	☐	Polyethylene	☒	N/A	☐		
Water Quality Meter (type/Serial Number):	U-52 / P9AB3R9							
Sampling Method:	Bailer	☐	Peristaltic	☒	Bladder	☐	Other	☐
Did well go dry?	Yes	☐	No	☒				

Final Depth to Water (prior to turning off pump): 6.95

Barometric Pressure (At time of sampling) in mm/Hg: 764.816

FIELD PARAMETER READINGS:

Time	0932	0934	0936	0938	0940	0942	0947	0952	0957	1002	1007	1012	1017	1022
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	6.95	6.95	6.95	6.95	6.95	6.95	6.99	6.95	6.98	6.95	6.96	6.96	6.95	6.95
Temperature (°C)	10.26	10.07	9.26	8.78	8.49	8.24	7.93	7.93	7.91	7.61	7.71	7.69	7.79	7.79
pH	6.30	6.60	6.81	6.93	7.02	7.19	7.57	7.78	8.07	8.30	8.50	8.66	8.83	8.89
Conductivity (mS/cm)	0.301	0.301	0.310	0.320	0.331	0.343	0.355	0.372	0.383	0.398	0.406	0.419	0.423	0.437
Dissolved Oxygen (mg/L)	10.23	8.26	7.22	6.76	6.36	5.96	5.69	5.23	5.01	5.86	4.64	4.69	4.33	5.19
Turbidity (NTU)	4.0	3.6	6.4	5.6	5.4	5.3	3.9	3.3	3.4	2.6	2.2	2.0	1.8	5.4
ORP (mV)	369	347	336	335	332	332	328	323	318	314	311	309	308	307

SAMPLE INFORMATION

Sample List:		
Diss. Chromium ~~& Vanadium~~ ☒	Sample ID: MW-OB33_20190320	Duplicate ID:
Diss. Hexavalent Chromium ☒	Start Time: 1125	Sample Time:
Total Cyanide ☒	End Time: 1128	Total Bottles:
Free Cyanide ☐	MS/MSD: Yes ☐ No ☒	Sampled By:
Total Dissolved Solids ☐	Duplicate: Yes ☐ No ☒	MS/MSD ID:
Hardness ☐	Total Bottles: 3	Sample Time:
VOCs (Dichlorobenzenes) ☐	Sampled By: KF	Total Bottles:
		Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn F.		Well ID:	MW-OB33		
Date: 3/20/19		Original Install Depth:	15.21	feet	
Weather: Sunny, 30s		Screen Length:	10	feet	
Time In: 0915	Time Out: 1130	Well Diameter:	2	inches	

WELL INFORMATION

		3/18	3/20/19				
Depth to Water (from TOC):	(feet)	6.73	6.95	Well Type:	Flushmount ☐	Stick-Up ☒	
Depth to Water(From TOC) With Pump in place:	(feet)			Well Locked:	Yes ☒	No ☐	
Total Depth (from TOC):	(feet)	15.47		Measuring Point Marked:	Yes ☒	No ☐	
Length of Water Column :	(feet)	8.52		Well Condition:	Good ☒	Poor ☐	
				Well Condition Comments:			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.39	
Pumping Rate of Pump:	(mL/min)	100	
Total Volume Removed:	(mL or gal)	5.00	
Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Pump Size: 1/4, 3/8 Depth of Pump Intake: 11.20

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 / PIP3B3R9

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 6.95

Barometric Pressure (At time of sampling) in mm/Hg: 764.816

FIELD PARAMETER READINGS:

Time	1027	1032	1037	1042	1047	1052	1057	1102	1107	1112	1117	1122		
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100			
Depth to Water (ft. TOC)	6.95	6.95	6.95	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98			
Temperature (°C)	7.84	7.87	7.89	7.91	7.60	7.60	7.67	7.64	7.62	7.77	7.61			
pH	8.98	9.03	9.11	9.18	9.12	9.27	9.28	9.29	9.32	9.34	9.36			
Conductivity (mS/cm)	0.438	0.445	0.457	0.462	0.473	0.473	0.474	0.480	0.484	0.486	0.492			
Dissolved Oxygen (mg/L)	4.95	4.91	4.37	4.08	4.04	3.76	3.56	3.62	3.35	3.18	3.14			
Turbidity (NTU)	6.0	5.9	5.3	7.0	7.6	7.3	5.3	4.7	4.6	4.6	4.0			
ORP (mV)	306	305	304	304	309	303	303	303	302	303	302			

SAMPLE INFORMATION

Sample List:

- Diss. Chromium ~~& Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB33_20190320

Start Time: 1125

End Time: 1128

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 3

Sampled By: KF

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

~~Free Cyanide~~ Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Chris C.	Well ID:	MW-OB34		
Date: 3/20/19	Original Install Depth:	16.04	feet	
Weather: Overcast 30's	Screen Length:	10	feet	
Time In: 0900 Time Out: 950	Well Diameter:	2	inches	

WELL INFORMATION

		3/18/19	3/20
Depth to Water (from TOC):	(feet)	12.10	12.27
Depth to Water(From TOC) With Pump in place:	(feet)		12.18
Total Depth (from TOC):	(feet)	16.17	
Length of Water Column :	(feet)	3.93	

Well Type:	Flushmount ☐		Stick-Up ☒	
Well Locked:	Yes ☑		No ☐	
Measuring Point Marked:	Yes ☐		No ☐	
Well Condition:	Good ☑		Poor ☐	
Well Condition Comments:	good			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.65
Pumping Rate of Pump:	(mL/min)	~180
Total Volume Removed:	(mL or gal)	0.75

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: H16004652 Pump Size: 1/4 x 5/8 Depth of Pump Intake: 14

Evacuation Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U52 SL549HWX

Sampling Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☑

Final Depth to Water (prior to turning off pump): 13.13

Barometric Pressure (At time of sampling) in mm/Hg: ~~30.36~~ CC 765.738

FIELD PARAMETER READINGS:

Time	0914	0916	0918	0920	0922	0924	0929	0934	0939				
Rate (ml/min)	200	200	200	200	200	200	150	150	150				
Depth to Water (ft. TOC)	12.49	12.56	12.61	12.66	12.70	12.74	12.81	12.92	12.98				
Temperature (°C)	14.43	8.88	8.57	8.38	8.17	7.82	7.50	7.70	7.99				
pH	6.34	6.61	6.57	6.51	6.49	6.51	6.51	6.51	6.50				
Conductivity (mS/cm)	0.654	0.722	0.721	0.722	0.729	0.734	0.762	0.777	0.779				
Dissolved Oxygen (mg/L)	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Turbidity (NTU)	26.4	21.2	17.0	14.9	10.9	11.5	4.2	0.0	0.0				
ORP (mV)	245	189	176	164	155	146	127	121	121				

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & ~~Vanadium~~ ☑
- Diss. Hexavalent Chromium ☑
- Total Cyanide ☑
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB34_20190320

Start Time: 0944

End Time: 946

MS/MSD: Yes ☐ No ☑

Duplicate: Yes ☐ No ☑

Total Bottles: 3

Sampled By: CC

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

Page 1 of 1

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: CG C	Well ID:	Sump A	
Date: 3/20/19	Original Install Depth:	~31.5	feet
Weather: 50° Sunny	Screen Length:	N/A	feet
Time In: 1522 Time Out: 1540	Well Diameter:	N/A	inches

WELL INFORMATION

		3/18 / 3/20		
Depth to Water (from TOC):	(feet)	29.27 / 28.95	Well Type:	Flushmount ☐ Stick-Up ☐ NA
Depth to Water(From TOC) With Pump in place:	(feet)	NA	Well Locked:	Yes ☒ No ☐
Total Depth (from TOC):	(feet)	NA	Measuring Point Marked:	Yes ☒ No ☐
Length of Water Column :	(feet)	NA	Well Condition:	Good ☒ Poor ☐
			Well Condition Comments:	

WELL WATER INFORMATION				EVACUATION INFORMATION
Volume of Water in Well:	(mL or gal)	NA		Pump ID: NA Pump Size: 2" Depth of Pump Intake: NA
Pumping Rate of Pump:	(mL/min)	NA		Evacuation Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐
Total Volume Removed:	(mL or gal)	NA		Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number): Horiba U-52 5L549HWX
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry? Yes ☐ No ☒
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): 28.84
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: 762.056

FIELD PARAMETER READINGS:

Time	1527													
Rate (ml/min)	NA													
Depth to Water (ft. TOC)	28.95													
Temperature (°C)	11.81													
pH	8.25													
Conductivity (mS/cm)	0.597													
Dissolved Oxygen (mg/L)	4.61													
Turbidity (NTU)	4.2													
ORP (mV)	252													

SAMPLE INFORMATION

Sample List:				Observations (water color, clarity, etc.):
Diss. Chromium & ~~Vanadium~~ ☑	Sample ID: SumpA_20190320	Duplicate ID:		GRAB
Diss. Hexavalent Chromium ☑	Start Time: 1534	Sample Time:		
Total Cyanide ☑	End Time: 1543	Total Bottles:		
Free Cyanide ☐	MS/MSD: Yes ☐ No ☑	Sampled By:		
Total Dissolved Solids ☐	Duplicate: Yes ☐ No ☑	MS/MSD ID:		Free Cyanide Sulfide Test Strip: ~~Positive (Black)~~ / Negative (No change) NA
Hardness ☐	Total Bottles: 3	Sample Time:		UNIT STABILITY
VOCs (Dichlorobenzenes) ☐	Sampled By: CC	Total Bottles:		
		Sampled By:		

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Chris C.	Well ID:	Sump B	
Date: 3/20/19	Original Install Depth:	~29.2	feet
Weather: 50° Sunny	Screen Length:	N/A	feet
Time In: 1406 Time Out: 1519	Well Diameter:	N/A	inches

		3/18 | 3/20	WELL INFORMATION				
Depth to Water (from TOC):	(feet)	24.00 | 22.95	Well Type:	Flushmount	☒	Stick-Up	☐
Depth to Water(From TOC) With Pump in place:	(feet)	NA	Well Locked:	Yes	☒	No	☐
Total Depth (from TOC):	(feet)	NA	Measuring Point Marked:	Yes	☒	No	☐
Length of Water Column :	(feet)	NA	Well Condition:	Good	☒	Poor	☐
			Well Condition Comments:	Good			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	NA
Pumping Rate of Pump:	(mL/min)	NA
Total Volume Removed:	(mL or gal)	NA

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: NA — Pump Size: 2" — Depth of Pump Intake: NA

Evacuation Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒

Water Quality Meter (type/Serial Number): Horiba U-52 5L54914WX

Sampling Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 22.97

Barometric Pressure (At time of sampling) in mm/Hg: 762.302

FIELD PARAMETER READINGS:

Time	1508												
Rate (ml/min)	NA												
Depth to Water (ft. TOC)	22.95												
Temperature (°C)	13.11												
pH	8.10												
Conductivity (mS/cm)	0.595												
Dissolved Oxygen (mg/L)	6.35												
Turbidity (NTU)	8.4												
ORP (mV)	277												

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: SUMPB_20190320
Start Time: 1514
End Time: 1518
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: CC

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

GRAB

Free Cyanide Sulfide ~~Test Strip: Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn Cody		Well ID:	SW-01	
Date: 3/21/19		Original Install Depth:	N/A	feet
Weather: Cloudy 30s		Screen Length:	N/A	feet
Time In: 900	Time Out: 945	Well Diameter:	N/A	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	NA	~~Well Type:~~	Flushmount ☐	Stick-Up ☐		
Depth to Water(From TOC) With Pump in place:	(feet)	NA	Well Locked:	Yes ☐	No ☐		
Total Depth (from TOC):	(feet)	NA	Measuring Point Marked:	Yes ☐	No ☐		
Length of Water Column :	(feet)	25	Well Condition:	Good ☐	Poor ☐		
			Well Condition Comments:				

WELL WATER INFORMATION				EVACUATION INFORMATION				
Volume of Water in Well:	(mL or gal)	NA		Pump ID: Geopump 4052	Pump Size: 1/4 x 3/8	Depth of Pump Intake: 1.5		
Pumping Rate of Pump:	(mL/min)	150		Evacuation Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐
Total Volume Removed:	(mL or gal)	NA		Tubing Used:	Teflon ☐	Polyethylene ☒	N/A ☐	
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number):	1BR1K565	Horiba U-52		
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry?	Yes ☐	No ☒		
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump):	NA			
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg:	~~NA~~ 759.523			

FIELD PARAMETER READINGS:

Time	911												
Rate (ml/min)	150												
Depth to Water (ft. TOC)	NA												
Temperature (°C)	4.90												
pH	4.25												
Conductivity (mS/cm)	0.067												
Dissolved Oxygen (mg/L)	12.62												
Turbidity (NTU)	4.9												
ORP (mV)	355												

SAMPLE INFORMATION

Sample List:				
Diss. Chromium & Vanadium ☒	Sample ID:	SW-01_20190321	Duplicate ID:	
Diss. Hexavalent Chromium ☒	Start Time:	915	Sample Time:	
~~Total Cyanide~~ ☒	End Time:	925	Total Bottles:	
Free Cyanide ☒	MS/MSD:	Yes ☐ No ☒	Sampled By:	
Total Dissolved Solids ☒	Duplicate:	Yes ☐ No ☒	MS/MSD ID:	
Hardness ☒	Total Bottles:	6 5	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By:	GC	Total Bottles:	
			Sampled By:	

Observations (water color, clarity, etc.):

Not well → Grab sample

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn, Cody	Well ID:	SW-02	
Date: 3/21/19	Original Install Depth:	N/A	feet
Weather: Cloudy 30's	Screen Length:	N/A	feet
Time In: 1010 Time Out: 1030	Well Diameter:	N/A	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	NA	Well Type: Flushmount ☐ Stick-Up ☐
Depth to Water(From TOC) With Pump in place:	(feet)	NA	Well Locked: Yes ☐ No ☐
Total Depth (from TOC):	(feet)	NA	Measuring Point Marked: Yes ☐ No ☐
Length of Water Column :	(feet)	3.0	Well Condition: Good ☐ Poor ☐
			Well Condition Comments:

WELL WATER INFORMATION / **EVACUATION INFORMATION**

Volume of Water in Well:	(mL or gal)	NA		Pump ID: GeoPump 4052 Pump Size: 1/4" x 3/8 Depth of Pump Intake: 1.5
Pumping Rate of Pump:	(mL/min)	150		Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐
Total Volume Removed:	(mL or gal)	NA		Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number): 1BRIKSGJ Horiba - U52
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry? Yes ☐ No ☒
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): NA
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: ~~NA~~ 759.539

FIELD PARAMETER READINGS:

Time	1014												
Rate (ml/min)	150												
Depth to Water (ft. TOC)	NA												
Temperature (°C)	5.32												
pH	5.35												
Conductivity (mS/cm)	0.066												
Dissolved Oxygen (mg/L)	8.52												
Turbidity (NTU)	4.6												
ORP (mV)	373												

SAMPLE INFORMATION

Sample List:			
Diss. Chromium & Vanadium ☒	Sample ID: SW-02-20190321	Duplicate ID:	
Diss. Hexavalent Chromium ☒	Start Time: 1019	Sample Time:	
~~Total Cyanide~~ ☒	End Time: 1020	Total Bottles:	
Free Cyanide ☒	MS/MSD: Yes ☐ No ☒	Sampled By:	
Total Dissolved Solids ☒	Duplicate: Yes ☐ No ☒	MS/MSD ID:	
Hardness ☒	Total Bottles: 6 5	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By: KF, CM	Total Bottles:	
		Sampled By:	

Observations (water color, clarity, etc.):

Not well → Grab Sample

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

Page 1 of 1

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn, Cody	Well ID:	SW-03		
Date: 3/21/19	Original Install Depth:	N/A	feet	
Weather: Cloudy 30's	Screen Length:	N/A	feet	
Time In: 11:45 Time Out: 1245	Well Diameter:	N/A	inches	

WELL INFORMATION

Depth to Water (from TOC):	(feet)	NA	Well Type:	Flushmount ☐	Stick-Up ☐	
Depth to Water(From TOC) With Pump in place:	(feet)	NA	Well Locked:	Yes ☐	No ☐	
Total Depth (from TOC):	(feet)	NA	Measuring Point Marked:	Yes ☐	No ☐	
Length of Water Column :	(feet)	2.0	Well Condition:	Good ☐	Poor ☐	
			Well Condition Comments:			

WELL WATER INFORMATION / **EVACUATION INFORMATION**

Volume of Water in Well:	(mL or gal)	VA	Pump ID: GeoPump 4052	Pump Size: 1/4" x 3/8		Depth of Pump Intake: 1.0		
Pumping Rate of Pump:	(mL/min)	150	Evacuation Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐	
Total Volume Removed:	(mL or gal)	NA	Tubing Used:	Teflon ☐	Polyethylene ☒	N/A ☐		

Volume Measurements	(gal)	(ml)	Tubing/Well Size				
				Water Quality Meter (type/Serial Number):	1BRKSGJ Horiba U-52		
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method:	Bailer ☐	Peristaltic ☒	Bladder ☐ Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry?	Yes ☐	No ☒	
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump):	NA		
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg:	~~NA~~ 758.398		

FIELD PARAMETER READINGS:

Time	1200												
Rate (ml/min)	150												
Depth to Water (ft. TOC)	NA												
Temperature (°C)	6.55												
pH	6.01												
Conductivity (mS/cm)	0.051												
Dissolved Oxygen (mg/L)	7.17												
Turbidity (NTU)	4.3												
ORP (mV)	312												

SAMPLE INFORMATION

Sample List:				
Diss. Chromium & Vanadium ☒	Sample ID: SW-03_20190321	Duplicate ID: Dup_20190321	Observations (water color, clarity, etc.):	
Diss. Hexavalent Chromium ☒	Start Time: 1210	Sample Time: —	Not well → Grab Sample	
~~Total Cyanide~~ ☒	End Time: 1220	Total Bottles: 5		
Free Cyanide ☒	MS/MSD: Yes ☒ No ☐	Sampled By: KF		
Total Dissolved Solids ☒	Duplicate: Yes ☒ No ☐	MS/MSD ID: SW-03_20190321	Free Cyanide Sulfide Test Strip:	~~Positive (Black) / Negative~~ (No change)
Hardness ☒	Total Bottles: 5	Sample Time: 1210		
VOCs (Dichlorobenzenes) ☐	Sampled By: KF	Total Bottles: 5		
		Sampled By: KF		

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M, Katelyn F.	Well ID:	SW-04	
Date: 3/21/19	Original Install Depth:	N/A	feet
Weather: Raining, 30s	Screen Length:	N/A	feet
Time In: 1335 Time Out: ~~14~~00	Well Diameter:	N/A	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	3.00	~~Well Type:~~	Flushmount ☐ Stick-Up ☐
Depth to Water(From TOC) With Pump in place:	(feet)	~~2.00~~ 3.00	Well Locked:	Yes ☐ No ☐
Total Depth (from TOC):	(feet)	N/A	Measuring Point Marked:	Yes ☐ No ☐
Length of Water Column :	(feet)	3.00	Well Condition:	Good ☐ Poor ☐
			Well Condition Comments:	

WELL WATER INFORMATION				EVACUATION INFORMATION
Volume of Water in Well:	(mL or gal)	NA		Pump ID: 4052 Pump Size: 1/4-3/8 Depth of Pump Intake: 2.00
Pumping Rate of Pump:	(mL/min)	130		Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐
Total Volume Removed:	(mL or gal)	NA		Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number): Horiba U-52 IBRKS65
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry? Yes ☐ No ☒
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): NA
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: 757.767

FIELD PARAMETER READINGS:

Time	1340													
Rate (ml/min)	~~1~~130													
Depth to Water (ft. TOC)	NA													
Temperature (°C)	4.68													
pH	6.55													
Conductivity (mS/cm)	0.053													
Dissolved Oxygen (mg/L)	9.47													
Turbidity (NTU)	2.9													
ORP (mV)	261													

SAMPLE INFORMATION

Sample List:			
Diss. Chromium & Vanadium ☒	Sample ID: SW-04-20190321	~~Duplicate ID:~~	
Diss. Hexavalent Chromium ☒	Start Time: 1345	Sample Time:	
~~Total Cyanide~~ ☒	End Time: 1352	Total Bottles:	
Free Cyanide ☒	MS/MSD: Yes ☐ No ☒	Sampled By:	
Total Dissolved Solids ☒	Duplicate: Yes ☐ No ☒	~~MS/MSD ID:~~	
Hardness ☒	Total Bottles: ~~6~~ 5	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By: KF, CM	Total Bottles:	
		Sampled By:	

Observations (water color, clarity, etc.):

Not a well

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

Water Level Measurements
Ashland - Glens Falls, NY

Date 6/17/19 Quarter/Year: 2Q19

Personnel: Cody Murphy, Katelyn Foster, Haley Brown, Garrett Craven

Well Name	Install Depth (ft bgs)	Well Screen Length	Time	DTW (ft btoc)	Total Depth (ft btoc)	Comments
MAIN PLANT SITE						
AW-A14	34.5	10	845	4.86	32.61	
AW-B4	47.5	10	840	27.49	46.6	
AW-C11	158.0	10	835	46.58	158.51	
MW-OB14	18.0	10	850	4.61	14.79	
MW-OB25	10.0	5	830	4.8	11.58	
MW-OB26	14.0	5	901	10.76	16.64	
NG — ~~MW-OB34~~	~~16.04~~	~~10~~				
NG — ~~AW-B14~~	~~48.0~~	~~10~~				
NG — ~~AW-B15~~	~~47.0~~	~~10~~				
REMEDIATION SYSTEM						
Sump A	~31.5	N/A	843	29.03	NA	
Sump B	~29.2	N/A	825	23.10	NA	
NG — ~~EW-A14~~	~~34.4~~	~~11.4~~				
EW-B5	51.8	15.8	849	47.69	64.03	
MW-OB17	11	6	1025	7.64	13.81	
MW-OB18	9	5	1026	9.45	12.53	
MW-OB19	10	5	1008	7.96	9.63	
MW-OB20	8.5	4	1017	9.89	10.44	
MW-OB21	14.5	10	1016	13.25	16.66	
MW-OB23	6.5	4	1012	5.64	8.43	Dup, MSMSD
* IG-1	NA	NA	1005	6.06	8.87	
* IG-2	NA	NA	1010	7.96	11.42	missing J-plug
* P-1	8	5	1011	5.31	8.14	Gopher hole near well
* P-11	11	5	1040	8.42	13.02	
* P-12	8	5	1015	6.81	9.67	J-plug missing
SG-7	NA	NA	1042	DRY	NG	
SG-2 ~~SG-11~~	NA	NA	1045	DRY	NG	Dup, MSMSD
* ~~SG-2~~ SG-11	NA	NA	1048	DRY	5.25	
SG-12	NA	NA	905	3.2	NA	

6/18/19, SG-11 NA NA ~~1604~~ 1646 4.85 5.25

6/19/19 SG-11 NA NA 1029 4.85 5.25

6/19/19 SG-2 NA NA 1055 water column .32

6/19/19 SG-7 NA NA 1110 water column DRY

6/24/19 SG-11 NA NA 1530 NA 0.3

6/24/19 SG-7 NA NA 1610 NA 0.2

* Gauge Only

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Cody Murphy	Well ID:	AW-A14	
Date:	6/18/19	Original Install Depth:	34.5	feet
Weather:	60 50 overcast	Screen Length:	10	feet
Time In: 955	Time Out: 1130	Well Diameter:	2"	inches

WELL INFORMATION

6/18

Depth to Water (from TOC):	(feet)	16.86	Well Type:	Flushmount [X]	Stick-Up [ ]	
Depth to Water(From TOC) With Pump in place:	(feet)	16.74	Well Locked:	Yes [ ]	No [X]	
Total Depth (from TOC):	(feet)	32.61	Measuring Point Marked:	Yes [X]	No [ ]	
Length of Water Column :	(feet)	15.75	Well Condition:	Good [X]	Poor [ ]	
			Well Condition Comments:			

WELL WATER INFORMATION			**EVACUATION INFORMATION**					
Volume of Water in Well:	(mL or gal)	2.54	Pump ID: 14313	Pump Size: 1.75"		Depth of Pump Intake: 27.61		
Pumping Rate of Pump:	(mL/min)	160	Evacuation Method:	Bailer [ ]	Peristaltic [ ]	Bladder [X]	Other [ ]	
Total Volume Removed:	(mL or gal)	2	Tubing Used:	Teflon [ ]	Polyethylene [X]	N/A [ ]		
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number): HORIBA U-52 UWHTANNW				
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method:	Bailer [ ]	Peristaltic [ ]	Bladder [X]	Other [ ]
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry?	Yes [ ]	No [X]		
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): 21.36				
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: 755.705				

FIELD PARAMETER READINGS:

Time	1007	1009	1011	1013	1015	1017	1022	1027	1032	1037	1042	1047	1052	1057
Rate (ml/min)	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Depth to Water (ft. TOC)	18.75	19.09	19.41	19.69	19.95	20.15	20.56	20.79	20.94	21.09	21.16	21.19	21.23	21.25
Temperature (°C)	13.48	12.29	11.94	11.77	11.57	11.53	11.44	11.41	11.37	11.34	11.36	11.33	11.31	11.25
pH	7.35	8.10	8.50	8.82	8.99	9.05	9.00	8.89	8.82	8.71	8.68	8.63	8.60	8.57
Conductivity (mS/cm)	0.668	0.643	0.624	0.606	0.599	0.597	0.606	0.614	0.637	0.672	0.687	0.706	0.723	0.739
Dissolved Oxygen (mg/L)	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
Turbidity (NTU)	1.8	2.3	2.1	2.6	3.2	2.7	1.1	0.0	0.0	0.4	0.6	0.9	0.9	1.3
ORP (mV)	-136	-157	-175	-191	-203	-209	-214	-215	-216	-214	-213	-214	-213	-211

SAMPLE INFORMATION

Sample List:				
Diss. Chromium & Vanadium [X]	Sample ID: AW-A14-20190618		Duplicate ID:	
Diss. Hexavalent Chromium [X]	Start Time: 1111		Sample Time:	
Total Cyanide [X]	End Time: 1119		Total Bottles:	
Free Cyanide [ ]	MS/MSD: Yes [ ]	No [X]	Sampled By:	
Total Dissolved Solids [ ]	Duplicate: Yes [ ]	No [X]	MS/MSD ID:	
Hardness [ ]	Total Bottles: 3		Sample Time:	
VOCs (Dichlorobenzenes) [ ]	Sampled By: CM		Total Bottles:	
			Sampled By:	

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
±0.1	±10%	±10%, <10NTU	±3%	±10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody Murphy	Well ID:	AW-A14		
Date: 6/18/19	Original Install Depth:	34.5	feet	
Weather: 60's overcast	Screen Length:	10	feet	
Time In: 955 Time Out: 1130	Well Diameter:	2	inches	

WELL INFORMATION

		6/18 ~~6/17~~				
Depth to Water (from TOC):	(feet)	16.86 ~~16.86~~	Well Type:	Flushmount ☒	Stick-Up ☐	
Depth to Water(From TOC) With Pump in place:	(feet)	16.74	Well Locked:	Yes ☐	No ☒	
Total Depth (from TOC):	(feet)	32.61	Measuring Point Marked:	Yes ☒	No ☐	
Length of Water Column :	(feet)	15.75	Well Condition:	Good ☒	Poor ☐	
			Well Condition Comments:			

WELL WATER INFORMATION				EVACUATION INFORMATION
Volume of Water in Well:	(mL or gal)	2.54		Pump ID: ~~[illegible]~~ Bladder Pump 14x3 Pump Size: 1.75 Depth of Pump Intake: 27.61
Pumping Rate of Pump:	(mL/min)	160		Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐
Total Volume Removed:	(mL or gal)	2		Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number): HORIBA U-52 UWHTANNW
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry? Yes ☐ No ☒
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): 21.36
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: 755.705

FIELD PARAMETER READINGS:

Time	1102	1107											
Rate (ml/min)	160	160											
Depth to Water (ft. TOC)	21.27	21.30											
Temperature (°C)	11.28	11.26											
pH	8.55	8.52											
Conductivity (mS/cm)	0.745	0.752											
Dissolved Oxygen (mg/L)	0.00	0.00											
Turbidity (NTU)	1.7	1.8											
ORP (mV)	-212	-212											

SAMPLE INFORMATION

Sample List:			Observations (water color, clarity, etc.):
Diss. Chromium & Vanadium ☒	Sample ID: AW-A14_20190618	Duplicate ID:	
Diss. Hexavalent Chromium ☒	Start Time: 1111	Sample Time:	
Total Cyanide ☒	End Time: 1119	Total Bottles:	
Free Cyanide ☐	MS/MSD: Yes ☐ No ☒	Sampled By:	
Total Dissolved Solids ☐	Duplicate: Yes ☐ No ☒	MS/MSD ID:	Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ N/A
Hardness ☐	Total Bottles: 3	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By: CM	Total Bottles:	
		Sampled By:	

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
±0.1	±10%	±10%, <10NTU	±3%	±10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn Foster	Well ID:	AW-B4		
Date: 6/18/19	Original Install Depth:	41.5	feet	
Weather: 60's overcast	Screen Length:	10	feet	
Time In: 1310 Time Out: ~~1428~~ 1442	Well Diameter:	2"	inches	

WELL INFORMATION

		6/18	~~6/17~~				
Depth to Water (from TOC):	(feet)	27.49	~~27.44~~	Well Type:	Flushmount ☒	Stick-Up ☐
Depth to Water(From TOC) With Pump in place:	(feet)	27.31		Well Locked:	Yes ☒	No ☐
Total Depth (from TOC):	(feet)	46.68		Measuring Point Marked:	Yes ☒	No ☐
Length of Water Column :	(feet)	19.19		Well Condition:	Good ☒	Poor ☐
				Well Condition Comments:		

WELL WATER INFORMATION / **EVACUATION INFORMATION**

Volume of Water in Well:	(mL or gal)	3.13		Pump ID: 10522 Pump Size: 3/4" Depth of Pump Intake: 41.68
Pumping Rate of Pump:	(mL/min)	100		Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐
Total Volume Removed:	(mL or gal)	1.00		Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number): U-52 / PLNHHDHY
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry? Yes ☐ No ☒
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): 28.44
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: 754.579

FIELD PARAMETER READINGS:

	T0	T1 1341	T2	T3	T4	T5								
Time	1339	~~1341~~ 1341	1343	1345	1347	1349	1354	1359	1404	1409				
Rate (ml/min)	100	100	100	100	100	100	100	100	100					
Depth to Water (ft. TOC)	28.01	28.10	28.15	28.19	28.21	28.21	28.30	28.35	28.36					
Temperature (°C)	18.89	17.90	17.15	16.79	16.55	16.49	16.30	16.28	16.17					
pH	7.35	7.34	7.33	7.32	7.31	7.30	7.28	7.27	7.25					
Conductivity (mS/cm)	0.931	0.951	0.967	0.971	0.974	0.974	0.971	0.971	0.967					
Dissolved Oxygen (mg/L)	10.01	4.31	3.94	3.75	3.59	3.48	3.27	3.15	3.03					
Turbidity (NTU)	2.3	2.4	2.3	2.5	2.3	2.1	2.4	1.7	1.7					
ORP (mV)	217	227	234	238	241	243	246	247	248					

SAMPLE INFORMATION

Sample List:			
Diss. Chromium & Vanadium ☒	Sample ID: AW-B4-20190618	Duplicate ID:	
Diss. Hexavalent Chromium ☒	Start Time: 1408	Sample Time:	
Total Cyanide ☒	End Time: 1433	Total Bottles:	
Free Cyanide ☐	MS/MSD: Yes ☐ No ☒	Sampled By:	
Total Dissolved Solids ☐	Duplicate: Yes ☐ No ☒	MS/MSD ID:	
Hardness ☐	Total Bottles: 3	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By: KF	Total Bottles:	
		Sampled By:	

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

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GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M.	Well ID:	AW-C11	
Date: 6/18/19	Original Install Depth:	158.C	feet
Weather: 60's Overcast	Screen Length:	10	feet
Time In: 1330 Time Out: 1600	Well Diameter:	2	inches

WELL INFORMATION

6/18

Depth to Water (from TOC):	(feet)	41.38	Well Type:	Flushmount ☒ Stick-Up ☐
Depth to Water(From TOC) With Pump in place:	(feet)	41.48	Well Locked:	Yes ☐ No ☒
Total Depth (from TOC):	(feet)	158.31	Measuring Point Marked:	Yes ☒ No ☐
Length of Water Column :	(feet)	116.93	Well Condition:	Good ☒ Poor ☐
			Well Condition Comments:	

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	19.06
Pumping Rate of Pump:	(mL/min)	170 → 130 (1406)
Total Volume Removed:	(mL or gal)	3

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: Bladder Pump 1451 Pump Size: 1.75" Depth of Pump Intake: 155.31

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 UWHTANNW

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☐

Final Depth to Water (prior to turning off pump): 41.41

Barometric Pressure (At time of sampling) in mm/Hg: 754.319

FIELD PARAMETER READINGS:

Time	1341 *	1343	1345	1347	1349	1351	1356	1401	1406 △	1411	1432 □	1442 ◇	1447	1452
Rate (ml/min)	170	170	170	170	170	170	170	170	130	130	130	130	130	130
Depth to Water (ft. TOC)		41.45	41.36	41.38	41.38	41.39	41.39	41.39	41.39	41.36	41.40	41.40	41.39	41.41
Temperature (°C)	25.99	21.21	18.60	17.37	16.34	15.74	15.22	15.14	15.66	16.15	18.03	14.76	13.75	13.68
pH	8.14	8.20	8.23	7.81	6.60	6.50	6.51	6.53	6.61	6.65	6.91	6.85	6.78	6.73
Conductivity (mS/cm)	0.739	0.895	0.865	0.884	1.14	1.53	1.61	1.56	1.45	1.41	1.05	1.28	1.27	1.27
Dissolved Oxygen (mg/L)		14.72	18.36	18.24	9.05	4.95	1.67	0.92	0.55	0.44	0.41	0.00	0.00	0.00
Turbidity (NTU)		17.3	20.9	95.8	128	130	127	116	111	73.9	41.9	42.8	31.0	11.6
ORP (mV)		105	105	-28	-57	-57	-56	-54	-57	-60	-4	9	20	40

SAMPLE INFORMATION

Sample List:			
Diss. Chromium & Vanadium ☒	Sample ID: AW-C11_20190618	Duplicate ID:	
Diss. Hexavalent Chromium ☒	Start Time: 1520	Sample Time:	
Total Cyanide ☒	End Time: 1542	Total Bottles:	
Free Cyanide ☐	MS/MSD: Yes ☒ No ☐	Sampled By: M	
Total Dissolved Solids ☐	Duplicate: Yes ☐ No ☒	MS/MSD ID: AW-C11_20190618	
Hardness ☐	Total Bottles: 3+2	Sample Time: 1520	
VOCs (Dichlorobenzenes) ☐	Sampled By: M	Total Bottles: 3	
		Sampled By: M	

Observations (water color, clarity, etc.):

* IP issues distracted readings 1341

△ Change back pack tank 1406

□ Clean HORIBA due to turbidity 1413 and needs Back pack tank replacement

◇ Change backpack tank 1435

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
±0.1	±10%	±10%, <10NTU	±3%	±10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M.	Well ID:	AW-C11	
Date: 6/18/19	Original Install Depth:	158.0	feet
Weather: 60's overcast	Screen Length:	10	feet
Time In: 1530 Time Out: 1600	Well Diameter:	2	inches

WELL INFORMATION

		6/18
Depth to Water (from TOC):	(feet)	41.38
Depth to Water(From TOC) With Pump in place:	(feet)	41.48
Total Depth (from TOC):	(feet)	158.31
Length of Water Column :	(feet)	116.93

Well Type:	Flushmount ☒	Stick-Up ☐
Well Locked:	Yes ☐	No ☒
Measuring Point Marked:	Yes ☒	No ☐
Well Condition:	Good ☒	Poor ☐
Well Condition Comments:		

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	19.06
Pumping Rate of Pump:	(mL/min)	170/130
Total Volume Removed:	(mL or gal)	3

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: Bladder Pump 19341 Pump Size: 1.75" Depth of Pump Intake: 153.31

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 Horiba UENUTANNW

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☒ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 41.41

Barometric Pressure (At time of sampling) in mm/Hg: 754.319

FIELD PARAMETER READINGS:

Time	1457	1502	1507	1512	1517								
Rate (ml/min)	130	130	130	130	130								
Depth to Water (ft. TOC)	41.41	41.40	41.41	41.42	41.42								
Temperature (°C)	13.62	13.61	13.49	13.46	13.46								
pH	6.76	6.74	6.63	6.61	6.60								
Conductivity (mS/cm)	1.28	1.29	1.29	1.29	1.29								
Dissolved Oxygen (mg/L)	0.00	0.00	0.00	0.00	0.00								
Turbidity (NTU)	6.6	5.5	4.9	4.8	4.7								
ORP (mV)	56	59	77	79	73								

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & Vanadium ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: AW-C11_20190618
Start Time: 1520
End Time: 1542
MS/MSD: Yes ☒ No ☐
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: CM

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID: AW-C11_20190618
Sample Time: 1520
Total Bottles: 3
Sampled By: CM

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Haley Brown	Well ID:	EWBS		
Date: 6/18/19	Original Install Depth:	51.8	feet	
Weather: 60's Overcast	Screen Length:	15.8	feet	
Time In: ~~1400~~ 1408 Time Out: 1434	Well Diameter:	8"	inches	

WELL INFORMATION

		6/18					
Depth to Water (from TOC):	(feet)	47.89	Well Type:	Flushmount ☐	Stick-Up ☐	Vault	
Depth to Water(From TOC) With Pump in place:	(feet)	NA	Well Locked:	Yes ☒	No ☐		
Total Depth (from TOC):	(feet)	54.03	Measuring Point Marked:	Yes ☒	No ☐		
Length of Water Column :	(feet)	11.94	Well Condition:	Good ☒	Poor ☐		
			Well Condition Comments:				

WELL WATER INFORMATION / **EVACUATION INFORMATION**

Volume of Water in Well:	(mL or gal)	NA		Pump ID: NA	Pump Size: ~~2"~~ 1"	Depth of Pump Intake: NA		
Pumping Rate of Pump:	(mL/min)	NA		Evacuation Method:	Bailer ☒	Peristaltic ☐	Bladder ☐	Other ☐
Total Volume Removed:	(mL or gal)	Grab		Tubing Used:	Teflon ☐	Polyethylene ☐	N/A ☒	
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number): Horiba U-52 U0634 PHP				
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method:	Bailer ☒	Peristaltic ☐	Bladder ☐	Other ☐
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry?	Yes ☐	No ☒		
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump): 46.20				
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg: 754.574				

FIELD PARAMETER READINGS:

Time	1410												
Rate (ml/min)	NA												
Depth to Water (ft. TOC)	46.26												
Temperature (°C)	17.42												
pH	18.16												
Conductivity (mS/cm)	2.54												
Dissolved Oxygen (mg/L)	14.88												
Turbidity (NTU)	0.0												
ORP (mV)	302												

SAMPLE INFORMATION

Sample List:			
Diss. Chromium & Vanadium ☒	Sample ID: EW-BS-20190618-1415	Duplicate ID: DUP 20190618 ~~Dup-D-20190618~~	Observations (water color, clarity, etc.): Grab
Diss. Hexavalent Chromium ☒	Start Time: 1415	Sample Time: 141	
Total Cyanide ☒	End Time: 1430	Total Bottles: 3	
Free Cyanide ☐	MS/MSD: Yes ☐ No ☒	Sampled By: HB	
Total Dissolved Solids ☐	Duplicate: Yes ☒ No ☐	~~MS/MSD ID:~~	Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) NA
Hardness ☐	Total Bottles: 5	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By: HB	Total Bottles:	
		Sampled By:	

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Haley Brown	Well ID:	MW-0B14	
Date: 6/18/19	Original Install Depth:	18	feet
Weather: 60's Overcast	Screen Length:	10	feet
Time In: 9:30 Time Out: 1210	Well Diameter:	2"	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	6/18 10.61	Well Type:	Flushmount	☒	Stick-Up	☐
Depth to Water(From TOC) With Pump in place:	(feet)	10.60	Well Locked:	Yes	☒	No	☐
Total Depth (from TOC):	(feet)	19.19	Measuring Point Marked:	Yes	☒	No	☐
Length of Water Column :	(feet)	8.58	Well Condition:	Good	☒	Poor	☐
			Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1.399 gal
Pumping Rate of Pump:	(mL/min)	100 ml/min
Total Volume Removed:	(mL or gal)	2 gal

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4068 Pump Size: 3/8 x 1/4" Depth of Pump Intake: 14.90

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U52 V0G4JPHP

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 13.45

Barometric Pressure (At time of sampling) in mm/Hg: 755.674

FIELD PARAMETER READINGS:

Time	952	954	956	958	1000	1002	1007	1012	1017	1022	1027	1032	1037	1042
Rate (ml/min)	150	150	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft, TOC)	11.95	12.27	12.41	12.61	12.69	12.76	12.93	13.00	13.08	13.15	13.20	13.22	13.28	13.33
Temperature (°C)	18.28	16.17	17.13	18.17	17.01	17.25	17.07	16.66	16.34	16.05	16.03	16.02	15.62	15.88
pH	0.198	7.63	7.86	7.98	8.05	8.13	8.20	8.27	8.32	8.39	8.48	8.59	8.67	8.77
Conductivity (mS/cm)	0.204	0.200	0.183	0.179	0.186	0.185	0.198	0.208	0.215	0.223	0.228	0.232	0.236	0.241
Dissolved Oxygen (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turbidity (NTU)	19.3	18.6	22.8	25.1	17.4	16.9	10.7	8.1	7.0	5.0	5.0	3.9	4.8	3.5
ORP (mV)	221	193	182	180	175	167	156	138	111	79	50	29	25	29

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID:	MW-0B14_20190618	Duplicate ID:	
Start Time:	1133	Sample Time:	
End Time:	1200	Total Bottles:	
MS/MSD:	Yes ☐ No ☒	Sampled By:	
Duplicate:	Yes ☐ No ☒	MS/MSD ID:	
Total Bottles:	5	Sample Time:	
Sampled By:	Haley Brown	Total Bottles:	
		Sampled By:	

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Garrett C. Haley B.	Well ID:	MW-0014	
Date: 6/18/19	Original Install Depth:	HB ~~13~~ 18	feet
Weather: 70s Sunny	Screen Length:	HB ~~13~~ 10	feet
Time In: 1015 Time Out: 1215	Well Diameter:	2"	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	HB ~~7.76~~ 6/18 10.61	Well Type:	Flushmount [X]	Stick-Up [ ]
Depth to Water(From TOC) With Pump in place:	(feet)	10.60	Well Locked:	Yes [X]	No [ ]
Total Depth (from TOC):	(feet)	HB ~~9.65~~ 19.19	Measuring Point Marked:	Yes [X]	No [ ]
Length of Water Column :	(feet)	HB ~~1.89~~ 8.58	Well Condition:	Good [X]	Poor [ ]
			Well Condition Comments:		

WELL WATER INFORMATION				EVACUATION INFORMATION	
Volume of Water in Well:	(mL or gal)	1.399 gal		Pump ID: 4068	Pump Size: ~~NA~~ HB 3/8 + 1/4" Depth of Pump Intake: ~~8.17~~ 14.90 HB
Pumping Rate of Pump:	(mL/min)	100 ml/min		Evacuation Method:	Bailer [ ] Peristaltic [X] Bladder ~~[X]~~ HB Other [ ]
Total Volume Removed:	(mL or gal)	2 gal		Tubing Used:	Teflon [ ] Polyethylene [X] N/A [ ]
Volume Measurements	(gal)	(ml)	Tubing/Well Size	Water Quality Meter (type/Serial Number):	Horiba U-52 0064 JPHP
Tubing Volume per foot	0.003	11.36	1/4" ID tubing	Sampling Method:	Bailer [ ] Peristaltic [X] Bladder ~~[X]~~ HB Other [ ]
Well Volume per foot	0.041	155.18	1" diam. well	Did well go dry?	Yes [ ] No [X]
	0.163	616.95	2" diam. well	Final Depth to Water (prior to turning off pump):	13.45
	0.653	2,471.60	4" diam. well	Barometric Pressure (At time of sampling) in mm/Hg:	755.674

FIELD PARAMETER READINGS:

Time	1047	1052	1057	1102	1107	1112	1117	1122	1127	1132				
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100				
Depth to Water (ft. TOC)	13.33	13.31	13.33	13.35	13.36	13.39	13.34	13.34	13.40	13.40				
Temperature (°C)	15.74	15.83	15.90	15.57	15.81	15.84	15.80	15.69	15.74	15.89				
pH	8.92	9.04	9.07	9.15	9.19	9.24	9.28	9.32	9.37	9.37				
Conductivity (mS/cm)	0.246	0.250	0.247	0.253	0.256	0.254	0.264	0.265	0.267	0.264				
Dissolved Oxygen (mg/L)	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Turbidity (NTU)	3.4	3.0	3.7	3.2	2.7	2	2.2	2.0	2.1	2.7				
ORP (mV)	38	52	63	80	93	104	115	124	131	134				

SAMPLE INFORMATION

Sample List:			
Diss. Chromium & ~~Cyanide~~ [X]	Sample ID: MWOB14 20190618	Duplicate ID:	
Diss. Hexavalent Chromium [X]	Start Time: 1133	Sample Time:	
Total Cyanide [X]	End Time: ~~11~~ 1200	Total Bottles:	
Free Cyanide [ ]	MS/MSD: Yes [ ] No [X]	Sampled By:	
Total Dissolved Solids [ ]	Duplicate: Yes [ ] No [X]	MS/MSD ID:	
Hardness [ ]	Total Bottles: 5	Sample Time:	
VOCs (Dichlorobenzenes) [ ]	Sampled By: Haley Brown	Total Bottles:	
		Sampled By:	

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

Page ~~1~~ 2/2 HB

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GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M.	Well ID:	MW-OB17	
Date: 6/17/19	Original Install Depth:	11	feet
Weather: 6/17/19	Screen Length:	6	feet
Time In: 1400 Time Out: 1530	Well Diameter:	2	inches

WELL INFORMATION 6/17

Depth to Water (from TOC):	(feet)	7.84	Well Type:	Flushmount ☐	Stick-Up ☒	
Depth to Water(From TOC) With Pump in place:	(feet)	7.67	Well Locked:	Yes ☒	No ☐	
Total Depth (from TOC):	(feet)	13.81	Measuring Point Marked:	Yes ☒	No ☐	
Length of Water Column :	(feet)	5.97	Well Condition:	Good ☒	Poor ☐	
			Well Condition Comments:			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.97	
Pumping Rate of Pump:	(ml/min)	150	
Total Volume Removed:	(mL or gal)	1.5	
Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4068 Pump Size: 3/8x1/4" Depth of Pump Intake: 10.83

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-52 UWHTANNW

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 7.68

Barometric Pressure (At time of sampling) in mm/Hg: 756.328

FIELD PARAMETER READINGS:

Time	1427	1429	1431	1433	1435	1437	1443	1447	1453	~~1507~~ 1457*	1503	1507	1513	1517
Rate (ml/min)	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TOC)	7.69	7.69	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68
Temperature (°C)	22.06	21.25	20.16	20.10	20.08	20.00	19.66	19.47	18.94	18.87	20.16	20.37	20.38	20.33
pH	7.40	7.06	7.00	6.96	6.93	6.92	6.95	6.97	6.95	6.97	7.08	7.03	6.99	6.98
Conductivity (mS/cm)	0.163	0.164	0.165	0.166	0.165	0.165	0.165	0.165	0.166	0.166	0.163	0.161	0.161	0.161
Dissolved Oxygen (mg/L)	2.17	2.02	2.16	2.09	2.10	2.07	1.96	1.86	1.85	1.74	1.83	1.65	1.66	1.69
Turbidity (NTU)	24.7	22.4	18.6	18.4	22.8	24.7	22.6	24.6	21.7	20.8	0.0	0.0	0.0	0.0
ORP (mV)	114	133	141	150	157	164	173	184	192	197	195	201	208	211

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & Vanadium ☐
- Diss. Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB17.20190617

Start Time: 1520

End Time: 1524

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 1

Sampled By: CM

~~Duplicate ID:~~

Sample Time:

Total Bottles:

Sampled By:

~~MS/MSD ID:~~

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

*1500 open and clean HORIBA due to high turbidity.

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody Murphy	Well ID:	MW-OB18	
Date: 06/17/19	Original Install Depth:	9	feet
Weather:	Screen Length:	5	feet
Time In: 1645 Time Out: 1810	Well Diameter:	2"	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	6/17 9.45	Well Type:	Flushmount ☐	Stick-Up ☒	
Depth to Water(From TOC) With Pump in place:	(feet)	9.50	Well Locked:	Yes ☒	No ☐	
Total Depth (from TOC):	(feet)	12.55	Measuring Point Marked:	Yes ☒	No ☐	
Length of Water Column :	(feet)	3.10	Well Condition:	Good ☒	Poor ☐	
			Well Condition Comments:			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.51
Pumping Rate of Pump:	(mL/min)	135
Total Volume Removed:	(mL or gal)	2

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION 4068

Pump ID: 4068 Geopump Pump Size: 3/8" x 1/4" Depth of Pump Intake: 11.00

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): HORIBA U-52 UWHTANNW

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 11.51

Barometric Pressure (At time of sampling) in mm/Hg: 755.464

FIELD PARAMETER READINGS:

Time	1700 ~~1700~~	1702 ~~1702~~	1704 ~~1704~~	1706 ~~1706~~	1708 ~~1808~~	1710 ~~1810~~	1715 ~~1815~~	1720 ~~1820~~	* 1725 ~~1805~~	1730 ~~1830~~	1735 ~~1835~~	1740 ~~1840~~	CM	
Rate (ml/min)	135	135	135	135	135	135	135	135	135	135	135	135		
Depth to Water (ft. TOC)	10.08	10.18	10.25	10.31	10.38	10.42	10.60	10.78	10.89	11.02	11.21	11.37		
Temperature (°C)	21.44	19.86	19.47	18.80	18.55	18.42	18.27	19.97	20.73	20.88	20.95	21.21		
pH	7.18	7.11	7.08	7.05	7.04	7.04	7.03	7.03	7.06	7.10	7.11	7.13		
Conductivity (mS/cm)	0.363	0.373	0.374	0.378	0.381	0.382	0.390	0.396	0.385	0.392	0.388	0.391		
Dissolved Oxygen (mg/L)	1.33	1.35	1.35	1.42	1.24	1.16	0.94	0.33	0.13	0.33	0.21	0.16		
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
ORP (mV)	228	249	254	259	262	263	267	257	245	253	257	254		

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & Vanadium ☐
- Diss. Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB18-20190617
Start Time: 1744
End Time: 1755
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 1
Sampled By: CM

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

* lower pump intake to 11.5' BTOC to avoid going dry

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

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GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn Foster ; Haley Brown	Well ID:	MW-08A	
Date: 6/17/19	Original Install Depth:	9	feet
Weather: Sunny 70's	Screen Length:	5	feet
Time In: ~~[illegible]~~ 1556 (HB) Time Out: 1640	Well Diameter:	2"	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	7.96
Depth to Water(From TOC) With Pump in place:	(feet)	7.97
Total Depth (from TOC):	(feet)	9.63
Length of Water Column :	(feet)	1.67

Well Type: Flushmount ☐ Stick-Up ☒

Well Locked: Yes ☒ No ☐

Measuring Point Marked: Yes ☒ No ☐

Well Condition: Good ☒ Poor ☐

Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.27
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	1.50

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: H16004655 Pump Size: 1/4" x 3/8" Depth of Pump Intake: 8.70

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 / FLONHHDHD

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☒ No ☐

Final Depth to Water (prior to turning off pump): DRY

Barometric Pressure (At time of sampling) in mm/Hg: NS

FIELD PARAMETER READINGS:

	1600 (HB)	T2	T3	T4	T5	T6								
Time	~~[illegible]~~	1602	1604	1606	1608	1610	1615	1620	1625	1630	1635	1637		
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	DRY		
Depth to Water (ft. TOC)	8.27	8.41	8.51	8.61	8.72	8.81	9.05	9.26	9.40	9.50	9.50			
Temperature (°C)	19.39	17.64	17.17	16.90	16.63	16.41	16.09	15.73	15.32	15.06	15.42			
pH	6.93	6.82	6.76	6.74	6.73	6.73	6.73	6.71	6.65	6.54	6.38			
Conductivity (mS/cm)	0.406	0.415	0.425	0.427	0.419	0.415	0.400	0.395	0.396	0.403	0.410			
Dissolved Oxygen (mg/L)	2.23	1.66	1.30	1.08	0.94	0.88	0.73	0.60	0.56	0.63	3.88			
Turbidity (NTU)	25.4	19.6	9.5	4.6	2.9	2.0	0.2	0.0	0.0	0.2	7.3			
ORP (mV)	99	-33	-67	-77	-78	-79	-71	-57	14	178	222			

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & Vanadium ☐
- Diss. Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: NS

Start Time: NS

End Time: NS

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: NS

Sampled By: NS

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

Dry @ 1637

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

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GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M.	Well ID:	MW-08	
Date: 6/18/19	Original Install Depth:	10	feet
Weather: Sunny 70s	Screen Length:	5	feet
Time In: 1600 Time Out: 1700	Well Diameter:	2	inches

		6/17	6/18
Depth to Water (from TOC):	(feet)	7.96	7.95
Depth to Water(From TOC) With Pump in place:	(feet)	7.94	
Total Depth (from TOC):	(feet)	9.63	
Length of Water Column :	(feet)	1.68	

WELL INFORMATION

Well Type:	Flushmount	☐	Stick-Up	☒
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐

Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.27
Pumping Rate of Pump:	(mL/min)	125
Total Volume Removed:	(mL or gal)	Grab

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Pump Size: 3/8 x 1/4 Depth of Pump Intake: 8.79

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-52 UWHTANNW

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 8.30

Barometric Pressure (At time of sampling) in mm/Hg: 753.787

FIELD PARAMETER READINGS:

Time	1641												
Rate (ml/min)	125												
Depth to Water (ft. TOC)	8.35												
Temperature (°C)	20.45												
pH	7.31												
Conductivity (mS/cm)	0.294												
Dissolved Oxygen (mg/L)	2.82												
Turbidity (NTU)	4.1												
ORP (mV)	225												

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & Vanadium ☐
- Diss. Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-08_20190618

Start Time: 1645

End Time: 1650

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 1

Sampled By: CM

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

Grab

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

Page 1 of 1

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Katelyn Haley	Well ID:	MW-OB20	
Date:	6/17/19	Original Install Depth:	8.5	feet
Weather:	70's Sunny	Screen Length:	4	feet
Time In: 1430	Time Out: 1527	Well Diameter:	2	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	9.89	Well Type:	Flushmount ☐	Stick-Up ☒	
Depth to Water(From TOC) With Pump in place:	(feet)	9.92	Well Locked:	Yes ☒	No ☐	
Total Depth (from TOC):	(feet)	10.44	Measuring Point Marked:	Yes ☒	No ☐	
Length of Water Column :	(feet)	0.55	Well Condition:	Good ☒	Poor ☐	
			Well Condition Comments:			

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.09
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	2.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: HL004055 Pump Size: 1/4"x3/8" Depth of Pump Intake: 10.17

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52/FLPN4H0H0

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 10.03

Barometric Pressure (At time of sampling) in mm/Hg: 756.153

FIELD PARAMETER READINGS:

	T0	T1	T2	T3	T4	~~T5~~			HB				HB	
Time	1436	1438	1440	1442	1444	1446	1451	1456	~~14~~1501	1506	1511	1516	~~1520~~	
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100		
Depth to Water (ft. TOC)	9.92	9.99	10.00	10.01	10.02	10.03	10.03	10.03	10.03	10.03	10.03	10.03		
Temperature (°C)	22.49	17.15	16.20	15.97	15.65	15.52	15.11	15.18	15.14	15.01	14.75	15.01		
pH	7.25	7.02	7.00	6.99	6.97	6.98	6.87	6.84	6.81	6.77	6.78	6.80		
Conductivity (mS/cm)	0.417	0.457	0.472	0.490	0.516	0.543	0.597	0.625	0.643	0.656	0.664	0.673		
Dissolved Oxygen (mg/L)	8.55	8.97	8.70	8.35	8.26	8.17	7.94	7.82	7.66	8.14	7.59	7.52		
Turbidity (NTU)	5.3	1.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
ORP (mV)	67	98	109	121	130	137	154	164	172	178	181	182		

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & Vanadium ☐
- Diss. Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB20 20190617

Start Time: 1522

End Time: 1524

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 1

Sampled By: HB/KF

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
±0.1	±10%	±10%, <10NTU	±3%	±10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody Murph	Well ID:	MW-OB21	
Date: 6/17/19	Original Install Depth:	14.5	feet
Weather: Sunny 70's	Screen Length:	10	feet
Time In: 1200 Time Out: 1325	Well Diameter:	2"	Inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	6/17 13.25	Well Type:	Flushmount ☐ Stick-Up ☒
Depth to Water(From TOC) With Pump in place:	(feet)	13.29	Well Locked:	Yes ☒ No ☐
Total Depth (from TOC):	(feet)	16.66	Measuring Point Marked:	Yes ☒ No ☐
Length of Water Column :	(feet)	3.41	Well Condition:	Good ☒ Poor ☐
			Well Condition Comments:	

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.56
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	2

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4068 Geopump Pump Size: 3/8 x 1/4" Depth of Pump Intake: 14.96'

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): HORIBA UWHTANNW U-52

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 15.20

Barometric Pressure (At time of sampling) in mm/Hg: 756.68

FIELD PARAMETER READINGS:

Time	1215	1217	1219	1221	1223	1225	1230	1235	1240	*1245	1250	1255	1300	1305
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	13.58	13.69	13.76	13.83	13.88	13.94	14.16	14.29	14.46	14.53	14.67	14.78	14.87	15.01
Temperature (°C)	22.70	21.48	20.67	19.70	19.43	18.91	18.69	18.03	18.30	18.09	17.77	17.46	17.24	17.02
pH	6.82	6.87	6.90	6.92	6.93	6.94	6.98	6.99	7.00	6.99	6.99	6.99	6.98	6.98
Conductivity (mS/cm)	0.334	0.335	0.333	0.333	0.331	0.326	0.320	0.318	0.313	0.314	0.315	0.315	0.314	0.316
Dissolved Oxygen (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turbidity (NTU)	5.5	4.3	8.2	10.6	11.2	13.7	11.1	10.6	6.5	2.9	2.9	1.9	1.6	2.0
ORP (mV)	98	97	101	106	113	119	109	101	94	45	56	63	70	72

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & Vanadium ☐
- Diss. Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB21_20190617

Start Time: ~~1213~~ / 1305

End Time: ~~1305~~ / 1316

MS/MSD: Yes ☒ No ☐

Duplicate: Yes ☒ No ☐

Total Bottles: 1

Sampled By: CM

Duplicate ID: DUP_20190617

Sample Time: —

Total Bottles: 1

Sampled By: CM

MS/MSD ID: MW-OB21_20190617

Sample Time: 1305

Total Bottles: 1

Sampled By: CM

Observations (water color, clarity, etc.):

*1242 move sampling depth to 15.5' TOC to avoid running dry

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
±0.1	±10%	±10%, <10NTU	±3%	±10 mV

Page 1 of 1

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: ~~Garrett Crowe~~ Katelyn Foster	Well ID:	MW-OB23	
Date: 6/17/19	Original Install Depth:	6.5	feet
Weather: Sunny 70's	Screen Length:	4	feet
Time In: 1210 Time Out: ~~1400~~ 1351	Well Diameter:	2"	inches

WELL INFORMATION

6/17

Depth to Water (from TOC):	(feet)	5.64	Well Type: Flushmount ☐ Stick-Up ☒
Depth to Water(From TOC) With Pump in place:	(feet)	5.65	Well Locked: Yes ☒ No ☐
Total Depth (from TOC):	(feet)	8.43	Measuring Point Marked: Yes ☒ No ☐
Length of Water Column :	(feet)	2.79	Well Condition: Good ☒ Poor ☐
			Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	~~MW-OB23~~ 0.45	
Pumping Rate of Pump:	(mL/min)	100	
Total Volume Removed:	(mL or gal)	5.0	
Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: H16004655 Pump Size: 3/8 x 1/4" Depth of Pump Intake: 7.04

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 / P6NNHH0H0

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 5.89

Barometric Pressure (At time of sampling) in mm/Hg: 756.042

FIELD PARAMETER READINGS:

Time	1214	1216	1218	1220	1222	1224	1229	1234	1239	1244	1249	1254	1259	1304
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	5.75	5.77	5.80	5.80	5.81	5.81	5.82	5.85	5.86	5.86	5.86	5.86	5.87	5.88
Temperature (°C)	21.32	19.34	17.64	17.11	17.08	17.46	17.15	16.87	16.86	17.25	17.22	17.00	17.15	17.27
pH	6.41	6.69	6.71	6.70	6.70	6.70	6.67	6.68	6.68	6.68	6.68	6.67	6.67	6.67
Conductivity (mS/cm)	0.692	0.653	0.648	0.644	0.638	0.632	0.625	0.622	0.612	0.613	0.611	0.607	0.607	0.605
Dissolved Oxygen (mg/L)	8.04	8.01	8.26	8.15	8.23	7.97	7.45	6.91	6.19	5.81	5.04	4.55	4.01	3.66
Turbidity (NTU)	3.8	2.6	2.5	2.5	1.5	0.50	0.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORP (mV)	-17	10	124	42	-15	-71	-84	-92	-92	-90	-88	-89	-88	-84

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & Vanadium ☐
- Diss. Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB23 20190617

Start Time: 1344

End Time: 1349

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 1

Sampled By: KF

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
±0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Kaitelyn Foster	Well ID:	MW-OB23		
Date: 6/17/19	Original Install Depth:	6.5	feet	
Weather: Sunny, 70s°F	Screen Length:	4	feet	
Time In: 1210 Time Out: 1351	Well Diameter:	2"	Inches	

WELL INFORMATION 6/17

Depth to Water (from TOC): (feet)	5.64	Well Type:	Flushmount ☐	Stick-Up ☒
Depth to Water(From TOC) With Pump in place: (feet)	5.65	Well Locked:	Yes ☒	No ☐
Total Depth (from TOC): (feet)	8.43	Measuring Point Marked:	Yes ☒	No ☐
Length of Water Column : (feet)	2.79	Well Condition:	Good ☒	Poor ☐
		Well Condition Comments:		

WELL WATER INFORMATION

Volume of Water in Well: (mL or gal)	0.45
Pumping Rate of Pump: (mL/min)	100
Total Volume Removed: (mL or gal)	5.0

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: H16004655 Pump Size: 3/8" × 1/4" Depth of Pump Intake: 7.04

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 / PLONVHHOHO

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 5.89

Barometric Pressure (At time of sampling) in mm/Hg: 756.042

FIELD PARAMETER READINGS:

Time	1309	1314	1319	1324	1329	1334	1339	1344						
Rate (ml/min)	100	100	100	100	100	100	100							
Depth to Water (ft. TOC)	5.88	5.88	5.88	5.89	5.89	5.89	5.89							
Temperature (°C)	17.31	17.48	17.52	17.45	17.49	17.53	17.50							
pH	6.68	6.69	6.70	6.69	6.68	6.67	6.67							
Conductivity (mS/cm)	0.604	0.605	0.601	0.602	0.599	0.598	0.597							
Dissolved Oxygen (mg/L)	3.31	3.02	2.81	2.65	2.44	2.31	2.22							
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
ORP (mV)	-86	-86	-87	-84	-79	-78	-78							

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & Vanadium ☐
- Diss. Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB23-20190617
Start Time: 1344
End Time: 1349
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 1
Sampled By: KF

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn F.		Well ID:	MW-0825
Date: 6/18/19		Original Install Depth:	10 feet
Weather: 60's Overcast		Screen Length:	5 feet
Time In: 1052	Time Out: 1209	Well Diameter:	2" inches

WELL INFORMATION

		6/18		
Depth to Water (from TOC):	(feet)	8.13	Well Type:	Flushmount [X] Stick-Up [ ]
Depth to Water(From TOC) With Pump in place:	(feet)	8.11	Well Locked:	Yes [X] No [ ]
Total Depth (from TOC):	(feet)	~~11.58~~ 11.38	Measuring Point Marked:	Yes [X] No [ ]
Length of Water Column :	(feet)	~~3.45~~ 3.27	Well Condition:	Good [X] Poor [ ]
			Well Condition Comments:	

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.56
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	2.0

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Pump Size: 3/4" x 1/8" Depth of Pump Intake: ~~9.86~~ 9.78

Evacuation Method: Bailer [ ] Peristaltic [X] Bladder [ ] Other [ ]

Tubing Used: Teflon [ ] Polyethylene [X] N/A [ ]

Water Quality Meter (type/Serial Number): U-52 / PUNHH0H0

Sampling Method: Bailer [ ] Peristaltic [X] Bladder [ ] Other [ ]

Did well go dry? Yes [X] No [ ]

Final Depth to Water (prior to turning off pump): DRY

Barometric Pressure (At time of sampling) in mm/Hg: NS

FIELD PARAMETER READINGS:

	T0	T1	T2	T3	T4	T5								
Time	1103	1105	1107	1109	1111	1113	1118	1123	1128	1133	1138	1143	1148	1153
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	8.51	8.57	8.62	8.72	8.77	8.80	8.99	9.20	9.44	9.79	10.00	10.31	10.65	10.83
Temperature (°C)	15.62	14.97	14.83	14.65	14.65	14.69	14.59	14.52	14.45	14.35	14.40	14.36	14.28	14.29
pH	6.67	6.66	6.67	6.67	6.65	6.64	6.65	6.66	6.68	6.69	6.69	6.67	6.68	6.69
Conductivity (mS/cm)	0.954	0.956	0.951	0.949	0.949	0.946	0.938	0.877	0.815	0.781	0.780	0.824	0.840	0.861
Dissolved Oxygen (mg/L)	7.80	6.74	6.64	6.45	6.40	6.45	6.20	5.49	4.64	4.70	4.97	5.46	5.49	5.49
Turbidity (NTU)	5.1	5.1	3.1	2.3	2.0	2.5	1.0	0.6	0.6	1.1	1.4	0.8	1.8	9.0
ORP (mV)	176	188	203	221	228	237	253	263	268	274	278	280	279	272

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & Vanadium [X]
- Diss. Hexavalent Chromium [X]
- Total Cyanide [X]
- Free Cyanide [ ]
- Total Dissolved Solids [ ]
- Hardness [ ]
- VOCs (Dichlorobenzenes) [ ]

Sample ID: DRY
Start Time:
End Time:
MS/MSD: Yes [ ] No [X]
Duplicate: Yes [ ] No [X]
Total Bottles: 3
Sampled By:

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):
Dropped/lowered tubing @ 1133
water level might exceed pump intake depth

Free Cyanide Sulfide Test Strip: ~~Positive (black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn F.		Well ID:	MW-08S	
Date: 6/18/19		Original Install Depth:	10	feet
Weather: Sunny, 63°F		Screen Length:	5	feet
Time In: 1052	Time Out: 1209	Well Diameter:	2"	Inches

WELL INFORMATION

		6/18					
Depth to Water (from TOC):	(feet)	8.13	Well Type:	Flushmount	☒	Stick-Up	☐
Depth to Water(From TOC) With Pump in place:	(feet)	8.11	Well Locked:	Yes	☒	No	☐
Total Depth (from TOC):	(feet)	11.38	Measuring Point Marked:	Yes	☒	No	☐
Length of Water Column :	(feet)	3.~~25~~ 27	Well Condition:	Good	☒	Poor	☐
			Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.56
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	2.0

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Pump Size: 3/8" x 1/4" Depth of Pump Intake: 9.78

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52/P6NHHDHD

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☒ No ☐

Final Depth to Water (prior to turning off pump): DRY

Barometric Pressure (At time of sampling) in mm/Hg: NS

FIELD PARAMETER READINGS:

Time	1158	1203	1208										
Rate (ml/min)	100												
Depth to Water (ft. TOC)	10.95												
Temperature (°C)	14.76												
pH	6.70												
Conductivity (mS/cm)	0.870												
Dissolved Oxygen (mg/L)	6.19												
Turbidity (NTU)	11.8												
ORP (mV)	261												

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & Vanadium ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: DRY

Start Time:

End Time:

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 3

Sampled By:

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG
Ashland Glens Falls, NY
Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Cody M.	Well ID:	MW-0B25		
Date: 06/19/19	Original Install Depth:	10	feet	
Weather: 60's overcast	Screen Length:	5	feet	
Time In: 830 Time Out: 1000	Well Diameter:	2"	inches	

WELL INFORMATION

		6/18	6/19
Depth to Water (from TOC):	(feet)	8.13	8.09
Depth to Water(From TOC) With Pump in place:	(feet)		8.09
Total Depth (from TOC):	(feet)	11.58	11.58
Length of Water Column :	(feet)	3.49	

Well Type:	Flushmount	☒	Stick-Up	☐
Well Locked:	Yes	☐	No	☒
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	~~0.50~~ 0.57
Pumping Rate of Pump:	(mL/min)	130
Total Volume Removed:	(mL or gal)	0.50

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4063 Pump Size: 3/8x1/4" Depth of Pump Intake: ~~9.84~~ 9.64

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): HORIBA U-52 V:GHJFHF

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 8.75

Barometric Pressure (At time of sampling) in mm/Hg: 752.668

FIELD PARAMETER READINGS:

Time	945												
Rate (ml/min)	130												
Depth to Water (ft. TOC)	8.33												
Temperature (°C)	17.16												
pH	6.43												
Conductivity (mS/cm)	0.767												
Dissolved Oxygen (mg/L)	17.47												
Turbidity (NTU)	0.0												
ORP (mV)	284												

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & Vanadium ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-0B25_20190619
Start Time: 935
End Time: 945
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: CM

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn		Well ID:	MW-08D	
Date: 6/18/19		Original Install Depth:	14	feet
Weather: 60's Overcast		Screen Length:	5	feet
Time In: 0940	Time Out: 1028	Well Diameter:	2"	inches

WELL INFORMATION 6/18

Depth to Water (from TOC):	(feet)	10.16	
Depth to Water(From TOC) With Pump in place:	(feet)	~~10.15~~ 10.11	
Total Depth (from TOC):	(feet)	~~16.69~~ 17.69	
Length of Water Column :	(feet)	~~6.53~~ 7.53	

Well Type:	Flushmount ☒	Stick-Up ☐		
Well Locked:	Yes ☒	No ☐		
Measuring Point Marked:	Yes ☒	No ☐		
Well Condition:	Good ☒	Poor ☐		
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	~~1.06~~ 1.22
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	1.20

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Pump Size: 3/8" x 1/4" Depth of Pump Intake: ~~13.43~~ 14.19

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52 / PUNHH0H0

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☒ No ☐

Final Depth to Water (prior to turning off pump): DRY

Barometric Pressure (At time of sampling) in mm/Hg: NS

FIELD PARAMETER READINGS:

	T0	T1	T2	T3	T4	T5								
Time	0948	0950	0952	0954	0956	0958	1003	1008	1013	1018	1023	1028		
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100				
Depth to Water (ft. TOC)	11.19	11.45	11.91	12.31	12.80	13.23	14.20	15.41	16.47	17.50				
Temperature (°C)	18.10	17.52	16.67	15.79	14.40	14.10	13.72	13.31	13.15	12.68				
pH	6.66	7.43	7.69	7.78	7.75	7.82	7.71	7.68	7.70	7.63				
Conductivity (mS/cm)	1.07	1.06	1.04	1.04	1.06	1.06	1.06	1.06	1.06	1.06				
Dissolved Oxygen (mg/L)	2.48	1.95	1.63	1.86	2.15	2.48	2.82	1.51	1.00	3.24				
Turbidity (NTU)	2.4	3.2	2.4	2.2	2.6	2.6	2.4	2.6	3.0	2.4				
ORP (mV)	92	112	139	153	177	189	213	224	228	230				

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & Vanadium ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: DRY
Start Time:
End Time:
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles:
Sampled By:

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.):

Dropped tubing @ 1003 - water level @ pump intake depth

Dry @ 1022

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
±0.1	±10%	±10%, <10NTU	±3%	±10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Katelyn	Well ID:	MW-OB26	
Date: 6/19/19	Original Install Depth:	19	feet
Weather: 60's overcast	Screen Length:	5	feet
Time In: 0913 Time Out: 0942	Well Diameter:	2"	inches

		6/18	6/19
Depth to Water (from TOC):	(feet)	10.16	13.80
Depth to Water(From TOC) With Pump in place:	(feet)	13.75	
Total Depth (from TOC):	(feet)	16.69	
Length of Water Column :	(feet)	~~2.89~~ ~~2.84~~ 2.89	

WELL INFORMATION

Well Type:	Flushmount	☒	Stick-Up	☐
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Condition:	Good	☒	Poor	☐
Well Condition Comments:				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.47
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	<1.00

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Pump Size: 3/8 x 1/4" Depth of Pump Intake: ~~15.29~~ 15.35

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): U-52/ P6WHH0H0

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 16.38

Barometric Pressure (At time of sampling) in mm/Hg: 752.668

FIELD PARAMETER READINGS:

Time	0923													
Rate (ml/min)	100													
Depth to Water (ft. TOC)	14.00													
Temperature (°C)	17.80													
pH	7.18													
Conductivity (mS/cm)	1.07													
Dissolved Oxygen (mg/L)	12.82													
Turbidity (NTU)	2.7													
ORP (mV)	212													

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & ~~Vanadium~~ ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: MW-OB26-20190619
Start Time: 0925
End Time: 0934
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 3
Sampled By: KF/HB

Duplicate ID:
Sample Time:
Total Bottles:
Sampled By:

MS/MSD ID:
Sample Time:
Total Bottles:
Sampled By:

Observations (water color, clarity, etc.): GRAB

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) N/A

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

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GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Garrett Grover		Well ID:	SG-7	
Date: 6/24/19		Original Install Depth:	NA	feet
Weather: 70's Sunny		Screen Length:	NA	feet
Time In: 1600	Time Out: 1630	Well Diameter:	NA	inches

6/24/19

WELL INFORMATION

Depth to Water (from TOC):	(feet)	NA
Depth to Water(From TOC) With Pump in place:	(feet)	NA
Total Depth (from TOC):	(feet)	.2
Length of Water Column :	(feet)	.2

~~Well Type:~~	Flushmount ☐		Stick-Up ☐	Surface
~~Well Locked:~~	Yes ☐		No ☐	water
~~Measuring Point Marked:~~	Yes ☐		No ☐	Sample
~~Well Condition:~~	Good ☐		Poor ☐	
~~Well Condition Comments:~~				

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	NA
Pumping Rate of Pump:	(mL/min)	NA
Total Volume Removed:	(mL or gal)	.5

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: NA Pump Size: 2" Depth of Pump Intake: NA

Evacuation Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒

Water Quality Meter (type/Serial Number): Horiba U-52 PGNHHOHO

Sampling Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): NA

Barometric Pressure (At time of sampling) in mm/Hg:

FIELD PARAMETER READINGS:

Time	1605												
Rate (ml/min)	—												
Depth to Water (ft. TOC)	.2												
Temperature (°C)	22.22												
pH	7.28												
Conductivity (mS/cm)	1.39												
Dissolved Oxygen (mg/L)	6.01												
Turbidity (NTU)	1.8												
ORP (mV)	130												

SAMPLE INFORMATION

Sample List:
- Diss. Chromium & Vanadium ☐
- Diss. Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☒
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: SG-7-20190624

Start Time: 1615

End Time: 1620

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 2

Sampled By: GC

~~Duplicate ID:~~

~~Sample Time:~~

~~Total Bottles:~~

~~Sampled By:~~

~~MS/MSD ID:~~

~~Sample Time:~~

~~Total Bottles:~~

~~Sampled By:~~

Observations (water color, clarity, etc.):

GRAB – Surface Sample

Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG
Ashland Glens Falls, NY
Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Garrett Crowe	Well ID:	SG-11		
Date: 6/24/14	Original Install Depth:	NA	feet	
Weather: 70's Sunny	Screen Length:	NA	feet	
Time In: 1515 Time Out: 1545	Well Diameter:	NA	inches	

6/24

WELL INFORMATION

Depth to Water (from TOC):	(feet)	NA	Well Type: Flushmount ☐ Stick-Up ☐	Surface water sample
Depth to Water(From TOC) With Pump in place:	(feet)	NA	Well Locked: Yes ☐ No ☐	
Total Depth (from TOC):	(feet)	.3	Measuring Point Marked: Yes ☐ No ☐	
Length of Water Column :	(feet)	.3	Well Condition: Good ☐ Poor ☐	
			Well Condition Comments:	

WELL WATER INFORMATION / **EVACUATION INFORMATION**

Volume of Water in Well:	(mL or gal)	NA	Pump ID: NA Pump Size: 2" Depth of Pump Intake: ~~NA~~ NA
Pumping Rate of Pump:	(mL/min)	NA	Evacuation Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐
Total Volume Removed:	(mL or gal)	NA	Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

Water Quality Meter (type/Serial Number): Horiba V-52 P6NHHOHO
Sampling Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐
Did well go dry? Yes ☐ No ☒
Final Depth to Water (prior to turning off pump): NA
Barometric Pressure (At time of sampling) in mm/Hg:

FIELD PARAMETER READINGS:

Time	1535												
Rate (ml/min)	NA												
Depth to Water (ft. TOC)	.3												
Temperature (°C)	26.07												
pH	6.36												
Conductivity (mS/cm)	0.327												
Dissolved Oxygen (mg/L)	5.93												
Turbidity (NTU)	0.5												
ORP (mV)	~~106~~ 177												

SAMPLE INFORMATION

Sample List:	Sample ID: SG-11_20140624	Duplicate ID: DUP_20140624	Observations (water color, clarity, etc.): GRAB_Surface sample
Diss. Chromium & Vanadium ☐	Start Time: 1536	Sample Time: —	
Diss. Hexavalent Chromium ☐	End Time: 1543	Total Bottles: 2	
Total Cyanide ☒	MS/MSD: Yes ☐ No ☒	Sampled By: GC	
Free Cyanide ☒	Duplicate: Yes ☐ No ☒	MS/MSD ID: SG-11_20140624	Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)
Total Dissolved Solids ☐	Total Bottles: 2	Sample Time: 1536	
Hardness ☐	Sampled By: GC	Total Bottles: 2	
VOCs (Dichlorobenzenes) ☐		Sampled By: GC	

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

55

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Haley Brown	Well ID:	Sump A	
Date: 6/18/19	Original Install Depth:	31.5	feet
Weather: 60's overcast	Screen Length:	NA	feet
Time In: 1345 Time Out: ~~1400~~ HB 6/18 1405	Well Diameter:	NA	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	29.03	Well Type:	Flushmount ☐	Stick-Up ☐	Sump vault
Depth to Water(From TOC) With Pump in place:	(feet)	NA	Well Locked:	Yes ☐	No ☐	
Total Depth (from TOC):	(feet)	[redacted] NA	Measuring Point Marked:	Yes ☐	No ☐	
Length of Water Column :	(feet)	[redacted] NA	Well Condition:	Good ☐	Poor ☐	
			Well Condition Comments:			

WELL WATER INFORMATION

Volume of Water In Well:	(mL or gal)	NA
Pumping Rate of Pump:	(mL/min)	NA
Total Volume Removed:	(mL or gal)	6 gal

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: NA Pump Size: 2" bailer Depth of Pump Intake: NA

Evacuation Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒

Water Quality Meter (type/Serial Number): Horiba U-52 VD64J8HP

Sampling Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 28.87

Barometric Pressure (At time of sampling) in mm/Hg: 754.688

FIELD PARAMETER READINGS:

Time	1348												
Rate (ml/min)	NA												
Depth to Water (ft. TOC)	28.89												
Temperature (°C)	15.44												
pH	8.26												
Conductivity (mS/cm)	0.727												
Dissolved Oxygen (mg/L)	18.36												
Turbidity (NTU)	0.0												
ORP (mV)	303												

SAMPLE INFORMATION

Sample List:				
Diss. Chromium & Vanadium ☒	Sample ID:	SumpA-20190618	Duplicate ID:	
Diss. Hexavalent Chromium ☒	Start Time:	1359	Sample Time:	
Total Cyanide ☒	End Time:	1405	Total Bottles:	
Free Cyanide ☐	MS/MSD:	Yes ☐ No ☒	Sampled By:	
Total Dissolved Solids ☐	Duplicate:	Yes ☐ No ☒	MS/MSD ID:	
Hardness ☐	Total Bottles:	3	Sample Time:	
VOCs (Dichlorobenzenes) ☐	Sampled By:	GC & HB	Total Bottles:	
			Sampled By:	

Observations (water color, clarity, etc.):

Grab Sample

Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV

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GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Haley Brown		Well ID:	Sump-6	
Date: 6/18/19		Original Install Depth:	29.2	feet
Weather: 60's over Cast		Screen Length:	NA	feet
Time In: 1444	Time Out: 1500	Well Diameter:	NA	inches

WELL INFORMATION

Depth to Water (from TOC):	(feet)	6/18 23.70
Depth to Water(From TOC) With Pump in place:	(feet)	NA
Total Depth (from TOC):	(feet)	~~6~~ NA
Length of Water Column :	(feet)	NA

Well Type: Flushmount ☐ Stick-Up ☐ Sump Vault

Well Locked: Yes ☐ No ☐

Measuring Point Marked: Yes ☐ No ☐

Well Condition: Good ☐ Poor ☐

Well Condition Comments:

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	Grab
Pumping Rate of Pump:	(mL/min)	Grab
Total Volume Removed:	(mL or gal)	Grab

Volume Measurements	(gal)	(ml)	Tubing/Well Size
Tubing Volume per foot	0.003	11.36	1/4" ID tubing
Well Volume per foot	0.041	155.18	1" diam. well
	0.163	616.95	2" diam. well
	0.653	2,471.60	4" diam. well

EVACUATION INFORMATION

Pump ID: NA Pump Size: 2" Depth of Pump Intake: NA

Evacuation Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒

Water Quality Meter (type/Serial Number): Horiba U-52 V064JPHP

Sampling Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 24.45

Barometric Pressure (At time of sampling) in mm/Hg: 754.437

FIELD PARAMETER READINGS:

Time	~~1450~~	1450											
Rate (ml/min)	~~N/A~~	N/A											
Depth to Water (ft. TOC)	~~20.22~~	24.48											
Temperature (°C)	~~8.22~~	20.22											
pH	~~0.547~~	8.22											
Conductivity (mS/cm)	HB	0.547											
Dissolved Oxygen (mg/L)		14.34											
Turbidity (NTU)		0.0											
ORP (mV)		285											

SAMPLE INFORMATION

Sample List:

- Diss. Chromium & Vanadium ☒
- Diss. Hexavalent Chromium ☒
- Total Cyanide ☒
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID: SumpB-20190618-1455

Start Time: 1455

End Time: 1500

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 3

Sampled By: HB

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

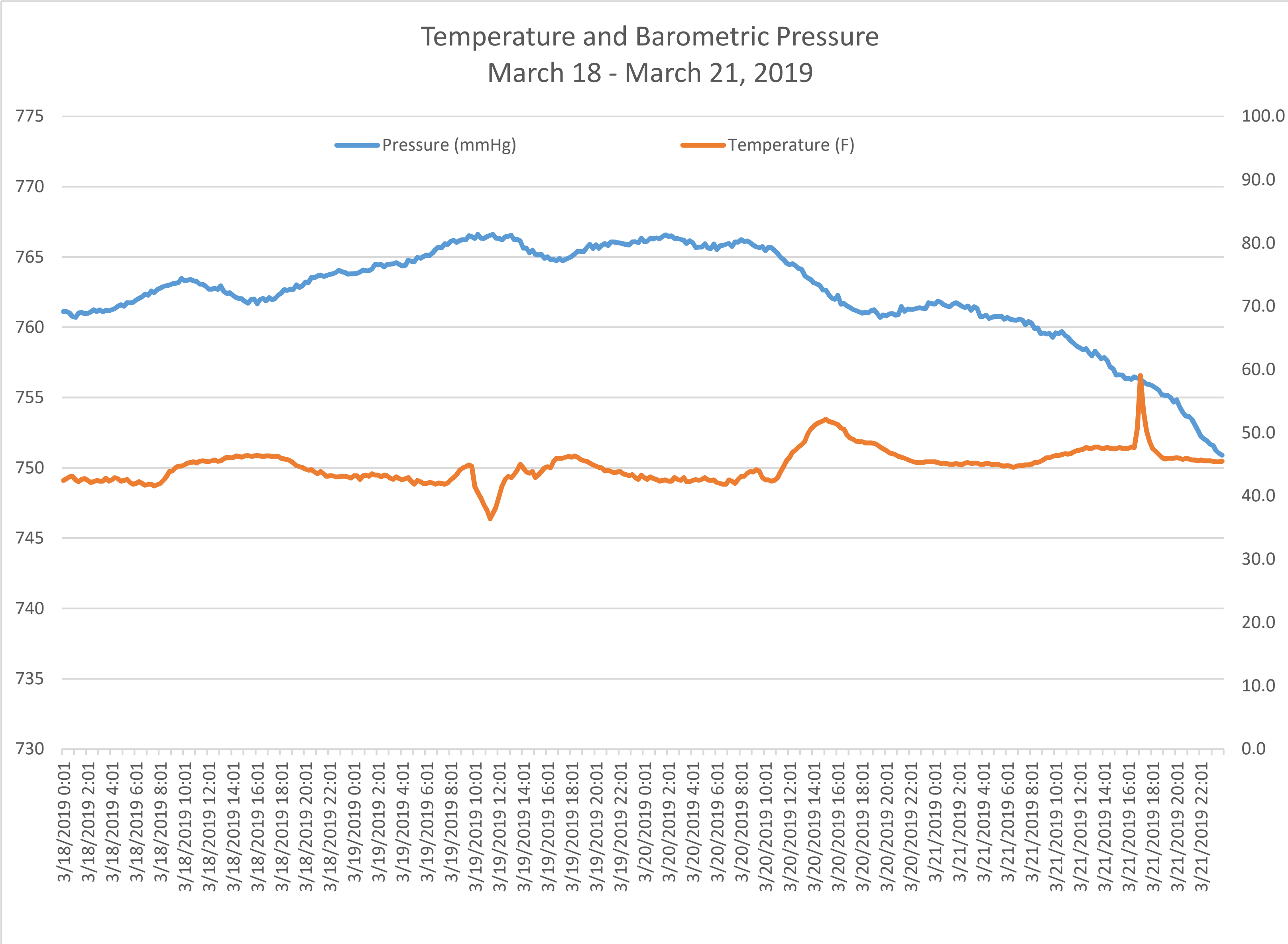
Sampled By:

Observations (water color, clarity, etc.): Grab

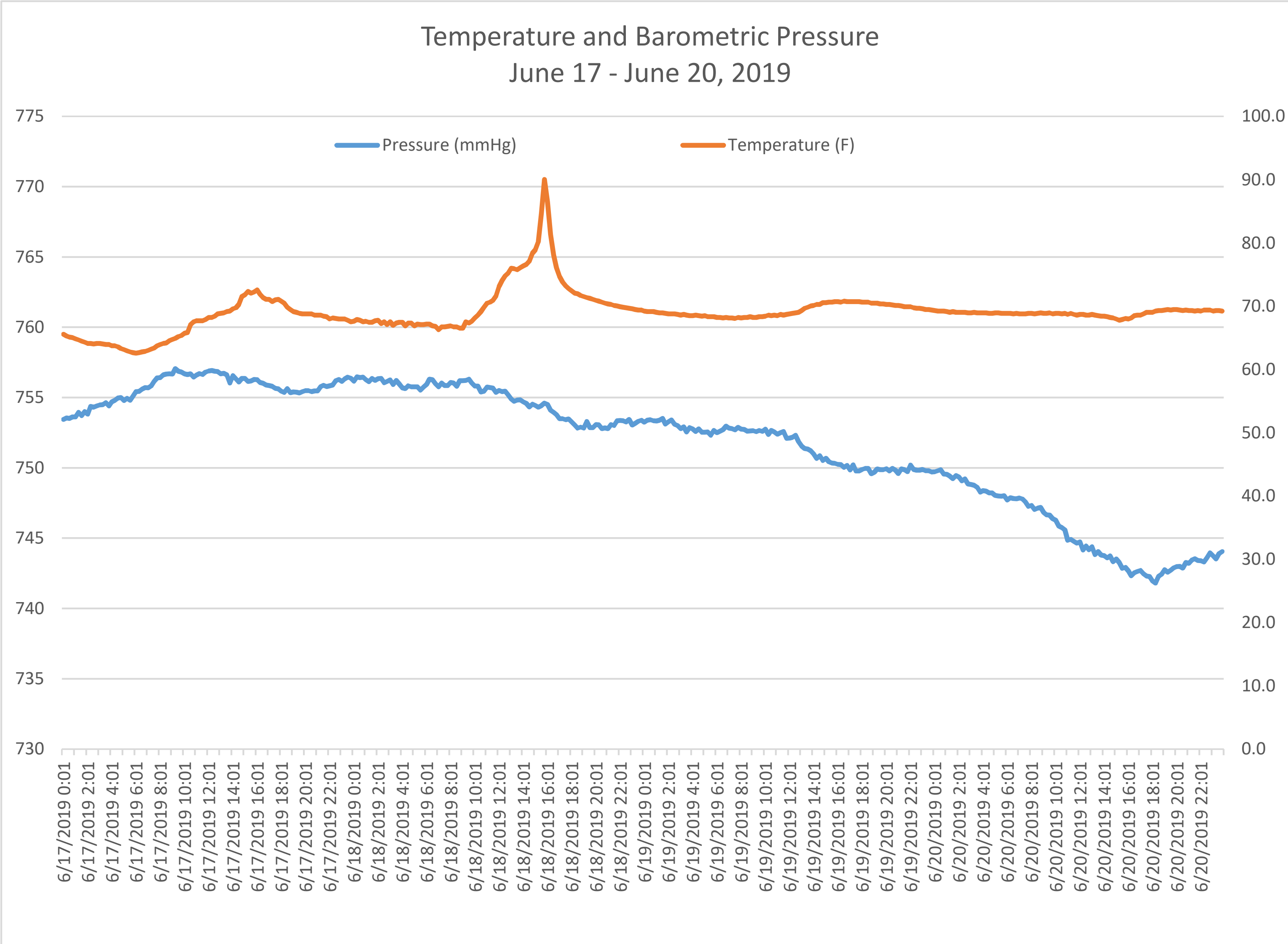
Free Cyanide Sulfide Test Strip: ~~Positive (Black) / Negative (No change)~~ NA

UNIT STABILITY

pH	DO	Turb.	Cond	ORP
± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV



Temperature and Barometric Pressure
March 18 - March 21, 2019
Pressure (mmHg)
Temperature (F)
775
770
765
760
755
750
745
740
735
730
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
3/18/2019 0:01
3/18/2019 2:01
3/18/2019 4:01
3/18/2019 6:01
3/18/2019 8:01
3/18/2019 10:01
3/18/2019 12:01
3/18/2019 14:01
3/18/2019 16:01
3/18/2019 18:01
3/18/2019 20:01
3/18/2019 22:01
3/19/2019 0:01
3/19/2019 2:01
3/19/2019 4:01
3/19/2019 6:01
3/19/2019 8:01
3/19/2019 10:01
3/19/2019 12:01
3/19/2019 14:01
3/19/2019 16:01
3/19/2019 18:01
3/19/2019 20:01
3/19/2019 22:01
3/20/2019 0:01
3/20/2019 2:01
3/20/2019 4:01
3/20/2019 6:01
3/20/2019 8:01
3/20/2019 10:01
3/20/2019 12:01
3/20/2019 14:01
3/20/2019 16:01
3/20/2019 18:01
3/20/2019 20:01
3/20/2019 22:01
3/21/2019 0:01
3/21/2019 2:01
3/21/2019 4:01
3/21/2019 6:01
3/21/2019 8:01
3/21/2019 10:01
3/21/2019 12:01
3/21/2019 14:01
3/21/2019 16:01
3/21/2019 18:01
3/21/2019 20:01
3/21/2019 22:01



Temperature and Barometric Pressure
June 17 - June 20, 2019
Pressure (mmHg)
Temperature (F)
775
770
765
760
755
750
745
740
735
730
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
6/17/2019 0:01
6/17/2019 2:01
6/17/2019 4:01
6/17/2019 6:01
6/17/2019 8:01
6/17/2019 10:01
6/17/2019 12:01
6/17/2019 14:01
6/17/2019 16:01
6/17/2019 18:01
6/17/2019 20:01
6/17/2019 22:01
6/18/2019 0:01
6/18/2019 2:01
6/18/2019 4:01
6/18/2019 6:01
6/18/2019 8:01
6/18/2019 10:01
6/18/2019 12:01
6/18/2019 14:01
6/18/2019 16:01
6/18/2019 18:01
6/18/2019 20:01
6/18/2019 22:01
6/19/2019 0:01
6/19/2019 2:01
6/19/2019 4:01
6/19/2019 6:01
6/19/2019 8:01
6/19/2019 10:01
6/19/2019 12:01
6/19/2019 14:01
6/19/2019 16:01
6/19/2019 18:01
6/19/2019 20:01
6/19/2019 22:01
6/20/2019 0:01
6/20/2019 2:01
6/20/2019 4:01
6/20/2019 6:01
6/20/2019 8:01
6/20/2019 10:01
6/20/2019 12:01
6/20/2019 14:01
6/20/2019 16:01
6/20/2019 18:01
6/20/2019 20:01
6/20/2019 22:01

Appendix B Laboratory Analytical Reports

31-Mar-2019

Cassie Reuter
EHS Support LLC
316 Grandview Ave
Argyle, WI 53504

Re: **Ashland Glens Falls, NY** Work Order: **19031301**

Dear Cassie,

ALS Environmental received 6 samples on 23-Mar-2019 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 9.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Ehrland Bosworth

Electronically approved by: Ehrland Bosworth

Ehrland Bosworth
Project Manager

ALS Group, USA

Date: 31-Mar-19

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: **19031301**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
19031301-01	SW-01_20190321	Water		3/21/2019 09:15	3/23/2019 10:00	☐
19031301-02	SW-02_20190321	Water		3/21/2019 10:19	3/23/2019 10:00	☐
19031301-03	SW-03_20190321	Water		3/21/2019 12:10	3/23/2019 10:00	☐
19031301-04	SW-04_20190321	Water		3/21/2019 13:45	3/23/2019 10:00	☐
19031301-05	EB_2019021	Water		3/21/2019 14:10	3/23/2019 10:00	☐
19031301-06	DUP_20190321	Water		3/21/2019	3/23/2019 10:00	☐

ALS Group, USA

Date: 31-Mar-19

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
WorkOrder: **19031301**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group, USA

Date: 31-Mar-19

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 19031301

Case Narrative

Samples for the above noted Work Order were received on 03/23/19. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
No deviations or anomalies were noted.

Client:	EHS Support LLC	**Work Order:**	19031301
Project:	Ashland Glens Falls, NY		

Lab ID: 19031301-01A **Collection Date:** 3/21/2019 9:15:00 AM
Client Sample ID: SW-01_20190321 **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	3/26/2019 10:00 AM

Lab ID: 19031301-02A **Collection Date:** 3/21/2019 10:19:00 AM
Client Sample ID: SW-02_20190321 **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	3/26/2019 10:00 AM

Lab ID: 19031301-03A **Collection Date:** 3/21/2019 12:10:00 PM
Client Sample ID: SW-03_20190321 **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	3/26/2019 10:00 AM

Lab ID: 19031301-04A **Collection Date:** 3/21/2019 1:45:00 PM
Client Sample ID: SW-04_20190321 **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	3/26/2019 10:00 AM

Lab ID: 19031301-05A **Collection Date:** 3/21/2019 2:10:00 PM
Client Sample ID: EB_2019021 **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	3/26/2019 10:00 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *31-Mar-19*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 19031301

Lab ID: 19031301-06A
Client Sample ID: DUP_20190321
Collection Date: 3/21/2019
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	3/26/2019 10:00 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 31-Mar-19

Client: EHS Support LLC
Work Order: 19031301
Project: Ashland Glens Falls, NY

QC BATCH REPORT

Batch ID: **R257199** Instrument ID **FS3100** Method: **OIA 1677**

MBLK Sample ID: **MB-R257199-R257199** Units: **µg/L** Analysis Date: **3/26/2019 10:00 AM**
Client ID: Run ID: **FS3100_190326A** SeqNo: **5576715** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	ND	2.0								

LCS Sample ID: **LCS-R257199-R257199** Units: **µg/L** Analysis Date: **3/26/2019 10:00 AM**
Client ID: Run ID: **FS3100_190326A** SeqNo: **5576716** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	56.11	2.0	50	0	112	82-132	0			

MS Sample ID: **19031301-03A MS** Units: **µg/L** Analysis Date: **3/26/2019 10:00 AM**
Client ID: **SW-03_20190321** Run ID: **FS3100_190326A** SeqNo: **5576722** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	52.28	2.0	50	0.05	104	82-130	0			

MSD Sample ID: **19031301-03A MSD** Units: **µg/L** Analysis Date: **3/26/2019 10:00 AM**
Client ID: **SW-03_20190321** Run ID: **FS3100_190326A** SeqNo: **5576723** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	52.38	2.0	50	0.05	105	82-130	52.28	0.191	11	

The following samples were analyzed in this batch:

19031301-01A	19031301-02A	19031301-03A
19031301-04A	19031301-05A	19031301-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 43547

ALS Project Manager: | ALS Work Order #: 1903130I

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Glens Falls, NY	A	Free Cyanide (OIA-1677)
Work Order		Project Number		B	
Company Name	Ashland Inc.	Bill To Company	EHS Support LLC	C	
Send Report To	Jane Vondracek	Invoice Attn	Cassie Reuter	D	
Address	5200 Blazer Parkway	Address	—	E	
				F	
City/State/Zip	Dublin, OH 43017	City/State/Zip	—	G	
Phone	614-790-6146	Phone	608-851-0626	H	
Fax		Fax		I	
e-Mail Address	Jevondracek@ashland.com	e-Mail Address	cassie.Reuter@ehs-support.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SW-01_20190321	3/21/19	915	water	NaOH	1	X										
2	SW-02_20190321	3/21/19	1019	↓	↓	1	X										
3	SW-03_20190321	3/21/19	1210	↓	↓	2	X										
4	SW-04_20190321	3/21/19	1345	↓	↓	1	X										
5	EB_20190321	3/21/19	1410	↓	↓	1	X										
6	DUP_20190321	3/21/19	—	water	NaOH	1	X										
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Garrett Crowe [signature]

Shipment Method:

Turnaround Time in Business Days (BD): ☐ Other ______ ☐ 10 BD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD

Results Due Date: STD

Relinquished by: [signature]	Date: 3/22/19	Time: 1500	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): [signature] 3.23.19 10:00
Logged by (Laboratory): MF	Date: 3.25.19	Time: 8:26	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp
SM2 PH15	4.8c

QC Package: (Check One Box Below)
- ☐ Level II Std QC
- ☐ Level III Std QC/Raw Date
- ☐ Level IV SW846/CLP
- ☐ Other ______
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **EHS SUPPORT-ARGYLE**

Date/Time Received: **23-Mar-19 10:00**

Work Order: **19031301**

Received by: **BNF**

Checklist completed by: Bernina France (eSignature) — Date: 25-Mar-19

Reviewed by: Ehrland Bosworth (eSignature) — Date: 25-Mar-19

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.8/4.8 C	SR	
Cooler(s)/Kit(s):	1		
Date/Time sample(s) sent to storage:	3/25/2019 8:29:18 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-149152-1
Client Project/Site: Hercules Glens Falls

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
2/28/2019 4:37:15 PM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

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

Job ID: 480-149152-1

Laboratory: TestAmerica Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls

Report Number: 480-149152-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The sample was received on 02/19/2019; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.5º C.

METALS (ICPMS) - DISSOLVED

Sample EWB5 _ 20190218 (480-149152-1) was analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The sample was prepared on 02/20/2019 and analyzed on 02/27/2019.

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

HEXAVALENT CHROMIUM

Sample EWB5 _ 20190218 (480-149152-1) was analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The sample was analyzed on 02/19/2019.

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

TOTAL CYANIDE

Sample EWB5 _ 20190218 (480-149152-1) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The sample was prepared and analyzed on 02/28/2019.

Sample EWB5 _ 20190218 (480-149152-1)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Client: Ashland LLC
Project/Site: Hercules Glens Falls

TestAmerica Job ID: 480-149152-1

Client Sample ID: EWB5 _ 20190218

Lab Sample ID: 480-149152-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	53000		750	180	ug/L	500		6020A	Dissolved
Cyanide, Total	0.42		0.050	0.013	mg/L	5		9012B	Total/NA
Chromium, hexavalent	52		5.0	2.5	mg/L	500		7196A	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Ashland LLC
Project/Site: Hercules Glens Falls

TestAmerica Job ID: 480-149152-1

Client Sample ID: EWB5 _ 20190218
Date Collected: 02/18/19 13:17
Date Received: 02/19/19 01:00

Lab Sample ID: 480-149152-1
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	53000		750	180	ug/L		02/20/19 07:58	02/27/19 10:59	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.42		0.050	0.013	mg/L		02/28/19 04:00	02/28/19 10:59	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	52		5.0	2.5	mg/L			02/19/19 04:37	500

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

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 480-459730/1-A
Matrix: Water
Analysis Batch: 459874

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 459730

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.5	U	1.5	0.36	ug/L		02/20/19 07:58	02/20/19 11:08	1

Lab Sample ID: LCS 480-459730/2-A
Matrix: Water
Analysis Batch: 459874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 459730

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	20.0	18.8		ug/L		94	80 - 120

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-459594/3
Matrix: Water
Analysis Batch: 459594

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			02/19/19 04:37	1

Lab Sample ID: LCS 480-459594/4
Matrix: Water
Analysis Batch: 459594

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0540		mg/L		108	85 - 115

Lab Sample ID: 480-149152-1 MS
Matrix: Water
Analysis Batch: 459594

Client Sample ID: EWB5 _ 20190218
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	52		25.0	81.1		mg/L		115	85 - 115

Lab Sample ID: 480-149152-1 DU
Matrix: Water
Analysis Batch: 459594

Client Sample ID: EWB5 _ 20190218
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chromium, hexavalent	52		51.8		mg/L		1	20

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 680-559940/1-A
Matrix: Water
Analysis Batch: 559997

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 559940

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		02/28/19 04:00	02/28/19 10:27	1

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: LCS 680-559940/2-A
Matrix: Water
Analysis Batch: 559997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559940

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0468		mg/L		94	85 - 115

QC Association Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls

TestAmerica Job ID: 480-149152-1

Metals

Prep Batch: 459730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-149152-1	EWB5 _ 20190218	Dissolved	Water	3020A	
MB 480-459730/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-459730/2-A	Lab Control Sample	Total/NA	Water	3020A	

Analysis Batch: 459874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-459730/1-A	Method Blank	Total/NA	Water	6020A	459730
LCS 480-459730/2-A	Lab Control Sample	Total/NA	Water	6020A	459730

Analysis Batch: 460756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-149152-1	EWB5 _ 20190218	Dissolved	Water	6020A	459730

General Chemistry

Analysis Batch: 459594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-149152-1	EWB5 _ 20190218	Dissolved	Water	7196A	
MB 480-459594/3	Method Blank	Total/NA	Water	7196A	
LCS 480-459594/4	Lab Control Sample	Total/NA	Water	7196A	
480-149152-1 MS	EWB5 _ 20190218	Dissolved	Water	7196A	
480-149152-1 DU	EWB5 _ 20190218	Dissolved	Water	7196A	

Prep Batch: 559940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-149152-1	EWB5 _ 20190218	Total/NA	Water	9012B	
MB 680-559940/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-559940/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 559997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-149152-1	EWB5 _ 20190218	Total/NA	Water	9012B	559940
MB 680-559940/1-A	Method Blank	Total/NA	Water	9012B	559940
LCS 680-559940/2-A	Lab Control Sample	Total/NA	Water	9012B	559940

Client Sample ID: EWB5 _ 20190218
Lab Sample ID: 480-149152-1
Date Collected: 02/18/19 13:17
Matrix: Water
Date Received: 02/19/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			459730	02/20/19 07:58	MV	TAL BUF
Dissolved	Analysis	6020A		500	460756	02/27/19 10:59	AMH	TAL BUF
Dissolved	Analysis	7196A		500	459594	02/19/19 04:37	MLS	TAL BUF
Total/NA	Prep	9012B			559940	02/28/19 04:00	DAM	TAL SAV
Total/NA	Analysis	9012B		5	559997	02/28/19 10:59	DAM	TAL SAV

Laboratory References:

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

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Laboratory: TestAmerica Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Laboratory: TestAmerica Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10842	04-01-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9012B	9012B	Water	Cyanide, Total

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUF
7196A	Chromium, Hexavalent	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL SAV
3020A	Preparation, Total Metals	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-149152-1	EWB5 _ 20190218	Water	02/18/19 13:17	02/19/19 01:00

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Albany #224

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Nate Suhadolnik	Lab PM: Barnett, Eddie T	Carrier Tracking No(s)	COC No: 680-101688-39997.1
Client Contact: Mr Jim Vondracek	Phone: 914-263-3551	E-Mail: eddie.barnett@testamericainc.com		Page: Page 1 of 1
Company: Ashland LLC				Job #:
Address: 5200 Blazer Parkway DS-4	Due Date Requested:			
City: Dublin	TAT Requested (days): STD			
State, Zip: OH, 43017				
Phone: 614-790-6146(Tel)	PO #: PO787667			
Email: jevondracek@ashland.com	WO #: Task 400			
Project Name: Hercules Glens Falls O&M 2019	Project #: 68000956			
Site: Ashland Glens Falls	SSOW#:			

Analysis Requested

Field Filtered Sample (Yes or No); Perform MS/MSD (Yes or No); 9012B - Cyanide, Total; 7196A - Chromium, hexavalent (field filtered); 6020A - Dissolved Chromium (field filtered)

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample	Perform MS/MSD	9012B - Cyanide, Total	7196A - Chromium, hexavalent	6020A - Dissolved Chromium
Preservation Code:							B	N	D
ewbs_20190218	~~1/18/19~~ 02/18/19	13:17	G	Water	Y	N	X	X	X
				Water					
KZ	2-18-19								
	02/19/19 EB								

480-149152 Chain of Custody

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Special Instructions/Note:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements: cassie.reuter@ehssupport.com Gevondracek@ashland.com

Empty Kit Relinquished by:	Date: 1600	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	2/18/19	Ashland Grp	[signature]	2-18-19 1600	TA
Relinquished by	Date/Time	Company	Received by [signature]	02/19/19 0100	
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: 1.5 #1

Ver: 08/04/2016

Sampler: Nate Suhadolnik

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-47948.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-149152-1

Address: 5102 LaRoche Avenue, ,	Due Date Requested: 3/1/2019	**Analysis Requested**
City: Savannah	TAT Requested (days):	
State, Zip: GA, 31404		
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:	
Email:	WO #:	
Project Name: Hercules Glens Falls	Project #: 68000956	
Site:	SSOW#:	

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA
M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep (MOD) Local Method	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
EWB5 _ 20190218 (480-149152-1)	2/18/19	13:17 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 2-19-19 1700	Company: TABS	Received by: [signature]	Date/Time: 2-20-19 1010	Company: TASAV	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 1.9/2.1			

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-149152-1

Login Number: 149152
List Number: 1
Creator: Velickovic, Zoran

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-149152-1

Login Number: 149152
List Number: 2
Creator: Nobles, Terry G

List Source: TestAmerica Savannah
List Creation: 02/20/19 12:01 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-150487-1
Client Project/Site: Hercules Glens Falls 1Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Eddie Barnett

Authorized for release by:
3/21/2019 7:21:36 AM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

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Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 480-150487-1

Laboratory: TestAmerica Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 1Q19

Report Number: 480-150487-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 03/20/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

HEXAVALENT CHROMIUM
Samples EB_20190319 (480-150487-1), MW-31_20190319 (480-150487-2), AW-B17_20190319 (480-150487-3), MW-OB25_20190319 (480-150487-4), AW-B4_20190319 (480-150487-5) and AW-A11_20190319 (480-150487-6) were analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The samples were analyzed on 03/20/2019.

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

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150487-1

Client Sample ID: EB_20190319 — Lab Sample ID: 480-150487-1

No Detections.

Client Sample ID: MW-31_20190319 — Lab Sample ID: 480-150487-2

No Detections.

Client Sample ID: AW-B17_20190319 — Lab Sample ID: 480-150487-3

No Detections.

Client Sample ID: MW-OB25_20190319 — Lab Sample ID: 480-150487-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.38		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: AW-B4_20190319 — Lab Sample ID: 480-150487-5

No Detections.

Client Sample ID: AW-A11_20190319 — Lab Sample ID: 480-150487-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.022		0.010	0.0050	mg/L	1		7196A	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150487-1

Client Sample ID: EB_20190319 **Lab Sample ID: 480-150487-1**
Date Collected: 03/19/19 15:08 **Matrix: Water**
Date Received: 03/20/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/20/19 03:31	1

Client Sample ID: MW-31_20190319 **Lab Sample ID: 480-150487-2**
Date Collected: 03/19/19 12:46 **Matrix: Water**
Date Received: 03/20/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/20/19 03:31	1

Client Sample ID: AW-B17_20190319 **Lab Sample ID: 480-150487-3**
Date Collected: 03/19/19 12:53 **Matrix: Water**
Date Received: 03/20/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/20/19 03:31	1

Client Sample ID: MW-OB25_20190319 **Lab Sample ID: 480-150487-4**
Date Collected: 03/19/19 10:24 **Matrix: Water**
Date Received: 03/20/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.38**		0.010	0.0050	mg/L			03/20/19 03:31	1

Client Sample ID: AW-B4_20190319 **Lab Sample ID: 480-150487-5**
Date Collected: 03/19/19 14:43 **Matrix: Water**
Date Received: 03/20/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/20/19 03:31	1

Client Sample ID: AW-A11_20190319 **Lab Sample ID: 480-150487-6**
Date Collected: 03/19/19 16:00 **Matrix: Water**
Date Received: 03/20/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.022**		0.010	0.0050	mg/L			03/20/19 03:31	1

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-463727/3
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 463727

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/20/19 03:31	1

Lab Sample ID: LCS 480-463727/4
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 463727

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0490		mg/L		98	85 - 115

Lab Sample ID: 480-150487-2 MS
Client Sample ID: MW-31_20190319
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 463727

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.010	U	0.0500	0.0526		mg/L		105	85 - 115

Lab Sample ID: 480-150487-1 DU
Client Sample ID: EB_20190319
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 463727

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chromium, hexavalent	0.010	U	0.010	U	mg/L		NC	20

General Chemistry

Analysis Batch: 463727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150487-1	EB_20190319	Dissolved	Water	7196A	
480-150487-2	MW-31_20190319	Dissolved	Water	7196A	
480-150487-3	AW-B17_20190319	Dissolved	Water	7196A	
480-150487-4	MW-OB25_20190319	Dissolved	Water	7196A	
480-150487-5	AW-B4_20190319	Dissolved	Water	7196A	
480-150487-6	AW-A11_20190319	Dissolved	Water	7196A	
MB 480-463727/3	Method Blank	Total/NA	Water	7196A	
LCS 480-463727/4	Lab Control Sample	Total/NA	Water	7196A	
480-150487-2 MS	MW-31_20190319	Dissolved	Water	7196A	
480-150487-1 DU	EB_20190319	Dissolved	Water	7196A	

Client Sample ID: EB_20190319
Lab Sample ID: 480-150487-1
Date Collected: 03/19/19 15:08
Matrix: Water
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	463727	03/20/19 03:31	MLS	TAL BUF

Client Sample ID: MW-31_20190319
Lab Sample ID: 480-150487-2
Date Collected: 03/19/19 12:46
Matrix: Water
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	463727	03/20/19 03:31	MLS	TAL BUF

Client Sample ID: AW-B17_20190319
Lab Sample ID: 480-150487-3
Date Collected: 03/19/19 12:53
Matrix: Water
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	463727	03/20/19 03:31	MLS	TAL BUF

Client Sample ID: MW-OB25_20190319
Lab Sample ID: 480-150487-4
Date Collected: 03/19/19 10:24
Matrix: Water
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	463727	03/20/19 03:31	MLS	TAL BUF

Client Sample ID: AW-B4_20190319
Lab Sample ID: 480-150487-5
Date Collected: 03/19/19 14:43
Matrix: Water
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	463727	03/20/19 03:31	MLS	TAL BUF

Client Sample ID: AW-A11_20190319
Lab Sample ID: 480-150487-6
Date Collected: 03/19/19 16:00
Matrix: Water
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	463727	03/20/19 03:31	MLS	TAL BUF

Laboratory References:

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

Accreditation/Certification Summary

Client: Ashland LLC
TestAmerica Job ID: 480-150487-1
Project/Site: Hercules Glens Falls 1Q19

Laboratory: TestAmerica Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19 *

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-19
Alaska	State Program	10		06-30-19
Alaska (UST)	State Program	10	UST-104	09-22-19
ANAB	DoD / DOE		L2463	09-22-19
ANAB	ISO/IEC 17025		L2463.01	09-22-19
Arizona	State Program	9	AZ0808	12-14-19
Arkansas DEQ	State Program	6	88-0692	02-01-20
California	State Program	9	2939	06-30-19
Colorado	State Program	8	N/A	12-31-19
Connecticut	State Program	1	PH-0161	03-31-21
Florida	NELAP	4	E87052	06-30-19
GA Dept. of Agriculture	State Program	4	N/A	06-12-19
Georgia	State Program	4	N/A	06-30-19
Georgia	State Program	4	803	06-30-19
Guam	State Program	9	15-005r	04-17-19
Hawaii	State Program	9	N/A	06-30-19
Illinois	NELAP	5	200022	11-30-19
Indiana	State Program	5	N/A	06-30-19
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-19
Kentucky (UST)	State Program	4	18	06-30-19
Kentucky (WW)	State Program	4	90084	12-31-19
Louisiana	NELAP	6	30690	06-30-19
Louisiana (DW)	NELAP	6	LA160019	12-31-19
Maine	State Program	1	GA00006	09-25-20
Maryland	State Program	3	250	12-31-19
Massachusetts	State Program	1	M-GA006	06-30-19
Michigan	State Program	5	9925	03-05-19 *
Mississippi	State Program	4	N/A	06-30-19
Nebraska	State Program	7	TestAmerica-Savannah	06-30-19
New Jersey	NELAP	2	GA769	06-30-19
New Mexico	State Program	6	N/A	06-30-19
North Carolina (DW)	State Program	4	13701	07-31-19
North Carolina (WW/SW)	State Program	4	269	12-31-19
Oklahoma	State Program	6	9984	08-31-19
Pennsylvania	NELAP	3	68-00474	06-30-19
Puerto Rico	State Program	2	GA00006	01-01-20
South Carolina	State Program	4	98001	06-30-18 *
Tennessee	State Program	4	TN02961	06-30-19
Texas	NELAP	6	T104704185-16-9	11-30-19
Texas (DW)	State Program	1	T104704185	06-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
Virginia	NELAP	3	460161	06-14-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Laboratory: TestAmerica Savannah (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C805	06-10-19
West Virginia (DW)	State Program	3	9950C	12-31-19
West Virginia DEP	State Program	3	094	06-30-19
Wisconsin	State Program	5	999819810	08-31-19
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Method	Method Description	Protocol	Laboratory
7196A	Chromium, Hexavalent	SW846	TAL BUF

Protocol References:

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

Laboratory References:

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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-150487-1	EB_20190319	Water	03/19/19 15:08	03/20/19 01:00
480-150487-2	MW-31_20190319	Water	03/19/19 12:46	03/20/19 01:00
480-150487-3	AW-B17_20190319	Water	03/19/19 12:53	03/20/19 01:00
480-150487-4	MW-OB25_20190319	Water	03/19/19 10:24	03/20/19 01:00
480-150487-5	AW-B4_20190319	Water	03/19/19 14:43	03/20/19 01:00
480-150487-6	AW-A11_20190319	Water	03/19/19 16:00	03/20/19 01:00

Albany
#224

Chain of Custody Record

316935

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mr. Jim Vondracek	Site Contact: Garett Crowe	Date: 3/19/19	COC No: 680-76278-31646.1
Company Name: Ashland Inc.	Tel/Fax:	Lab Contact: Eddie T. Barrett	Carrier:	1 of 1 COCs
Address: 5200 Blazer Parkway DS-4	Analysis Turnaround Time			Sampler: Garett Crowe
City/State/Zip: Dublin OH, 43017	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 614-790-6146	TAT if different from Below STD			Walk-in Client:
Fax Email: JVondracek@ashland.com	☐ 2 weeks			Lab Sampling:
Project Name: Hercules Glens Falls Quarterly Event	☐ 1 week			
Site: Ashland Glens Falls	☐ 2 days			Job / SDG No.:
PO# 4502471836	☐ 1 day			

480-150487 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	7196A - Chromium, hexavalent (Field filtered)	Sample Specific Notes:
EB_20190319	3/19/19	1508	G	water	1	Y	N	X	
MW-31_20190319	3/19/19	1246	G	water	1	Y	N	X	
AW-B17_20190319	3/19/19	1253	G	water	1	Y	N	X	
MW-OB25_20190319	3/19/19	1024	G	water	1	Y	N	X	
AW-B4_20190319	3/19/19	1443	G	water	1	Y	N	X	
AW-A11_20190319	3/19/19	1600	G	Water	1	Y	N	X	

RL 3/19/19

GC

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ | Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Arcadis Group	3/19/19 1705	[signature]	TA	3/19/19 1705
Relinquished by: [signature]	Company: TA	3/19/19 1800	Received by: [signature]	Company:	Date/Time: 03/20/19 0100
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

1.8 #1

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-150487-1

Login Number: 150487
List Number: 1
Creator: Velickovic, Zoran

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-150502-1
Client Project/Site: Hercules Glens Falls 1Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Eddie Barnett

Authorized for release by:
4/3/2019 7:47:06 AM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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Definitions/Glossary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150502-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 480-150502-1

Laboratory: TestAmerica Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 1Q19

Report Number: 480-150502-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 03/20/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.6º C.

METALS (ICPMS) - DISSOLVED
Samples EB_20190319 (480-150502-1), MW-31_20190319 (480-150502-2), AW-B17_20190319 (480-150502-3), MW-OB25_20190319 (480-150502-4), AW-B4_20190319 (480-150502-5) and AW-A11_20190319 (480-150502-6) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared on 03/21/2019 and analyzed on 03/29/2019.

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

TOTAL CYANIDE
Samples EB_20190319 (480-150502-1), MW-31_20190319 (480-150502-2), AW-B17_20190319 (480-150502-3), MW-OB25_20190319 (480-150502-4), AW-B4_20190319 (480-150502-5) and AW-A11_20190319 (480-150502-6) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 03/28/2019.

Samples MW-31_20190319 (480-150502-2)[5X] and AW-B4_20190319 (480-150502-5)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Detection Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150502-1

Client Sample ID: EB_20190319 — Lab Sample ID: 480-150502-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	0.46	J	1.5	0.36	ug/L	1		6020A	Dissolved

Client Sample ID: MW-31_20190319 — Lab Sample ID: 480-150502-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	11		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.22		0.050	0.013	mg/L	5		9012B	Total/NA

Client Sample ID: AW-B17_20190319 — Lab Sample ID: 480-150502-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	3.0		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.029		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: MW-OB25_20190319 — Lab Sample ID: 480-150502-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	410		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.020		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: AW-B4_20190319 — Lab Sample ID: 480-150502-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	10		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.13		0.050	0.013	mg/L	5		9012B	Total/NA

Client Sample ID: AW-A11_20190319 — Lab Sample ID: 480-150502-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	36		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.050		0.010	0.0025	mg/L	1		9012B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150502-1

Client Sample ID: EB_20190319
Lab Sample ID: 480-150502-1
Date Collected: 03/19/19 15:08
Matrix: Water
Date Received: 03/20/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.46	J	1.5	0.36	ug/L		03/21/19 07:00	03/29/19 02:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:02	1

Client Sample ID: MW-31_20190319
Lab Sample ID: 480-150502-2
Date Collected: 03/19/19 12:46
Matrix: Water
Date Received: 03/20/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	11		1.5	0.36	ug/L		03/21/19 07:00	03/29/19 03:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.22		0.050	0.013	mg/L		03/28/19 04:31	03/28/19 10:44	5

Client Sample ID: AW-B17_20190319
Lab Sample ID: 480-150502-3
Date Collected: 03/19/19 12:53
Matrix: Water
Date Received: 03/20/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	3.0		1.5	0.36	ug/L		03/21/19 07:00	03/29/19 03:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.029		0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:05	1

Client Sample ID: MW-OB25_20190319
Lab Sample ID: 480-150502-4
Date Collected: 03/19/19 10:24
Matrix: Water
Date Received: 03/20/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	410		1.5	0.36	ug/L		03/21/19 07:00	03/29/19 03:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.020		0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:06	1

Client Sample ID: AW-B4_20190319
Lab Sample ID: 480-150502-5
Date Collected: 03/19/19 14:43
Matrix: Water
Date Received: 03/20/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	10		1.5	0.36	ug/L		03/21/19 07:00	03/29/19 03:23	1

Client Sample ID: AW-B4_20190319

Date Collected: 03/19/19 14:43
Date Received: 03/20/19 01:00

Lab Sample ID: 480-150502-5
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.13		0.050	0.013	mg/L		03/28/19 04:31	03/28/19 10:45	5

Client Sample ID: AW-A11_20190319

Date Collected: 03/19/19 16:00
Date Received: 03/20/19 01:00

Lab Sample ID: 480-150502-6
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	36		1.5	0.36	ug/L		03/21/19 07:00	03/29/19 03:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.050		0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:10	1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 480-463906/1-A
Matrix: Water
Analysis Batch: 465337

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 463906

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.5	U	1.5	0.36	ug/L		03/21/19 07:00	03/29/19 02:30	1

Lab Sample ID: LCS 480-463906/2-A
Matrix: Water
Analysis Batch: 465337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 463906

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	20.0	21.6		ug/L		108	80 - 120

Lab Sample ID: 480-150502-1 MS
Matrix: Water
Analysis Batch: 465337

Client Sample ID: EB_20190319
Prep Type: Dissolved
Prep Batch: 463906

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	0.46	J	20.0	22.7		ug/L		111	75 - 125

Lab Sample ID: 480-150502-1 MSD
Matrix: Water
Analysis Batch: 465337

Client Sample ID: EB_20190319
Prep Type: Dissolved
Prep Batch: 463906

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Chromium	0.46	J	20.0	22.4		ug/L		110	75 - 125	1	20

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 680-564049/1-A
Matrix: Water
Analysis Batch: 564113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564049

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:43	1

Lab Sample ID: LCS 680-564049/2-A
Matrix: Water
Analysis Batch: 564113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564049

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0519		mg/L		104	85 - 115

Lab Sample ID: MB 680-564050/1-A
Matrix: Water
Analysis Batch: 564113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564050

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		03/28/19 06:00	03/28/19 10:32	1

Metals

Prep Batch: 463906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150502-1	EB_20190319	Dissolved	Water	3020A	
480-150502-2	MW-31_20190319	Dissolved	Water	3020A	
480-150502-3	AW-B17_20190319	Dissolved	Water	3020A	
480-150502-4	MW-OB25_20190319	Dissolved	Water	3020A	
480-150502-5	AW-B4_20190319	Dissolved	Water	3020A	
480-150502-6	AW-A11_20190319	Dissolved	Water	3020A	
MB 480-463906/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-463906/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-150502-1 MS	EB_20190319	Dissolved	Water	3020A	
480-150502-1 MSD	EB_20190319	Dissolved	Water	3020A	

Analysis Batch: 465337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150502-1	EB_20190319	Dissolved	Water	6020A	463906
480-150502-2	MW-31_20190319	Dissolved	Water	6020A	463906
480-150502-3	AW-B17_20190319	Dissolved	Water	6020A	463906
480-150502-4	MW-OB25_20190319	Dissolved	Water	6020A	463906
480-150502-5	AW-B4_20190319	Dissolved	Water	6020A	463906
480-150502-6	AW-A11_20190319	Dissolved	Water	6020A	463906
MB 480-463906/1-A	Method Blank	Total/NA	Water	6020A	463906
LCS 480-463906/2-A	Lab Control Sample	Total/NA	Water	6020A	463906
480-150502-1 MS	EB_20190319	Dissolved	Water	6020A	463906
480-150502-1 MSD	EB_20190319	Dissolved	Water	6020A	463906

General Chemistry

Prep Batch: 564049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150502-1	EB_20190319	Total/NA	Water	9012B	
480-150502-2	MW-31_20190319	Total/NA	Water	9012B	
480-150502-3	AW-B17_20190319	Total/NA	Water	9012B	
480-150502-4	MW-OB25_20190319	Total/NA	Water	9012B	
480-150502-5	AW-B4_20190319	Total/NA	Water	9012B	
480-150502-6	AW-A11_20190319	Total/NA	Water	9012B	
MB 680-564049/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-564049/2-A	Lab Control Sample	Total/NA	Water	9012B	

Prep Batch: 564050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-564050/1-A	Method Blank	Total/NA	Water	9012B	

Analysis Batch: 564113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150502-1	EB_20190319	Total/NA	Water	9012B	564049
480-150502-2	MW-31_20190319	Total/NA	Water	9012B	564049
480-150502-3	AW-B17_20190319	Total/NA	Water	9012B	564049
480-150502-4	MW-OB25_20190319	Total/NA	Water	9012B	564049
480-150502-5	AW-B4_20190319	Total/NA	Water	9012B	564049
480-150502-6	AW-A11_20190319	Total/NA	Water	9012B	564049
MB 680-564049/1-A	Method Blank	Total/NA	Water	9012B	564049

General Chemistry (Continued)

Analysis Batch: 564113 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-564050/1-A	Method Blank	Total/NA	Water	9012B	564050
LCS 680-564049/2-A	Lab Control Sample	Total/NA	Water	9012B	564049

Client Sample ID: EB_20190319 **Lab Sample ID: 480-150502-1**
Date Collected: 03/19/19 15:08 **Matrix: Water**
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			463906	03/21/19 07:00	MV	TAL BUF
Dissolved	Analysis	6020A		1	465337	03/29/19 02:52	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:02	DAM	TAL SAV

Client Sample ID: MW-31_20190319 **Lab Sample ID: 480-150502-2**
Date Collected: 03/19/19 12:46 **Matrix: Water**
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			463906	03/21/19 07:00	MV	TAL BUF
Dissolved	Analysis	6020A		1	465337	03/29/19 03:06	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		5	564113	03/28/19 10:44	DAM	TAL SAV

Client Sample ID: AW-B17_20190319 **Lab Sample ID: 480-150502-3**
Date Collected: 03/19/19 12:53 **Matrix: Water**
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			463906	03/21/19 07:00	MV	TAL BUF
Dissolved	Analysis	6020A		1	465337	03/29/19 03:09	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:05	DAM	TAL SAV

Client Sample ID: MW-OB25_20190319 **Lab Sample ID: 480-150502-4**
Date Collected: 03/19/19 10:24 **Matrix: Water**
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			463906	03/21/19 07:00	MV	TAL BUF
Dissolved	Analysis	6020A		1	465337	03/29/19 03:20	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:06	DAM	TAL SAV

Client Sample ID: AW-B4_20190319 **Lab Sample ID: 480-150502-5**
Date Collected: 03/19/19 14:43 **Matrix: Water**
Date Received: 03/20/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			463906	03/21/19 07:00	MV	TAL BUF
Dissolved	Analysis	6020A		1	465337	03/29/19 03:23	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV

Lab Chronicle

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150502-1

Client Sample ID: AW-B4_20190319

Date Collected: 03/19/19 14:43
Date Received: 03/20/19 01:00

Lab Sample ID: 480-150502-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9012B		5	564113	03/28/19 10:45	DAM	TAL SAV

Client Sample ID: AW-A11_20190319

Date Collected: 03/19/19 16:00
Date Received: 03/20/19 01:00

Lab Sample ID: 480-150502-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			463906	03/21/19 07:00	MV	TAL BUF
Dissolved	Analysis	6020A		1	465337	03/29/19 03:25	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:10	DAM	TAL SAV

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Laboratory: TestAmerica Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

Laboratory: TestAmerica Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10842	04-01-19 *

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9012B	9012B	Water	Cyanide, Total

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL SAV
3020A	Preparation, Total Metals	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150502-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-150502-1	EB_20190319	Water	03/19/19 15:08	03/20/19 01:00
480-150502-2	MW-31_20190319	Water	03/19/19 12:46	03/20/19 01:00
480-150502-3	AW-B17_20190319	Water	03/19/19 12:53	03/20/19 01:00
480-150502-4	MW-OB25_20190319	Water	03/19/19 10:24	03/20/19 01:00
480-150502-5	AW-B4_20190319	Water	03/19/19 14:43	03/20/19 01:00
480-150502-6	AW-A11_20190319	Water	03/19/19 16:00	03/20/19 01:00

Albany
#224

Chain of Custody Record

316934

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact			
Company Name: Ashland Inc	Project Manager: Mr. Jim Vondracek	Site Contact: Garrett Crowe	Date: 3/19/19
Address: 5200 Blazer Parkway D5-4	Tel/Fax:	Lab Contact: Eddie T. Barnett	Carrier:
City/State/Zip: Dublin OH, 43017	Analysis Turnaround Time		
Phone: 614-790-6146	☐ CALENDAR DAYS ☐ WORKING DAYS		
Fax: Email: Jvondracek@ashland.com	TAT if different from Below STD		
Project Name: Hercules Glens Falls Quarterly event	☐ 2 weeks		
Site: Ashland Glens Falls	☐ 1 week		
P O # 4502471936	☐ 2 days		
	☐ 1 day		

COC No: 680-76228-31646.1
1 of 1 COCs
Sampler: Garrett Crowe
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

480-150502 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	9012B-Cyanide total	6020A-Dissolved total Chromium (Field Filtered)	Sample Specific Notes:
EB_20190319	3/19/19	1508	G	water	2	Y	N	X	X	
MW-31_20190319	3/19/19	1246	G	water	2	Y	N	X	X	
AW-817_20190319	3/19/19	1253	G	water	2	Y	N	X	X	
MW-0825_20190319	3/19/19	1024	G	water	2	Y	N	X	X	
AW-B4_20190319	3/19/19	1443	G	water	2	Y	N	X	X	
AW-A11_20190319	3/19/19	1600	G	Water	2	Y	N	X	X	
	RX	3/19/19								

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ______ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ______ Corr'd: ______ | Therm ID No.: ______

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Arcadis Group	3/19/19 1705	[signature]	TA	3/19/19 1705
[signature]	TA 3/19/19	1800	[signature]		03/20/19 0100
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

1.6 #1

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-48378.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-150502-1
Address: 5102 LaRoche Avenue,	Due Date Requested: 4/1/2019	**Analysis Requested**		**Preservation Codes:**
City: Savannah	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
State, Zip: GA, 31404				M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls O&M Quarterly	Project #: 68000956			Other:
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep (MOD) Local Method	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
EB-20190319 (480-150502-1)	3/19/19	15:08 Eastern		Water			X	1	
MW-31-20190319 (480-150502-2)	3/19/19	12:46 Eastern		Water			X	1	
AW-817-20190314 (480-150502-3)	3/19/19	12:53 Eastern		Water			X	1	
MW-0B25-20190319 (480-150502-4)	3/19/19	10:24 Eastern		Water			X	1	
AW-B4-20190319 (480-150502-5)	3/19/19	14:43 Eastern		Water			X	1	
AW-ALL-20190319 (480-150502-6)	3/19/19	16:00 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification		*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*	
Unconfirmed		☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*	
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Special Instructions/QC Requirements:	
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3-20-19 1515	TAB	[signature]	3/21/19 847	TASAV

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.8/2.0

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Ashland LLC | Job Number: 480-150502-1

Login Number: 150502 | **List Source: TestAmerica Buffalo**
List Number: 2
Creator: Harper, Marcus D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-150502-1

Login Number: 150502
List Number: 3
Creator: Weston, Pamela

List Source: TestAmerica Savannah
List Creation: 03/21/19 10:03 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-150574-1
Client Project/Site: Hercules Glens Falls 1Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
3/29/2019 2:23:45 PM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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

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Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 480-150574-1

Laboratory: TestAmerica Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 1Q19

Report Number: 480-150574-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 03/21/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.6º C.

HEXAVALENT CHROMIUM
Samples MW-OB30_20190320 (480-150574-1), MW-OB31_20190320 (480-150574-2), MW-OB32_20190320 (480-150574-3), MW-OB33_20190320 (480-150574-4), MW-OB34_20190320 (480-150574-5), AW-C11_20190320 (480-150574-6), AW-A14_20190320 (480-150574-7), SUMP-B_20190320 (480-150574-8), SUMP-A_20190320 (480-150574-9), MW-OB26_20190320 (480-150574-10), EB_20190320 (480-150574-11), EW-B5_20190320 (480-150574-12) and DUP_20190320 (480-150574-13) were analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The samples were analyzed on 03/21/2019.

To verify the absence of an interference, EPA Method 7196A requires the sample to be diluted until the matrix spike (MS) recovery is within 85-115%. For this reason, the following samples were diluted: AW-C11_20190320 (480-150574-6), AW-C11_20190320 (480-150574-6[MS]) and AW-C11_20190320 (480-150574-6[MSD]). Elevated reporting limits (RLs) are provided.

Chromium, hexavalent recoverd high for the MS of sample EB_20190320MS (480-150574-11) in batch 480-464116. Refer to the QC report for details.

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

Detection Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150574-1

Client Sample ID: MW-OB30_20190320 — Lab Sample ID: 480-150574-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.29		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: MW-OB31_20190320 — Lab Sample ID: 480-150574-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.010		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: MW-OB32_20190320 — Lab Sample ID: 480-150574-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.45		0.020	0.010	mg/L	2		7196A	Dissolved

Client Sample ID: MW-OB33_20190320 — Lab Sample ID: 480-150574-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	1.1		0.050	0.025	mg/L	5		7196A	Dissolved

Client Sample ID: MW-OB34_20190320 — Lab Sample ID: 480-150574-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.021		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: AW-C11_20190320 — Lab Sample ID: 480-150574-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.26		0.20	0.10	mg/L	20		7196A	Dissolved

Client Sample ID: AW-A14_20190320 — Lab Sample ID: 480-150574-7

No Detections.

Client Sample ID: SUMP-B_20190320 — Lab Sample ID: 480-150574-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.10		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: SUMP-A_20190320 — Lab Sample ID: 480-150574-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.35		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: MW-OB26_20190320 — Lab Sample ID: 480-150574-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.024		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: EB_20190320 — Lab Sample ID: 480-150574-11

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: EW-B5_20190320 — Lab Sample ID: 480-150574-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.0066	J	0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: DUP_20190320 — Lab Sample ID: 480-150574-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.15		0.010	0.0050	mg/L	1		7196A	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-OB30_20190320 — Lab Sample ID: 480-150574-1

Date Collected: 03/20/19 13:14
Date Received: 03/21/19 01:00
Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.29		0.010	0.0050	mg/L			03/21/19 09:00	1

Client Sample ID: MW-OB31_20190320 — Lab Sample ID: 480-150574-2

Date Collected: 03/20/19 15:25
Date Received: 03/21/19 01:00
Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010		0.010	0.0050	mg/L			03/21/19 09:00	1

Client Sample ID: MW-OB32_20190320 — Lab Sample ID: 480-150574-3

Date Collected: 03/20/19 11:20
Date Received: 03/21/19 01:00
Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.45		0.020	0.010	mg/L			03/21/19 09:00	2

Client Sample ID: MW-OB33_20190320 — Lab Sample ID: 480-150574-4

Date Collected: 03/20/19 11:25
Date Received: 03/21/19 01:00
Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	1.1		0.050	0.025	mg/L			03/21/19 09:00	5

Client Sample ID: MW-OB34_20190320 — Lab Sample ID: 480-150574-5

Date Collected: 03/20/19 09:44
Date Received: 03/21/19 01:00
Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.021		0.010	0.0050	mg/L			03/21/19 09:00	1

Client Sample ID: AW-C11_20190320 — Lab Sample ID: 480-150574-6

Date Collected: 03/20/19 13:49
Date Received: 03/21/19 01:00
Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.26		0.20	0.10	mg/L			03/21/19 09:00	20

Client Sample ID: AW-A14_20190320 — Lab Sample ID: 480-150574-7

Date Collected: 03/20/19 14:25
Date Received: 03/21/19 01:00
Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/21/19 09:00	1

Client Sample ID: SUMP-B_20190320 — **Lab Sample ID: 480-150574-8**
Date Collected: 03/20/19 15:14 — **Matrix: Water**
Date Received: 03/21/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.10**		0.010	0.0050	mg/L			03/21/19 09:00	1

Client Sample ID: SUMP-A_20190320 — **Lab Sample ID: 480-150574-9**
Date Collected: 03/20/19 15:34 — **Matrix: Water**
Date Received: 03/21/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.35**		0.010	0.0050	mg/L			03/21/19 09:00	1

Client Sample ID: MW-OB26_20190320 — **Lab Sample ID: 480-150574-10**
Date Collected: 03/20/19 14:42 — **Matrix: Water**
Date Received: 03/21/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.024**		0.010	0.0050	mg/L			03/21/19 09:00	1

Client Sample ID: EB_20190320 — **Lab Sample ID: 480-150574-11**
Date Collected: 03/20/19 15:00 — **Matrix: Water**
Date Received: 03/21/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U F1	0.010	0.0050	mg/L			03/21/19 09:00	1

Client Sample ID: EW-B5_20190320 — **Lab Sample ID: 480-150574-12**
Date Collected: 03/20/19 15:33 — **Matrix: Water**
Date Received: 03/21/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.0066**	**J**	0.010	0.0050	mg/L			03/21/19 09:00	1

Client Sample ID: DUP_20190320 — **Lab Sample ID: 480-150574-13**
Date Collected: 03/20/19 00:00 — **Matrix: Water**
Date Received: 03/21/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.15**		0.010	0.0050	mg/L			03/21/19 09:00	1

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-464116/27
Matrix: Water
Analysis Batch: 464116

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/21/19 09:00	1

Lab Sample ID: MB 480-464116/3
Matrix: Water
Analysis Batch: 464116

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/21/19 09:00	1

Lab Sample ID: LCS 480-464116/28
Matrix: Water
Analysis Batch: 464116

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0496		mg/L		99	85 - 115

Lab Sample ID: LCS 480-464116/4
Matrix: Water
Analysis Batch: 464116

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0496		mg/L		99	85 - 115

Lab Sample ID: 480-150574-6 MS
Matrix: Water
Analysis Batch: 464116

Client Sample ID: AW-C11_20190320
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.26		1.00	1.24		mg/L		98	85 - 115

Lab Sample ID: 480-150574-6 MSD
Matrix: Water
Analysis Batch: 464116

Client Sample ID: AW-C11_20190320
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	0.26		1.00	1.19		mg/L		93	85 - 115	4	20

Lab Sample ID: 480-150574-7 MS
Matrix: Water
Analysis Batch: 464116

Client Sample ID: AW-A14_20190320
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.010	U	0.0500	0.0434		mg/L		87	85 - 115

Lab Sample ID: 480-150574-11 MS
Matrix: Water
Analysis Batch: 464116

Client Sample ID: EB_20190320
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.010	U F1	0.0500	0.0876	F1	mg/L		175	85 - 115

Lab Sample ID: 480-150574-7 DU
Client Sample ID: AW-A14_20190320
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 464116

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chromium, hexavalent	0.010	U	0.010	U	mg/L		NC	20

Lab Sample ID: 480-150574-11 DU
Client Sample ID: EB_20190320
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 464116

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chromium, hexavalent	0.010	U F1	0.010	U	mg/L		NC	20

General Chemistry

Analysis Batch: 464116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150574-1	MW-OB30_20190320	Dissolved	Water	7196A	
480-150574-2	MW-OB31_20190320	Dissolved	Water	7196A	
480-150574-3	MW-OB32_20190320	Dissolved	Water	7196A	
480-150574-4	MW-OB33_20190320	Dissolved	Water	7196A	
480-150574-5	MW-OB34_20190320	Dissolved	Water	7196A	
480-150574-6	AW-C11_20190320	Dissolved	Water	7196A	
480-150574-7	AW-A14_20190320	Dissolved	Water	7196A	
480-150574-8	SUMP-B_20190320	Dissolved	Water	7196A	
480-150574-9	SUMP-A_20190320	Dissolved	Water	7196A	
480-150574-10	MW-OB26_20190320	Dissolved	Water	7196A	
480-150574-11	EB_20190320	Dissolved	Water	7196A	
480-150574-12	EW-B5_20190320	Dissolved	Water	7196A	
480-150574-13	DUP_20190320	Dissolved	Water	7196A	
MB 480-464116/27	Method Blank	Total/NA	Water	7196A	
MB 480-464116/3	Method Blank	Total/NA	Water	7196A	
LCS 480-464116/28	Lab Control Sample	Total/NA	Water	7196A	
LCS 480-464116/4	Lab Control Sample	Total/NA	Water	7196A	
480-150574-6 MS	AW-C11_20190320	Dissolved	Water	7196A	
480-150574-6 MSD	AW-C11_20190320	Dissolved	Water	7196A	
480-150574-7 MS	AW-A14_20190320	Dissolved	Water	7196A	
480-150574-11 MS	EB_20190320	Dissolved	Water	7196A	
480-150574-7 DU	AW-A14_20190320	Dissolved	Water	7196A	
480-150574-11 DU	EB_20190320	Dissolved	Water	7196A	

Client Sample ID: MW-OB30_20190320
Lab Sample ID: 480-150574-1
Date Collected: 03/20/19 13:14
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: MW-OB31_20190320
Lab Sample ID: 480-150574-2
Date Collected: 03/20/19 15:25
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: MW-OB32_20190320
Lab Sample ID: 480-150574-3
Date Collected: 03/20/19 11:20
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		2	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: MW-OB33_20190320
Lab Sample ID: 480-150574-4
Date Collected: 03/20/19 11:25
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		5	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: MW-OB34_20190320
Lab Sample ID: 480-150574-5
Date Collected: 03/20/19 09:44
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: AW-C11_20190320
Lab Sample ID: 480-150574-6
Date Collected: 03/20/19 13:49
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		20	464116	03/21/19 09:00	A1A	TAL BUF

Lab Chronicle

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150574-1

Client Sample ID: AW-A14_20190320

Lab Sample ID: 480-150574-7
Date Collected: 03/20/19 14:25
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: SUMP-B_20190320

Lab Sample ID: 480-150574-8
Date Collected: 03/20/19 15:14
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: SUMP-A_20190320

Lab Sample ID: 480-150574-9
Date Collected: 03/20/19 15:34
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: MW-OB26_20190320

Lab Sample ID: 480-150574-10
Date Collected: 03/20/19 14:42
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: EB_20190320

Lab Sample ID: 480-150574-11
Date Collected: 03/20/19 15:00
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: EW-B5_20190320

Lab Sample ID: 480-150574-12
Date Collected: 03/20/19 15:33
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Client Sample ID: DUP_20190320
Date Collected: 03/20/19 00:00
Date Received: 03/21/19 01:00

Lab Sample ID: 480-150574-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464116	03/21/19 09:00	A1A	TAL BUF

Laboratory References:

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

Accreditation/Certification Summary

Client: Ashland LLC
TestAmerica Job ID: 480-150574-1
Project/Site: Hercules Glens Falls 1Q19

Laboratory: TestAmerica Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19 *

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-19
Alaska	State Program	10		06-30-19
Alaska (UST)	State Program	10	UST-104	09-22-19
ANAB	DoD / DOE		L2463	09-22-19
ANAB	ISO/IEC 17025		L2463.01	09-22-19
Arizona	State Program	9	AZ0808	12-14-19
Arkansas DEQ	State Program	6	88-0692	02-01-20
California	State Program	9	2939	06-30-19
Colorado	State Program	8	N/A	12-31-19
Connecticut	State Program	1	PH-0161	03-31-21
Florida	NELAP	4	E87052	06-30-19
GA Dept. of Agriculture	State Program	4	N/A	06-12-19
Georgia	State Program	4	N/A	06-30-19
Georgia	State Program	4	803	06-30-19
Guam	State Program	9	15-005r	04-17-19
Hawaii	State Program	9	N/A	06-30-19
Illinois	NELAP	5	200022	11-30-19
Indiana	State Program	5	N/A	06-30-19
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-19
Kentucky (UST)	State Program	4	18	06-30-19
Kentucky (WW)	State Program	4	90084	12-31-19
Louisiana	NELAP	6	30690	06-30-19
Louisiana (DW)	NELAP	6	LA160019	12-31-19
Maine	State Program	1	GA00006	09-25-20
Maryland	State Program	3	250	12-31-19
Massachusetts	State Program	1	M-GA006	06-30-19
Michigan	State Program	5	9925	03-05-19 *
Mississippi	State Program	4	N/A	06-30-19
Nebraska	State Program	7	TestAmerica-Savannah	06-30-19
New Jersey	NELAP	2	GA769	06-30-19
New Mexico	State Program	6	N/A	06-30-19
North Carolina (DW)	State Program	4	13701	07-31-19
North Carolina (WW/SW)	State Program	4	269	12-31-19
Oklahoma	State Program	6	9984	08-31-19
Pennsylvania	NELAP	3	68-00474	06-30-19
Puerto Rico	State Program	2	GA00006	01-01-20
South Carolina	State Program	4	98001	06-30-19
Tennessee	State Program	4	TN02961	06-30-19
Texas	NELAP	6	T104704185-16-9	11-30-19
Texas (DW)	State Program	1	T104704185	06-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
Virginia	NELAP	3	460161	06-14-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Laboratory: TestAmerica Savannah (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C805	06-10-19
West Virginia (DW)	State Program	3	9950C	12-31-19
West Virginia DEP	State Program	3	094	06-30-19
Wisconsin	State Program	5	999819810	08-31-19
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method	Method Description	Protocol	Laboratory
7196A	Chromium, Hexavalent	SW846	TAL BUF

Protocol References:

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

Laboratory References:

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

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-150574-1	MW-OB30_20190320	Water	03/20/19 13:14	03/21/19 01:00
480-150574-2	MW-OB31_20190320	Water	03/20/19 15:25	03/21/19 01:00
480-150574-3	MW-OB32_20190320	Water	03/20/19 11:20	03/21/19 01:00
480-150574-4	MW-OB33_20190320	Water	03/20/19 11:25	03/21/19 01:00
480-150574-5	MW-OB34_20190320	Water	03/20/19 09:44	03/21/19 01:00
480-150574-6	AW-C11_20190320	Water	03/20/19 13:49	03/21/19 01:00
480-150574-7	AW-A14_20190320	Water	03/20/19 14:25	03/21/19 01:00
480-150574-8	SUMP-B_20190320	Water	03/20/19 15:14	03/21/19 01:00
480-150574-9	SUMP-A_20190320	Water	03/20/19 15:34	03/21/19 01:00
480-150574-10	MW-OB26_20190320	Water	03/20/19 14:42	03/21/19 01:00
480-150574-11	EB_20190320	Water	03/20/19 15:00	03/21/19 01:00
480-150574-12	EW-B5_20190320	Water	03/20/19 15:33	03/21/19 01:00
480-150574-13	DUP_20190320	Water	03/20/19 00:00	03/21/19 01:00

Albany

#224

Chain of Custody Record 316938

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact
Company Name: Ashland Inc.
Address: 5200 Blazer Parkway DS-4
City/State/Zip: Dublin OH 43017
Phone: 614-796-6146
~~Fax~~ email: Jevandrauck@ashland.com
Project Name: Hercules Glens Falls Quarterly EBM
Site: Ashland Glens Falls
P O # 4562471936

Project Manager: Mr. Jim Vandrauck
Tel/Fax:
Site Contact: Garrett Group
Lab Contact: Eddie T. Barrett
Date: 3/20/19
Carrier:
COC No: 1 of 2 COCs
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

480-150574 Chain of Custody

Analysis Turnaround Time
☐ CALENDAR DAYS ☐ WORKING DAYS
TAT if different from Below STD
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	7196A - Chromium Hexavalent (Field Filtered)	Sample Specific Notes:
MW-OB30_20190320	3/20/19	1314	G	water	1	Y	N	X	
MW-OB31_20190320		1525			1	Y	N	X	
MW-OB32_20190320		1120			1	Y	N	X	
MW-OB33_20190320		1125			1	Y	N	X	
MW-OB34_20190320		944			1	Y	N	X	
AW-C11_20190320		1349			3	Y	Y	X	ms/msd
AW-A14_20190320		1425			1	Y	N	X	
SUMP-B_20190320		1514			1	Y	N	X	
Sump-A_20190320		1534			1	Y	N	X	
MW-OB26_20190320		1442			1	Y	N	X	
EB_20190320		1500			1	Y	N	X	
EW-B5_20190320	3/20/19	1533	G	water	1	Y	N	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No
Custody Seal No.:
Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Antea Group	3/20/19 1710	Karl Zoch	TA	3/20/19 1710
Karl Zoch	TA	3/20/19 1730	[signature]		03/21/19 0100
			Received in Laboratory by:		

1.6 #1

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

#224
Albany

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Garrett Crowe	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 680-102348-40197.6
Client Contact: Mr. Jim Vondracek	Phone: 8609927656	E-Mail: eddie.barnett@testamericainc.com		Page: ~~Page 6 of 7~~ 20 of 20
Company: Ashland LLC				Job #:
Address: 5200 Blazer Parkway DS-4	Due Date Requested:			
City: Dublin	TAT Requested (days): STD			
State, Zip: OH, 43017				
Phone: 614-790-6146(Tel)	PO #: PO787667			
Email: jevondracek@ashland.com	WO #: Task 400			
Project Name: Hercules Glens Falls O&M 2019	Project #: 68000956			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent	6020A - Dissolved Metals	2540C_Calcd - Total Dissolved Solids	2340C - Hardness as calcium carbonate	Total Number of containers	Special Instructions/Note:
				Preservation Code:			B	N	D	N	D		
DUP 20190320	3/20/19	—	G	Water	Y	N		X				1	
				Water				X 6C					
KZ 3/20/19				Water				X					
				Water				X					
				Water				X					
				Water				X					
				Water									
				Water									
				Water									
				Water									
				Water									

FF

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: [signature]	Date/Time: 3/20/19 1710	Company: Anchor Burp	Received by: Karl Zach	Date/Time: 3/20/19 1710	Company: TA
Relinquished by: Karl Zach	Date/Time: 3/20/19 1730	Company: TA	Received by: [signature]	Date/Time: 03/21/19 0100	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 1.6 #1		

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-150574-1

Login Number: 150574
List Number: 1
Creator: Velickovic, Zoran

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing
TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-150575-1
Client Project/Site: Hercules Glens Falls 1Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
4/4/2019 7:14:26 AM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

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

Job ID: 480-150575-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 1Q19

Report Number: 480-150575-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 03/21/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 0.6º C.

METALS (ICPMS) - DISSOLVED
Samples MW-OB30_20190320 (480-150575-1), MW-OB31_20190320 (480-150575-2), MW-OB32_20190320 (480-150575-3), MW-OB33_20190320 (480-150575-4), MW-OB34_20190320 (480-150575-5), AW-C11_20190320 (480-150575-6), AW-A14_20190320 (480-150575-7), SUMP-B_20190320 (480-150575-8), SUMP-A_20190320 (480-150575-9), MW-OB26_20190320 (480-150575-10), EB_20190320 (480-150575-11), EW-B5_20190320 (480-150575-12) and DUP_20190320 (480-150575-13) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared on 03/21/2019 and analyzed on 03/30/2019 and 04/01/2019.

Dissolved Chromium recovered high for the MS of sample AW-C11_20190320MS (480-150575-6) in batch 480-465657. Dissolved Chromium recovered high for the MSD of sample AW-C11_20190320MSD (480-150575-6) in batch 480-465657. Refer to the QC report for details.

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

TOTAL CYANIDE
Samples MW-OB30_20190320 (480-150575-1), MW-OB31_20190320 (480-150575-2), MW-OB32_20190320 (480-150575-3), MW-OB33_20190320 (480-150575-4), MW-OB34_20190320 (480-150575-5), AW-C11_20190320 (480-150575-6), AW-A14_20190320 (480-150575-7), SUMP-B_20190320 (480-150575-8), SUMP-A_20190320 (480-150575-9), MW-OB26_20190320 (480-150575-10), EB_20190320 (480-150575-11), EW-B5_20190320 (480-150575-12) and DUP_20190320 (480-150575-13) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 03/28/2019.

Cyanide, Total recovered low for the MS of sample AW-C11_20190320MS (480-150575-6) in batch 680-564113. Cyanide, Total recovered low for the MSD of sample AW-C11_20190320MSD (480-150575-6) in batch 680-564113. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Refer to the QC report for details.

Samples MW-OB32_20190320 (480-150575-3)[10X], MW-OB33_20190320 (480-150575-4)[10X], MW-OB34_20190320 (480-150575-5)[10X], SUMP-B_20190320 (480-150575-8)[10X], SUMP-A_20190320 (480-150575-9)[10X], EW-B5_20190320 (480-150575-12)[10X] and DUP_20190320 (480-150575-13)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

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Client Sample ID: MW-OB30_20190320 — Lab Sample ID: 480-150575-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	290		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.029		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: MW-OB31_20190320 — Lab Sample ID: 480-150575-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	200		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.068		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: MW-OB32_20190320 — Lab Sample ID: 480-150575-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	460		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.88		0.10	0.025	mg/L	10		9012B	Total/NA

Client Sample ID: MW-OB33_20190320 — Lab Sample ID: 480-150575-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	1300		15	3.6	ug/L	10		6020A	Dissolved
Cyanide, Total	0.39		0.10	0.025	mg/L	10		9012B	Total/NA

Client Sample ID: MW-OB34_20190320 — Lab Sample ID: 480-150575-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	130		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.33		0.10	0.025	mg/L	10		9012B	Total/NA

Client Sample ID: AW-C11_20190320 — Lab Sample ID: 480-150575-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	830		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.083	F1	0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: AW-A14_20190320 — Lab Sample ID: 480-150575-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	3.7		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.038		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: SUMP-B_20190320 — Lab Sample ID: 480-150575-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	140		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.66		0.10	0.025	mg/L	10		9012B	Total/NA

Client Sample ID: SUMP-A_20190320 — Lab Sample ID: 480-150575-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	420		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.42		0.10	0.025	mg/L	10		9012B	Total/NA

Client Sample ID: MW-OB26_20190320 — Lab Sample ID: 480-150575-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	37		1.5	0.36	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-OB26_20190320 (Continued)
Lab Sample ID: 480-150575-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.093		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: EB_20190320
Lab Sample ID: 480-150575-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	0.52	J	1.5	0.36	ug/L	1		6020A	Dissolved

Client Sample ID: EW-B5_20190320
Lab Sample ID: 480-150575-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	9800		750	180	ug/L	500		6020A	Dissolved
Cyanide, Total	0.35		0.10	0.025	mg/L	10		9012B	Total/NA

Client Sample ID: DUP_20190320
Lab Sample ID: 480-150575-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	9600		750	180	ug/L	500		6020A	Dissolved
Cyanide, Total	0.32		0.10	0.025	mg/L	10		9012B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-OB30_20190320
Lab Sample ID: 480-150575-1
Date Collected: 03/20/19 13:14
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	290		1.5	0.36	ug/L		03/21/19 12:35	03/30/19 09:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.029		0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:11	1

Client Sample ID: MW-OB31_20190320
Lab Sample ID: 480-150575-2
Date Collected: 03/20/19 15:25
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	200		1.5	0.36	ug/L		03/21/19 12:35	03/30/19 09:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.068		0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:12	1

Client Sample ID: MW-OB32_20190320
Lab Sample ID: 480-150575-3
Date Collected: 03/20/19 11:20
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	460		1.5	0.36	ug/L		03/21/19 12:35	03/30/19 09:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.88		0.10	0.025	mg/L		03/28/19 04:31	03/28/19 10:49	10

Client Sample ID: MW-OB33_20190320
Lab Sample ID: 480-150575-4
Date Collected: 03/20/19 11:25
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1300		15	3.6	ug/L		03/21/19 12:35	04/01/19 16:01	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.39		0.10	0.025	mg/L		03/28/19 04:31	03/28/19 10:50	10

Client Sample ID: MW-OB34_20190320
Lab Sample ID: 480-150575-5
Date Collected: 03/20/19 09:44
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	130		1.5	0.36	ug/L		03/21/19 12:35	03/30/19 09:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.33		0.10	0.025	mg/L		03/28/19 04:31	03/28/19 10:51	10

Client Sample Results

Client: Ashland LLC
Job ID: 480-150575-1
Project/Site: Hercules Glens Falls 1Q19

Client Sample ID: AW-C11_20190320
Lab Sample ID: 480-150575-6
Date Collected: 03/20/19 13:49
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	830		1.5	0.36	ug/L		03/21/19 12:35	03/30/19 09:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.083	F1	0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:17	1

Client Sample ID: AW-A14_20190320
Lab Sample ID: 480-150575-7
Date Collected: 03/20/19 14:25
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	3.7		1.5	0.36	ug/L		03/21/19 12:35	03/30/19 10:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.038		0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:22	1

Client Sample ID: SUMP-B_20190320
Lab Sample ID: 480-150575-8
Date Collected: 03/20/19 15:14
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	140		1.5	0.36	ug/L		03/21/19 12:35	03/30/19 10:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.66		0.10	0.025	mg/L		03/28/19 04:31	03/28/19 10:52	10

Client Sample ID: SUMP-A_20190320
Lab Sample ID: 480-150575-9
Date Collected: 03/20/19 15:34
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	420		1.5	0.36	ug/L		03/21/19 12:35	03/30/19 10:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.42		0.10	0.025	mg/L		03/28/19 04:31	03/28/19 10:53	10

Client Sample ID: MW-OB26_20190320
Lab Sample ID: 480-150575-10
Date Collected: 03/20/19 14:42
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	37		1.5	0.36	ug/L		03/21/19 12:35	03/30/19 10:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.093		0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:25	1

Client Sample Results

Client: Ashland LLC
Job ID: 480-150575-1
Project/Site: Hercules Glens Falls 1Q19

Client Sample ID: EB_20190320
Lab Sample ID: 480-150575-11
Date Collected: 03/20/19 15:00
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.52	J	1.5	0.36	ug/L		03/21/19 12:35	03/30/19 10:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:27	1

Client Sample ID: EW-B5_20190320
Lab Sample ID: 480-150575-12
Date Collected: 03/20/19 15:33
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	9800		750	180	ug/L		03/21/19 12:35	04/01/19 16:04	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.35		0.10	0.025	mg/L		03/28/19 04:31	03/28/19 10:54	10

Client Sample ID: DUP_20190320
Lab Sample ID: 480-150575-13
Date Collected: 03/20/19 00:00
Matrix: Water
Date Received: 03/21/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	9600		750	180	ug/L		03/21/19 12:35	04/01/19 16:15	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.32		0.10	0.025	mg/L		03/28/19 04:31	03/28/19 10:55	10

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 480-464067/1-A | **Client Sample ID: Method Blank**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 465657 | **Prep Batch: 464067**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.5	U	1.5	0.36	ug/L		03/21/19 12:35	03/30/19 09:26	1

Lab Sample ID: LCS 480-464067/2-A | **Client Sample ID: Lab Control Sample**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 465657 | **Prep Batch: 464067**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	20.0	19.9		ug/L		100	80 - 120

Lab Sample ID: LCSD 480-464067/25-A | **Client Sample ID: Lab Control Sample Dup**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 465657 | **Prep Batch: 464067**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Chromium	20.0	19.7		ug/L		99	80 - 120	1	20

Lab Sample ID: 480-150575-6 MS | **Client Sample ID: AW-C11_20190320**
Matrix: Water | **Prep Type: Dissolved**
Analysis Batch: 465657 | **Prep Batch: 464067**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	830		20.0	924	E 4	ug/L		492	75 - 125

Lab Sample ID: 480-150575-6 MSD | **Client Sample ID: AW-C11_20190320**
Matrix: Water | **Prep Type: Dissolved**
Analysis Batch: 465657 | **Prep Batch: 464067**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Chromium	830		20.0	889	4	ug/L		321	75 - 125	4	20

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 680-564049/1-A | **Client Sample ID: Method Blank**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 564113 | **Prep Batch: 564049**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:43	1

Lab Sample ID: LCS 680-564049/2-A | **Client Sample ID: Lab Control Sample**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 564113 | **Prep Batch: 564049**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0519		mg/L		104	85 - 115

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: 480-150575-6 MS
Matrix: Water
Analysis Batch: 564113

Client Sample ID: AW-C11_20190320
Prep Type: Total/NA
Prep Batch: 564049

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.083	F1	0.0500	0.115	F1	mg/L		64	85 - 115

Lab Sample ID: 480-150575-6 MSD
Matrix: Water
Analysis Batch: 564113

Client Sample ID: AW-C11_20190320
Prep Type: Total/NA
Prep Batch: 564049

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.083	F1	0.0500	0.110	F1	mg/L		54	85 - 115	4	20

Lab Sample ID: MB 680-564050/1-A
Matrix: Water
Analysis Batch: 564113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564050

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		03/28/19 06:00	03/28/19 10:32	1

Metals

Prep Batch: 464067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150575-1	MW-OB30_20190320	Dissolved	Water	3020A	
480-150575-2	MW-OB31_20190320	Dissolved	Water	3020A	
480-150575-3	MW-OB32_20190320	Dissolved	Water	3020A	
480-150575-4	MW-OB33_20190320	Dissolved	Water	3020A	
480-150575-5	MW-OB34_20190320	Dissolved	Water	3020A	
480-150575-6	AW-C11_20190320	Dissolved	Water	3020A	
480-150575-7	AW-A14_20190320	Dissolved	Water	3020A	
480-150575-8	SUMP-B_20190320	Dissolved	Water	3020A	
480-150575-9	SUMP-A_20190320	Dissolved	Water	3020A	
480-150575-10	MW-OB26_20190320	Dissolved	Water	3020A	
480-150575-11	EB_20190320	Dissolved	Water	3020A	
480-150575-12	EW-B5_20190320	Dissolved	Water	3020A	
480-150575-13	DUP_20190320	Dissolved	Water	3020A	
MB 480-464067/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-464067/2-A	Lab Control Sample	Total/NA	Water	3020A	
LCSD 480-464067/25-A	Lab Control Sample Dup	Total/NA	Water	3020A	
480-150575-6 MS	AW-C11_20190320	Dissolved	Water	3020A	
480-150575-6 MSD	AW-C11_20190320	Dissolved	Water	3020A	

Analysis Batch: 465657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150575-1	MW-OB30_20190320	Dissolved	Water	6020A	464067
480-150575-2	MW-OB31_20190320	Dissolved	Water	6020A	464067
480-150575-3	MW-OB32_20190320	Dissolved	Water	6020A	464067
480-150575-5	MW-OB34_20190320	Dissolved	Water	6020A	464067
480-150575-6	AW-C11_20190320	Dissolved	Water	6020A	464067
480-150575-7	AW-A14_20190320	Dissolved	Water	6020A	464067
480-150575-8	SUMP-B_20190320	Dissolved	Water	6020A	464067
480-150575-9	SUMP-A_20190320	Dissolved	Water	6020A	464067
480-150575-10	MW-OB26_20190320	Dissolved	Water	6020A	464067
480-150575-11	EB_20190320	Dissolved	Water	6020A	464067
MB 480-464067/1-A	Method Blank	Total/NA	Water	6020A	464067
LCS 480-464067/2-A	Lab Control Sample	Total/NA	Water	6020A	464067
LCSD 480-464067/25-A	Lab Control Sample Dup	Total/NA	Water	6020A	464067
480-150575-6 MS	AW-C11_20190320	Dissolved	Water	6020A	464067
480-150575-6 MSD	AW-C11_20190320	Dissolved	Water	6020A	464067

Analysis Batch: 465764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150575-4	MW-OB33_20190320	Dissolved	Water	6020A	464067
480-150575-12	EW-B5_20190320	Dissolved	Water	6020A	464067
480-150575-13	DUP_20190320	Dissolved	Water	6020A	464067

General Chemistry

Prep Batch: 564049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150575-1	MW-OB30_20190320	Total/NA	Water	9012B	
480-150575-2	MW-OB31_20190320	Total/NA	Water	9012B	
480-150575-3	MW-OB32_20190320	Total/NA	Water	9012B	
480-150575-4	MW-OB33_20190320	Total/NA	Water	9012B	

General Chemistry (Continued)

Prep Batch: 564049 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150575-5	MW-OB34_20190320	Total/NA	Water	9012B	
480-150575-6	AW-C11_20190320	Total/NA	Water	9012B	
480-150575-7	AW-A14_20190320	Total/NA	Water	9012B	
480-150575-8	SUMP-B_20190320	Total/NA	Water	9012B	
480-150575-9	SUMP-A_20190320	Total/NA	Water	9012B	
480-150575-10	MW-OB26_20190320	Total/NA	Water	9012B	
480-150575-11	EB_20190320	Total/NA	Water	9012B	
480-150575-12	EW-B5_20190320	Total/NA	Water	9012B	
480-150575-13	DUP_20190320	Total/NA	Water	9012B	
MB 680-564049/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-564049/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-150575-6 MS	AW-C11_20190320	Total/NA	Water	9012B	
480-150575-6 MSD	AW-C11_20190320	Total/NA	Water	9012B	

Prep Batch: 564050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-564050/1-A	Method Blank	Total/NA	Water	9012B	

Analysis Batch: 564113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150575-1	MW-OB30_20190320	Total/NA	Water	9012B	564049
480-150575-2	MW-OB31_20190320	Total/NA	Water	9012B	564049
480-150575-3	MW-OB32_20190320	Total/NA	Water	9012B	564049
480-150575-4	MW-OB33_20190320	Total/NA	Water	9012B	564049
480-150575-5	MW-OB34_20190320	Total/NA	Water	9012B	564049
480-150575-6	AW-C11_20190320	Total/NA	Water	9012B	564049
480-150575-7	AW-A14_20190320	Total/NA	Water	9012B	564049
480-150575-8	SUMP-B_20190320	Total/NA	Water	9012B	564049
480-150575-9	SUMP-A_20190320	Total/NA	Water	9012B	564049
480-150575-10	MW-OB26_20190320	Total/NA	Water	9012B	564049
480-150575-11	EB_20190320	Total/NA	Water	9012B	564049
480-150575-12	EW-B5_20190320	Total/NA	Water	9012B	564049
480-150575-13	DUP_20190320	Total/NA	Water	9012B	564049
MB 680-564049/1-A	Method Blank	Total/NA	Water	9012B	564049
MB 680-564050/1-A	Method Blank	Total/NA	Water	9012B	564050
LCS 680-564049/2-A	Lab Control Sample	Total/NA	Water	9012B	564049
480-150575-6 MS	AW-C11_20190320	Total/NA	Water	9012B	564049
480-150575-6 MSD	AW-C11_20190320	Total/NA	Water	9012B	564049

Lab Chronicle

Client: Ashland LLC Job ID: 480-150575-1
Project/Site: Hercules Glens Falls 1Q19

Client Sample ID: MW-OB30_20190320 **Lab Sample ID: 480-150575-1**
Date Collected: 03/20/19 13:14 **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 09:32	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:11	DAM	TAL SAV

Client Sample ID: MW-OB31_20190320 **Lab Sample ID: 480-150575-2**
Date Collected: 03/20/19 15:25 **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 09:43	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:12	DAM	TAL SAV

Client Sample ID: MW-OB32_20190320 **Lab Sample ID: 480-150575-3**
Date Collected: 03/20/19 11:20 **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 09:46	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		10	564113	03/28/19 10:49	DAM	TAL SAV

Client Sample ID: MW-OB33_20190320 **Lab Sample ID: 480-150575-4**
Date Collected: 03/20/19 11:25 **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		10	465764	04/01/19 16:01	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		10	564113	03/28/19 10:50	DAM	TAL SAV

Client Sample ID: MW-OB34_20190320 **Lab Sample ID: 480-150575-5**
Date Collected: 03/20/19 09:44 **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 09:51	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		10	564113	03/28/19 10:51	DAM	TAL SAV

Client Sample ID: AW-C11_20190320 — Lab Sample ID: 480-150575-6

Date Collected: 03/20/19 13:49 — **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 09:54	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:17	DAM	TAL SAV

Client Sample ID: AW-A14_20190320 — Lab Sample ID: 480-150575-7

Date Collected: 03/20/19 14:25 — **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 10:08	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:22	DAM	TAL SAV

Client Sample ID: SUMP-B_20190320 — Lab Sample ID: 480-150575-8

Date Collected: 03/20/19 15:14 — **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 10:19	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		10	564113	03/28/19 10:52	DAM	TAL SAV

Client Sample ID: SUMP-A_20190320 — Lab Sample ID: 480-150575-9

Date Collected: 03/20/19 15:34 — **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 10:22	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		10	564113	03/28/19 10:53	DAM	TAL SAV

Client Sample ID: MW-OB26_20190320 — Lab Sample ID: 480-150575-10

Date Collected: 03/20/19 14:42 — **Matrix: Water**
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 10:24	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:25	DAM	TAL SAV

Client Sample ID: EB_20190320
Lab Sample ID: 480-150575-11
Date Collected: 03/20/19 15:00
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		1	465657	03/30/19 10:27	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:27	DAM	TAL SAV

Client Sample ID: EW-B5_20190320
Lab Sample ID: 480-150575-12
Date Collected: 03/20/19 15:33
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		500	465764	04/01/19 16:04	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		10	564113	03/28/19 10:54	DAM	TAL SAV

Client Sample ID: DUP_20190320
Lab Sample ID: 480-150575-13
Date Collected: 03/20/19 00:00
Matrix: Water
Date Received: 03/21/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464067	03/21/19 12:35	MV	TAL BUF
Dissolved	Analysis	6020A		500	465764	04/01/19 16:15	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		10	564113	03/28/19 10:55	DAM	TAL SAV

Laboratory References:

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

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

Laboratory: Eurofins TestAmerica, Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10842	04-01-19 *

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9012B	9012B	Water	Cyanide, Total

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL SAV
3020A	Preparation, Total Metals	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Ashland LLC
TestAmerica Job ID: 480-150575-1
Project/Site: Hercules Glens Falls 1Q19

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-150575-1	MW-OB30_20190320	Water	03/20/19 13:14	03/21/19 01:00
480-150575-2	MW-OB31_20190320	Water	03/20/19 15:25	03/21/19 01:00
480-150575-3	MW-OB32_20190320	Water	03/20/19 11:20	03/21/19 01:00
480-150575-4	MW-OB33_20190320	Water	03/20/19 11:25	03/21/19 01:00
480-150575-5	MW-OB34_20190320	Water	03/20/19 09:44	03/21/19 01:00
480-150575-6	AW-C11_20190320	Water	03/20/19 13:49	03/21/19 01:00
480-150575-7	AW-A14_20190320	Water	03/20/19 14:25	03/21/19 01:00
480-150575-8	SUMP-B_20190320	Water	03/20/19 15:14	03/21/19 01:00
480-150575-9	SUMP-A_20190320	Water	03/20/19 15:34	03/21/19 01:00
480-150575-10	MW-OB26_20190320	Water	03/20/19 14:42	03/21/19 01:00
480-150575-11	EB_20190320	Water	03/20/19 15:00	03/21/19 01:00
480-150575-12	EW-B5_20190320	Water	03/20/19 15:33	03/21/19 01:00
480-150575-13	DUP_20190320	Water	03/20/19 00:00	03/21/19 01:00

Albany
#224

Chain of Custody Record

316937

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact		
Company Name: Ashland Inc.	Project Manager: Mr. Jim Vondracek	Site Contact: Garrett Crowe
Address: 5200 Blazer Parkway DS5-4	Tel/Fax:	Lab Contact: Eddie T. Barnett
City/State/Zip: Dublin OH 43017	Analysis Turnaround Time: ☐ CALENDAR DAYS ☐ WORKING DAYS	Date: 3/20/19
Phone: 614-790-6146	TAT if different from Below STD	Carrier:
~~Fax~~ email: Jsvondracek@ashland.com	☐ 2 weeks	COC No: 1 of 1 COCs
Project Name: Hercules Glens Falls Quarterly event	☐ 1 week	Sampler: Garrett Crowe
Site: Ashland Glens Falls	☐ 2 days	For Lab Use Only: Walk-in Client: Lab Sampling:
P O # 4502471936	☐ 1 day	Job / SDG No.:

480-150575 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	9012B-(Cyanide, total)	6020A-Dissolved total Chromium (Field filtered)	Sample Specific Notes:
MW-0B30_20190320	3/20/19	1314	G	water	2	Y	N	X	X	
MW-0B31_20190320		1525	G		2	Y	N	X	X	
MW-0B32_20190320		1120	G		2	Y	N	X	X	
MW-0B33_20190320		1125	G		2	Y	N	X	X	
MW-0B34_20190320		944	G		2	Y	N	X	X	
AW-C11_20190320		1349	G		4	Y	Y	X	X	ms/msd
AW-A14_20190320		1425	G		2	Y	N	X	X	
SUMP-B_20190320		1514	G		2	Y	N	X	X	
SUMP-A_20190320		1534	G		2	Y	N	X	X	
MW-0B26_20190320		1442	G		2	Y	N	X	X	
EB-20190320	3/20/19	1500	G	water	2	Y	N	X	X	
EW-B5_20190302	3/20/19	1533	G	water	2	Y	N	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ______ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ______ Corr'd: ______ | Therm ID No.: ______

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Antea Group	3/20/19 1710	Kal Zader	TA	3/20/19 1710
Relinquished by: Kal Zader	Company: TA	Date/Time: 3/20/19 1730	Received by: [signature]	Company:	Date/Time: 03/21/19 0100
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

0.6 #1

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Albany
#224

Chain of Custody Record

68000956

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information			
Client Contact: Mr. Jim Vondracek	Sampler: Garrett Crowe	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):
Company: Ashland LLC	Phone: 860 992 2636	E-Mail: eddie.barnett@testamericainc.com	COC No: 680-102348-40197.5
Address: 5200 Blazer Parkway DS-4	Due Date Requested:		Page: ~~Page 5 of 7~~ 2 of 2
City: Dublin	TAT Requested (days): FA STD		Job #:
State, Zip: OH, 43017			
Phone: 614-790-6146(Tel)	PO #: PO787667		
Email: jevondracek@ashland.com	WO #: Task 400		
Project Name: Hercules Glens Falls O&M 2019	Project #: 68000956		
Site: Glens Falls	SSOW#:		

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent	6020A - ~~Dissolved Metals~~ Dissolved total chromium (FF)	2540C_Calcd - Total Dissolved Solids	2340C - Hardness as calcium carbonate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				B	N	D	N	D		
DUP_20190320	3/20/19	—	6	Water	Y	N	X		X			2	
				Water									
	KZ 3/21/19			Water									
				Water									
				Water									
				Water									
				Water									
				Water									
				Water									
				Water									
				Water									

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ______ Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by: [signature]	3/20/19 1710	AnteaGroup	Received by: [signature]	3/20/19 1710	TA
Relinquished by: [signature]	3/20/19 1230	Company	Received by: [signature]	03/21/19 900	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.6 #1

Ver: 01/16/2019

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-48415.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-150575-1
Address: 5102 LaRoche Avenue,	Due Date Requested: 4/2/2019	**Analysis Requested**		**Preservation Codes:**
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls 1Q19	Project #: 68000956			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep (MOD) Local Method	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
MW-OB30_20190320 (480-150575-1)	3/20/19	13:14 Eastern		Water			X	1	
MW-OB31_20190320 (480-150575-2)	3/20/19	15:25 Eastern		Water			X	1	
MW-OB32_20190320 (480-150575-3)	3/20/19	11:20 Eastern		Water			X	1	
MW-OB33_20190320 (480-150575-4)	3/20/19	11:25 Eastern		Water			X	1	
MW-OB34_20190320 (480-150575-5)	3/20/19	09:44 Eastern		Water			X	1	
AW-C11_20190320 (480-150575-6)	3/20/19	13:49 Eastern		Water			X	1	
AW-C11_20190320 (480-150575-6MS)	3/20/19	13:49 Eastern	MS	Water			X	1	
AW-C11_20190320 (480-150575-6MSD)	3/20/19	13:49 Eastern	MSD	Water			X	1	
AW-A14_20190320 (480-150575-7)	3/20/19	14:25 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification

Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 3-21-19 1500	Company: TAB	Received by: [signature]	Date/Time: 3-22-19 0921	Company: TASAV
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2.6/2.8			

Ver: 01/16/2019

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-48415.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-150575-1
Address: 5102 LaRoche Avenue,	Due Date Requested: 4/2/2019			
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls 1Q19	Project #: 68000956			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SUMP-B_20190320 (480-150575-8)	3/20/19	15:14 Eastern		Water			X	1	
SUMP-A_20190320 (480-150575-9)	3/20/19	15:34 Eastern		Water			X	1	
MW-OB26_20190320 (480-150575-10)	3/20/19	14:42 Eastern		Water			X	1	
EB_20190320 (480-150575-11)	3/20/19	15:00 Eastern		Water			X	1	
EW-B5_20190320 (480-150575-12)	3/20/19	15:33 Eastern		Water			X	1	
DUP_20190320 (480-150575-13)	3/20/19	Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months
Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 3-21-19 1500	Company: TAB	Received by: [signature]	Date/Time: 3-22-19 0921	Company: TASav
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2.6/2.8		

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-150575-1

Login Number: 150575
List Number: 1
Creator: Velickovic, Zoran

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ashland LLC | Job Number: 480-150575-1

Login Number: 150575
List Number: 2
Creator: Nobles, Terry G

List Source: Eurofins TestAmerica, Savannah
List Creation: 03/22/19 12:49 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-150655-1
Client Project/Site: Hercules Glens Falls 1Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
3/29/2019 3:51:17 PM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 480-150655-1

Laboratory: TestAmerica Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 1Q19

Report Number: 480-150655-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 03/22/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

HEXAVALENT CHROMIUM
Samples SW-01_20190321 (480-150655-1), SW-02_20190321 (480-150655-2), SW-03_20190321 (480-150655-3), SW-04_20190321 (480-150655-4), MW-OB14_20190321 (480-150655-5), EB_20190321 (480-150655-6) and DUP_20190321 (480-150655-7) were analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The samples were analyzed on 03/22/2019.

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

Detection Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150655-1

Client Sample ID: SW-01_20190321 — Lab Sample ID: 480-150655-1

No Detections.

Client Sample ID: SW-02_20190321 — Lab Sample ID: 480-150655-2

No Detections.

Client Sample ID: SW-03_20190321 — Lab Sample ID: 480-150655-3

No Detections.

Client Sample ID: SW-04_20190321 — Lab Sample ID: 480-150655-4

No Detections.

Client Sample ID: MW-OB14_20190321 — Lab Sample ID: 480-150655-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.29		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: EB_20190321 — Lab Sample ID: 480-150655-6

No Detections.

Client Sample ID: DUP_20190321 — Lab Sample ID: 480-150655-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Ashland LLC
TestAmerica Job ID: 480-150655-1
Project/Site: Hercules Glens Falls 1Q19

Client Sample ID: SW-01_20190321
Lab Sample ID: 480-150655-1
Date Collected: 03/21/19 09:15
Matrix: Water
Date Received: 03/22/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/22/19 09:00	1

Client Sample ID: SW-02_20190321
Lab Sample ID: 480-150655-2
Date Collected: 03/21/19 10:19
Matrix: Water
Date Received: 03/22/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/22/19 09:00	1

Client Sample ID: SW-03_20190321
Lab Sample ID: 480-150655-3
Date Collected: 03/21/19 12:10
Matrix: Water
Date Received: 03/22/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/22/19 09:00	1

Client Sample ID: SW-04_20190321
Lab Sample ID: 480-150655-4
Date Collected: 03/21/19 13:45
Matrix: Water
Date Received: 03/22/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/22/19 09:00	1

Client Sample ID: MW-OB14_20190321
Lab Sample ID: 480-150655-5
Date Collected: 03/21/19 13:54
Matrix: Water
Date Received: 03/22/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.29**		0.010	0.0050	mg/L			03/22/19 09:00	1

Client Sample ID: EB_20190321
Lab Sample ID: 480-150655-6
Date Collected: 03/21/19 14:10
Matrix: Water
Date Received: 03/22/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/22/19 09:00	1

Client Sample ID: DUP_20190321
Lab Sample ID: 480-150655-7
Date Collected: 03/21/19 00:00
Matrix: Water
Date Received: 03/22/19 01:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/22/19 09:00	1

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-464315/3
Matrix: Water
Analysis Batch: 464315

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			03/22/19 09:00	1

Lab Sample ID: LCS 480-464315/4
Matrix: Water
Analysis Batch: 464315

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0470		mg/L		94	85 - 115

Lab Sample ID: 480-150655-3 MS
Matrix: Water
Analysis Batch: 464315

Client Sample ID: SW-03_20190321
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.010	U	0.0500	0.0424		mg/L		85	85 - 115

Lab Sample ID: 480-150655-3 MSD
Matrix: Water
Analysis Batch: 464315

Client Sample ID: SW-03_20190321
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	0.010	U	0.0500	0.0447		mg/L		89	85 - 115	5	20

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150655-1

General Chemistry

Analysis Batch: 464315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150655-1	SW-01_20190321	Dissolved	Water	7196A	
480-150655-2	SW-02_20190321	Dissolved	Water	7196A	
480-150655-3	SW-03_20190321	Dissolved	Water	7196A	
480-150655-4	SW-04_20190321	Dissolved	Water	7196A	
480-150655-5	MW-OB14_20190321	Dissolved	Water	7196A	
480-150655-6	EB_20190321	Dissolved	Water	7196A	
480-150655-7	DUP_20190321	Dissolved	Water	7196A	
MB 480-464315/3	Method Blank	Total/NA	Water	7196A	
LCS 480-464315/4	Lab Control Sample	Total/NA	Water	7196A	
480-150655-3 MS	SW-03_20190321	Dissolved	Water	7196A	
480-150655-3 MSD	SW-03_20190321	Dissolved	Water	7196A	

Lab Chronicle

Client Sample ID: SW-01_20190321 — Lab Sample ID: 480-150655-1

Date Collected: 03/21/19 09:15 — **Matrix: Water**
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464315	03/22/19 09:00	A1A	TAL BUF

Client Sample ID: SW-02_20190321 — Lab Sample ID: 480-150655-2

Date Collected: 03/21/19 10:19 — **Matrix: Water**
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464315	03/22/19 09:00	A1A	TAL BUF

Client Sample ID: SW-03_20190321 — Lab Sample ID: 480-150655-3

Date Collected: 03/21/19 12:10 — **Matrix: Water**
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464315	03/22/19 09:00	A1A	TAL BUF

Client Sample ID: SW-04_20190321 — Lab Sample ID: 480-150655-4

Date Collected: 03/21/19 13:45 — **Matrix: Water**
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464315	03/22/19 09:00	A1A	TAL BUF

Client Sample ID: MW-OB14_20190321 — Lab Sample ID: 480-150655-5

Date Collected: 03/21/19 13:54 — **Matrix: Water**
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464315	03/22/19 09:00	A1A	TAL BUF

Client Sample ID: EB_20190321 — Lab Sample ID: 480-150655-6

Date Collected: 03/21/19 14:10 — **Matrix: Water**
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464315	03/22/19 09:00	A1A	TAL BUF

Client Sample ID: DUP_20190321
Lab Sample ID: 480-150655-7
Date Collected: 03/21/19 00:00
Matrix: Water
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	464315	03/22/19 09:00	A1A	TAL BUF

Laboratory References:

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

Accreditation/Certification Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150655-1

Laboratory: TestAmerica Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19 *

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-19
Alaska	State Program	10		06-30-19
Alaska (UST)	State Program	10	UST-104	09-22-19
ANAB	DoD / DOE		L2463	09-22-19
ANAB	ISO/IEC 17025		L2463.01	09-22-19
Arizona	State Program	9	AZ0808	12-14-19
Arkansas DEQ	State Program	6	88-0692	02-01-20
California	State Program	9	2939	06-30-19
Colorado	State Program	8	N/A	12-31-19
Connecticut	State Program	1	PH-0161	03-31-21
Florida	NELAP	4	E87052	06-30-19
GA Dept. of Agriculture	State Program	4	N/A	06-12-19
Georgia	State Program	4	N/A	06-30-19
Georgia	State Program	4	803	06-30-19
Guam	State Program	9	15-005r	04-17-19
Hawaii	State Program	9	N/A	06-30-19
Illinois	NELAP	5	200022	11-30-19
Indiana	State Program	5	N/A	06-30-19
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-19
Kentucky (UST)	State Program	4	18	06-30-19
Kentucky (WW)	State Program	4	90084	12-31-19
Louisiana	NELAP	6	30690	06-30-19
Louisiana (DW)	NELAP	6	LA160019	12-31-19
Maine	State Program	1	GA00006	09-25-20
Maryland	State Program	3	250	12-31-19
Massachusetts	State Program	1	M-GA006	06-30-19
Michigan	State Program	5	9925	03-05-19 *
Mississippi	State Program	4	N/A	06-30-19
Nebraska	State Program	7	TestAmerica-Savannah	06-30-19
New Jersey	NELAP	2	GA769	06-30-19
New Mexico	State Program	6	N/A	06-30-19
North Carolina (DW)	State Program	4	13701	07-31-19
North Carolina (WW/SW)	State Program	4	269	12-31-19
Oklahoma	State Program	6	9984	08-31-19
Pennsylvania	NELAP	3	68-00474	06-30-19
Puerto Rico	State Program	2	GA00006	01-01-20
South Carolina	State Program	4	98001	06-30-19
Tennessee	State Program	4	TN02961	06-30-19
Texas	NELAP	6	T104704185-16-9	11-30-19
Texas (DW)	State Program	1	T104704185	06-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
Virginia	NELAP	3	460161	06-14-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Laboratory: TestAmerica Savannah (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C805	06-10-19
West Virginia (DW)	State Program	3	9950C	12-31-19
West Virginia DEP	State Program	3	094	06-30-19
Wisconsin	State Program	5	999819810	08-31-19
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Method	Method Description	Protocol	Laboratory
7196A	Chromium, Hexavalent	SW846	TAL BUF

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

TestAmerica Job ID: 480-150655-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-150655-1	SW-01_20190321	Water	03/21/19 09:15	03/22/19 01:00
480-150655-2	SW-02_20190321	Water	03/21/19 10:19	03/22/19 01:00
480-150655-3	SW-03_20190321	Water	03/21/19 12:10	03/22/19 01:00
480-150655-4	SW-04_20190321	Water	03/21/19 13:45	03/22/19 01:00
480-150655-5	MW-OB14_20190321	Water	03/21/19 13:54	03/22/19 01:00
480-150655-6	EB_20190321	Water	03/21/19 14:10	03/22/19 01:00
480-150655-7	DUP_20190321	Water	03/21/19 00:00	03/22/19 01:00

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Albany #224

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information			
Sampler: Garrett Crowe	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 680-102348-40197.4
Client Contact: Mr. Jim Vondracek	Phone: 860 992-2636	E-Mail: eddie.barnett@testamericainc.com	Page: ~~Page 4 of 7~~ 1 of 1
Company: Ashland LLC			Job #:
Address: 5200 Blazer Parkway DS-4	Due Date Requested:		
City: Dublin	TAT Requested (days): STD		
State, Zip: OH, 43017			
Phone: 614-790-6146(Tel)	PO #: PO787667		
Email: jevondracek@ashland.com ; Cassie.seutro@ehs-support.co	WO #: Task 400		
Project Name: Hercules Glens Falls O&M 2019	Project #: 68000956		
Site: ~~Glens F~~ Ashland Glens Falls	SSOW#:		

480-150655 Chain of Custody

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA
M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent	6020A - Dissolved Metals	2540C_Calcd - Total Dissolved Solids	2340C - Hardness as calcium carbonate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				B	N	D	N	D		
SW-01_20190321	3/21/19	915	G	Water	Y	N		X				1	
SW-02_20190321	3/21/19	1019	G	Water	Y	N		X				1	
SW-03_20190321	3/21/19	1210	G	Water	Y	Y		X				2	
SW-04_20190321	3/21/19	1345	G	Water	Y	N		X				1	
MW-0814_20190321	3/21/19	1354	G	Water	Y	N		X				1	
EB_20190321 ~~20190321~~ GC	3/21/19	1410	G	Water	Y	N		X				1	
DUP_20190321	3/21/19	—	G	Water	Y	N		X				1	
	GCC	3/21/19		Water									
				Water									
				Water									
				Water									

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 3/21/19 @ 1710	Company: Arcadis Enviro	Received by: [signature]	Date/Time: 3/21/19 1710	Company: TA
Relinquished by: [signature]	Date/Time: 3/21/19 1800	Company: TA	Received by: [signature]	Date/Time: 03/22/19 0100	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.8 #1

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Ashland LLC Job Number: 480-150655-1

Login Number: 150655 **List Source: TestAmerica Buffalo**
List Number: 1
Creator: Velickovic, Zoran

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Environment Testing
TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-150661-1
Client Project/Site: Hercules Glens Falls 1Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
4/5/2019 1:53:04 PM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

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Definitions/Glossary

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 480-150661-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 1Q19

Report Number: 480-150661-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 03/22/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.8º C.

METALS (ICPMS) - DISSOLVED
Samples SW-01_20190321 (480-150661-1), SW-02_20190321 (480-150661-2), SW-03_20190321 (480-150661-3), SW-04_20190321 (480-150661-4), MW-OB14_20190321 (480-150661-5), EB_20190321 (480-150661-6) and DUP_20190321 (480-150661-7) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared on 03/23/2019 and analyzed on 04/03/2019 and 04/04/2019.

Dissolved Chromium was detected in method blank MB 480-464321/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

HARDNESS
Samples SW-01_20190321 (480-150661-1), SW-02_20190321 (480-150661-2), SW-03_20190321 (480-150661-3), SW-04_20190321 (480-150661-4), EB_20190321 (480-150661-6) and DUP_20190321 (480-150661-7) were analyzed for hardness in accordance with SM 2340C. The samples were analyzed on 04/04/2019.

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

TOTAL DISSOLVED SOLIDS
Samples SW-01_20190321 (480-150661-1), SW-02_20190321 (480-150661-2), SW-03_20190321 (480-150661-3), SW-04_20190321 (480-150661-4), EB_20190321 (480-150661-6) and DUP_20190321 (480-150661-7) were analyzed for total dissolved solids in accordance with SM 2540C. The samples were analyzed on 03/27/2019.

Total Dissolved Solids was detected in method blank MB 480-464946/1 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL CYANIDE
Samples MW-OB14_20190321 (480-150661-5) and EB_20190321 (480-150661-6) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 03/28/2019.

Sample MW-OB14_20190321 (480-150661-5)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Job ID: 480-150661-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

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

Detection Summary

Client: Ashland LLC
Job ID: 480-150661-1
Project/Site: Hercules Glens Falls 1Q19

Client Sample ID: SW-01_20190321
Lab Sample ID: 480-150661-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	0.71	J B	1.5	0.36	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	20000		4000	1100	ug/L	1		SM 2340C	Total/NA
Total Dissolved Solids	68	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: SW-02_20190321
Lab Sample ID: 480-150661-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	0.71	J B	1.5	0.36	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	24000		4000	1100	ug/L	1		SM 2340C	Total/NA
Total Dissolved Solids	67	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: SW-03_20190321
Lab Sample ID: 480-150661-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	1.1	J B	1.5	0.36	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	20000		4000	1100	ug/L	1		SM 2340C	Total/NA
Total Dissolved Solids	60	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: SW-04_20190321
Lab Sample ID: 480-150661-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	0.55	J B	1.5	0.36	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	20000		4000	1100	ug/L	1		SM 2340C	Total/NA
Total Dissolved Solids	56	B	10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: MW-OB14_20190321
Lab Sample ID: 480-150661-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	420	B	1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.27		0.10	0.025	mg/L	10		9012B	Total/NA

Client Sample ID: EB_20190321
Lab Sample ID: 480-150661-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	0.47	J B	1.5	0.36	ug/L	1		6020A	Dissolved

Client Sample ID: DUP_20190321
Lab Sample ID: 480-150661-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	1.1	J B	1.5	0.36	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	16000		4000	1100	ug/L	1		SM 2340C	Total/NA
Total Dissolved Solids	52	B	10	4.0	mg/L	1		SM 2540C	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SW-01_20190321
Lab Sample ID: 480-150661-1
Date Collected: 03/21/19 09:15
Matrix: Water
Date Received: 03/22/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.71	J B	1.5	0.36	ug/L		03/23/19 07:17	04/04/19 12:07	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		03/23/19 07:17	04/03/19 00:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	20000		4000	1100	ug/L			04/04/19 12:09	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	68	B	10	4.0	mg/L			03/27/19 10:27	1

Client Sample ID: SW-02_20190321
Lab Sample ID: 480-150661-2
Date Collected: 03/21/19 10:19
Matrix: Water
Date Received: 03/22/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.71	J B	1.5	0.36	ug/L		03/23/19 07:17	04/04/19 12:09	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		03/23/19 07:17	04/03/19 00:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	24000		4000	1100	ug/L			04/04/19 12:09	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	67	B	10	4.0	mg/L			03/27/19 10:27	1

Client Sample ID: SW-03_20190321
Lab Sample ID: 480-150661-3
Date Collected: 03/21/19 12:10
Matrix: Water
Date Received: 03/22/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.1	J B	1.5	0.36	ug/L		03/23/19 07:17	04/04/19 12:12	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		03/23/19 07:17	04/03/19 00:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	20000		4000	1100	ug/L			04/04/19 12:09	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	60	B	10	4.0	mg/L			03/27/19 10:27	1

Client Sample ID: SW-04_20190321
Lab Sample ID: 480-150661-4
Date Collected: 03/21/19 13:45
Matrix: Water
Date Received: 03/22/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.55	J B	1.5	0.36	ug/L		03/23/19 07:17	04/03/19 01:01	1

Client Sample ID: SW-04_20190321 — Lab Sample ID: 480-150661-4

Date Collected: 03/21/19 13:45 — **Matrix: Water**

Date Received: 03/22/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		03/23/19 07:17	04/03/19 01:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	**20000**		4000	1100	ug/L			04/04/19 12:09	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**56**	**B**	10	4.0	mg/L			03/27/19 10:27	1

Client Sample ID: MW-OB14_20190321 — Lab Sample ID: 480-150661-5

Date Collected: 03/21/19 13:54 — **Matrix: Water**

Date Received: 03/22/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	**420**	**B**	1.5	0.36	ug/L		03/23/19 07:17	04/03/19 01:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.27**		0.10	0.025	mg/L		03/28/19 04:31	03/28/19 10:56	10

Client Sample ID: EB_20190321 — Lab Sample ID: 480-150661-6

Date Collected: 03/21/19 14:10 — **Matrix: Water**

Date Received: 03/22/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	**0.47**	**J B**	1.5	0.36	ug/L		03/23/19 07:17	04/03/19 01:07	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		03/23/19 07:17	04/03/19 01:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		03/28/19 06:00	03/28/19 10:36	1
Hardness as calcium carbonate	4000	U	4000	1100	ug/L			04/04/19 12:09	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	4.0	mg/L			03/27/19 10:27	1

Client Sample ID: DUP_20190321 — Lab Sample ID: 480-150661-7

Date Collected: 03/21/19 00:00 — **Matrix: Water**

Date Received: 03/22/19 01:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	**1.1**	**J B**	1.5	0.36	ug/L		03/23/19 07:17	04/03/19 01:10	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		03/23/19 07:17	04/03/19 01:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	**16000**		4000	1100	ug/L			04/04/19 12:09	1

Client Sample Results

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

Job ID: 480-150661-1

Client Sample ID: DUP_20190321
Date Collected: 03/21/19 00:00
Date Received: 03/22/19 01:00

Lab Sample ID: 480-150661-7
Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	52	B	10	4.0	mg/L			03/27/19 10:27	1

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

Job ID: 480-150661-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 480-464321/1-A
Matrix: Water
Analysis Batch: 465969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 464321

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		03/23/19 07:17	04/03/19 00:28	1

Lab Sample ID: MB 480-464321/1-A
Matrix: Water
Analysis Batch: 466282

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 464321

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.447	J	1.5	0.36	ug/L		03/23/19 07:17	04/04/19 12:01	1

Lab Sample ID: LCS 480-464321/2-A
Matrix: Water
Analysis Batch: 465969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 464321

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Vanadium	20.0	19.7		ug/L		98	80 - 120

Lab Sample ID: LCS 480-464321/2-A
Matrix: Water
Analysis Batch: 466282

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 464321

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	20.0	20.4		ug/L		102	80 - 120

Lab Sample ID: LCSD 480-464321/14-A
Matrix: Water
Analysis Batch: 465969

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 464321

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Chromium	20.0	18.1		ug/L		90	80 - 120	0	20
Dissolved Vanadium	20.0	19.6		ug/L		98	80 - 120	1	20

Lab Sample ID: 480-150661-3 MS
Matrix: Water
Analysis Batch: 465969

Client Sample ID: SW-03_20190321
Prep Type: Dissolved
Prep Batch: 464321

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Vanadium	4.0	U	20.0	20.4		ug/L		102	75 - 125

Lab Sample ID: 480-150661-3 MS
Matrix: Water
Analysis Batch: 466282

Client Sample ID: SW-03_20190321
Prep Type: Dissolved
Prep Batch: 464321

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	1.1	J B	20.0	21.3		ug/L		101	75 - 125

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

Job ID: 480-150661-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 480-150661-3 MSD
Matrix: Water
Analysis Batch: 465969

Client Sample ID: SW-03_20190321
Prep Type: Dissolved
Prep Batch: 464321

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Vanadium	4.0	U	20.0	20.1		ug/L		100	75 - 125	1	20

Lab Sample ID: 480-150661-3 MSD
Matrix: Water
Analysis Batch: 466282

Client Sample ID: SW-03_20190321
Prep Type: Dissolved
Prep Batch: 464321

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Chromium	1.1	J B	20.0	21.1		ug/L		100	75 - 125	1	20

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 680-564049/1-A
Matrix: Water
Analysis Batch: 564113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564049

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		03/28/19 04:31	03/28/19 10:43	1

Lab Sample ID: LCS 680-564049/2-A
Matrix: Water
Analysis Batch: 564113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564049

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0519		mg/L		104	85 - 115

Lab Sample ID: 480-150661-5 DU
Matrix: Water
Analysis Batch: 564113

Client Sample ID: MW-OB14_20190321
Prep Type: Total/NA
Prep Batch: 564049

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cyanide, Total	0.27		0.273		mg/L		1	20

Lab Sample ID: MB 680-564050/1-A
Matrix: Water
Analysis Batch: 564113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 564050

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		03/28/19 06:00	03/28/19 10:32	1

Lab Sample ID: LCS 680-564050/2-A
Matrix: Water
Analysis Batch: 564113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 564050

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0524		mg/L		105	85 - 115

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

Job ID: 480-150661-1

Method: SM 2340C - Hardness, Total (mg/l as CaC03)

Lab Sample ID: MB 480-466327/3
Matrix: Water
Analysis Batch: 466327

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	2000	U	2000	530	ug/L			04/04/19 12:09	1

Lab Sample ID: LCS 480-466327/4
Matrix: Water
Analysis Batch: 466327

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hardness as calcium carbonate	271000	264000		ug/L		97	90 - 110

Lab Sample ID: 480-150661-3 MS
Matrix: Water
Analysis Batch: 466327

Client Sample ID: SW-03_20190321
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hardness as calcium carbonate	20000		200000	216000		ug/L		98	74 - 130

Lab Sample ID: 480-150661-3 MSD
Matrix: Water
Analysis Batch: 466327

Client Sample ID: SW-03_20190321
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hardness as calcium carbonate	20000		200000	216000		ug/L		98	74 - 130	0	15

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

Lab Sample ID: MB 480-464946/1
Matrix: Water
Analysis Batch: 464946

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8.00	J	10	4.0	mg/L			03/27/19 10:27	1

Lab Sample ID: LCS 480-464946/2
Matrix: Water
Analysis Batch: 464946

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	500		mg/L		100	85 - 115

QC Association Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

Job ID: 480-150661-1

Metals

Prep Batch: 464321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150661-1	SW-01_20190321	Dissolved	Water	3020A	
480-150661-2	SW-02_20190321	Dissolved	Water	3020A	
480-150661-3	SW-03_20190321	Dissolved	Water	3020A	
480-150661-4	SW-04_20190321	Dissolved	Water	3020A	
480-150661-5	MW-OB14_20190321	Dissolved	Water	3020A	
480-150661-6	EB_20190321	Dissolved	Water	3020A	
480-150661-7	DUP_20190321	Dissolved	Water	3020A	
MB 480-464321/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-464321/2-A	Lab Control Sample	Total/NA	Water	3020A	
LCSD 480-464321/14-A	Lab Control Sample Dup	Total/NA	Water	3020A	
480-150661-3 MS	SW-03_20190321	Dissolved	Water	3020A	
480-150661-3 MSD	SW-03_20190321	Dissolved	Water	3020A	

Analysis Batch: 465969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150661-1	SW-01_20190321	Dissolved	Water	6020A	464321
480-150661-2	SW-02_20190321	Dissolved	Water	6020A	464321
480-150661-3	SW-03_20190321	Dissolved	Water	6020A	464321
480-150661-4	SW-04_20190321	Dissolved	Water	6020A	464321
480-150661-5	MW-OB14_20190321	Dissolved	Water	6020A	464321
480-150661-6	EB_20190321	Dissolved	Water	6020A	464321
480-150661-7	DUP_20190321	Dissolved	Water	6020A	464321
MB 480-464321/1-A	Method Blank	Total/NA	Water	6020A	464321
LCS 480-464321/2-A	Lab Control Sample	Total/NA	Water	6020A	464321
LCSD 480-464321/14-A	Lab Control Sample Dup	Total/NA	Water	6020A	464321
480-150661-3 MS	SW-03_20190321	Dissolved	Water	6020A	464321
480-150661-3 MSD	SW-03_20190321	Dissolved	Water	6020A	464321

Analysis Batch: 466282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150661-1	SW-01_20190321	Dissolved	Water	6020A	464321
480-150661-2	SW-02_20190321	Dissolved	Water	6020A	464321
480-150661-3	SW-03_20190321	Dissolved	Water	6020A	464321
MB 480-464321/1-A	Method Blank	Total/NA	Water	6020A	464321
LCS 480-464321/2-A	Lab Control Sample	Total/NA	Water	6020A	464321
480-150661-3 MS	SW-03_20190321	Dissolved	Water	6020A	464321
480-150661-3 MSD	SW-03_20190321	Dissolved	Water	6020A	464321

General Chemistry

Analysis Batch: 464946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150661-1	SW-01_20190321	Dissolved	Water	SM 2540C	
480-150661-2	SW-02_20190321	Dissolved	Water	SM 2540C	
480-150661-3	SW-03_20190321	Dissolved	Water	SM 2540C	
480-150661-4	SW-04_20190321	Dissolved	Water	SM 2540C	
480-150661-6	EB_20190321	Dissolved	Water	SM 2540C	
480-150661-7	DUP_20190321	Dissolved	Water	SM 2540C	
MB 480-464946/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-464946/2	Lab Control Sample	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Ashland LLC
Job ID: 480-150661-1
Project/Site: Hercules Glens Falls 1Q19

General Chemistry

Analysis Batch: 466327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150661-1	SW-01_20190321	Total/NA	Water	SM 2340C	
480-150661-2	SW-02_20190321	Total/NA	Water	SM 2340C	
480-150661-3	SW-03_20190321	Total/NA	Water	SM 2340C	
480-150661-4	SW-04_20190321	Total/NA	Water	SM 2340C	
480-150661-6	EB_20190321	Total/NA	Water	SM 2340C	
480-150661-7	DUP_20190321	Total/NA	Water	SM 2340C	
MB 480-466327/3	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-466327/4	Lab Control Sample	Total/NA	Water	SM 2340C	
480-150661-3 MS	SW-03_20190321	Total/NA	Water	SM 2340C	
480-150661-3 MSD	SW-03_20190321	Total/NA	Water	SM 2340C	

Prep Batch: 564049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150661-5	MW-OB14_20190321	Total/NA	Water	9012B	
MB 680-564049/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-564049/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-150661-5 DU	MW-OB14_20190321	Total/NA	Water	9012B	

Prep Batch: 564050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150661-6	EB_20190321	Total/NA	Water	9012B	
MB 680-564050/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-564050/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 564113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-150661-5	MW-OB14_20190321	Total/NA	Water	9012B	564049
480-150661-6	EB_20190321	Total/NA	Water	9012B	564050
MB 680-564049/1-A	Method Blank	Total/NA	Water	9012B	564049
MB 680-564050/1-A	Method Blank	Total/NA	Water	9012B	564050
LCS 680-564049/2-A	Lab Control Sample	Total/NA	Water	9012B	564049
LCS 680-564050/2-A	Lab Control Sample	Total/NA	Water	9012B	564050
480-150661-5 DU	MW-OB14_20190321	Total/NA	Water	9012B	564049

Lab Chronicle

Client: Ashland LLC
Job ID: 480-150661-1
Project/Site: Hercules Glens Falls 1Q19

Client Sample ID: SW-01_20190321
Lab Sample ID: 480-150661-1
Date Collected: 03/21/19 09:15
Matrix: Water
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	465969	04/03/19 00:33	AMH	TAL BUF
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	466282	04/04/19 12:07	AMH	TAL BUF
Total/NA	Analysis	SM 2340C		1	466327	04/04/19 12:09	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	464946	03/27/19 10:27	RAF	TAL BUF

Client Sample ID: SW-02_20190321
Lab Sample ID: 480-150661-2
Date Collected: 03/21/19 10:19
Matrix: Water
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	465969	04/03/19 00:36	AMH	TAL BUF
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	466282	04/04/19 12:09	AMH	TAL BUF
Total/NA	Analysis	SM 2340C		1	466327	04/04/19 12:09	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	464946	03/27/19 10:27	RAF	TAL BUF

Client Sample ID: SW-03_20190321
Lab Sample ID: 480-150661-3
Date Collected: 03/21/19 12:10
Matrix: Water
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	465969	04/03/19 00:39	AMH	TAL BUF
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	466282	04/04/19 12:12	AMH	TAL BUF
Total/NA	Analysis	SM 2340C		1	466327	04/04/19 12:09	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	464946	03/27/19 10:27	RAF	TAL BUF

Client Sample ID: SW-04_20190321
Lab Sample ID: 480-150661-4
Date Collected: 03/21/19 13:45
Matrix: Water
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	465969	04/03/19 01:01	AMH	TAL BUF
Total/NA	Analysis	SM 2340C		1	466327	04/04/19 12:09	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	464946	03/27/19 10:27	RAF	TAL BUF

Lab Chronicle

Client: Ashland LLC
Job ID: 480-150661-1
Project/Site: Hercules Glens Falls 1Q19

Client Sample ID: MW-OB14_20190321
Lab Sample ID: 480-150661-5
Date Collected: 03/21/19 13:54
Matrix: Water
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	465969	04/03/19 01:04	AMH	TAL BUF
Total/NA	Prep	9012B			564049	03/28/19 04:31	DAM	TAL SAV
Total/NA	Analysis	9012B		10	564113	03/28/19 10:56	DAM	TAL SAV

Client Sample ID: EB_20190321
Lab Sample ID: 480-150661-6
Date Collected: 03/21/19 14:10
Matrix: Water
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	465969	04/03/19 01:07	AMH	TAL BUF
Total/NA	Prep	9012B			564050	03/28/19 06:00	DAM	TAL SAV
Total/NA	Analysis	9012B		1	564113	03/28/19 10:36	DAM	TAL SAV
Total/NA	Analysis	SM 2340C		1	466327	04/04/19 12:09	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	464946	03/27/19 10:27	RAF	TAL BUF

Client Sample ID: DUP_20190321
Lab Sample ID: 480-150661-7
Date Collected: 03/21/19 00:00
Matrix: Water
Date Received: 03/22/19 01:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			464321	03/23/19 07:17	MV	TAL BUF
Dissolved	Analysis	6020A		1	465969	04/03/19 01:10	AMH	TAL BUF
Total/NA	Analysis	SM 2340C		1	466327	04/04/19 12:09	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	464946	03/27/19 10:27	RAF	TAL BUF

Laboratory References:

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

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

Laboratory: Eurofins TestAmerica, Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10842	04-01-19 *

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9012B	9012B	Water	Cyanide, Total

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

Job ID: 480-150661-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL SAV
SM 2340C	Hardness, Total (mg/l as CaC03)	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
3020A	Preparation, Total Metals	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

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

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 1Q19

Job ID: 480-150661-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-150661-1	SW-01_20190321	Water	03/21/19 09:15	03/22/19 01:00
480-150661-2	SW-02_20190321	Water	03/21/19 10:19	03/22/19 01:00
480-150661-3	SW-03_20190321	Water	03/21/19 12:10	03/22/19 01:00
480-150661-4	SW-04_20190321	Water	03/21/19 13:45	03/22/19 01:00
480-150661-5	MW-OB14_20190321	Water	03/21/19 13:54	03/22/19 01:00
480-150661-6	EB_20190321	Water	03/21/19 14:10	03/22/19 01:00
480-150661-7	DUP_20190321	Water	03/21/19 00:00	03/22/19 01:00

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Albany
#224

Chain of Custody Record

480-150661 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information			
Client Contact: Mr. Jim Vondracek	Sampler: Garret Crowe	Lab PM: Barnett, Eddie T	COC No: 680-102348-40197.3
Company: Ashland LLC	Phone: 860 997 2636	E-Mail: eddie.barnett@testamericainc.com	Page: Page ~~3 of 7~~ 1 of 1
Address: 5200 Blazer Parkway DS-4	Due Date Requested:		Job #:
City: Dublin	TAT Requested (days):		
State, Zip: OH, 43017			
Phone: 614-790-6146(Tel)	PO #: PO787667		
Email: jevondracek@ashland.com	WO #: Task 400		
Project Name: Hercules Glens Falls O&M 2019	Project #: 68000956		
Site: Ashland Glens Falls	SSOW#:		

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent	6020A - Dissolved Metals (chromium)	2540C_Calcd - Total Dissolved Solids	2340C - Hardness as calcium carbonate	6020A - Dissolved metals (chromium and Vandium)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				B	N	D	N	D			
SW-01_20190321	3/21/19	915	G	Water	Y	N				X	X	X	4	
SW-02_20190321	3/21/19	1019	G	Water	Y	N				X	X	X	4	
SW-03_20190321	3/21/19	1210	G	Water	Y	Y				X	X	X	8	ms/msD
SW-04_20190321	3/21/19	1345	G	Water	Y	N				X	X	X	4	
MW-0B14-20190321	3/21/19	1354	G	Water	Y	N	X		X	~~X~~	~~X~~	GC	32	
EB_20190321	3/21/19	1410	G	Water	Y	N	X		~~X~~ GC	X	X	X	5	
DUP_20190321	3/21/19	—	G	Water	Y	N				X	X	X	4	
				Water										
KL 3/21/19				Water										
				Water										
				Water										

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 3/21/19 1710	Company: Arcadis Group	Received by: [signature]	Date/Time: 3/21/19	Company
Relinquished by: [signature]	Date/Time: 3/21/19 1800	Company: TA	Received by: [signature]	Date/Time: 03/22/19 0100	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.8 #1

Ver: 01/16/2019

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-48451.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-150661-1
Address: 5102 LaRoche Avenue,	Due Date Requested: 4/3/2019			
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls 1Q19	Project #: 68000956			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep (MOD) Local Method	Total Number of containers	Special Instructions/Note:
				Preservation Code:	X	X		X	
MW-OB14_20190321 (480-150661-5)	3/21/19	13:54 Eastern		Water			X	1	
EB_20190321 (480-150661-6)	3/21/19	14:10 Eastern		Water			X	1	

Preservation Codes:

- A - HCL
- B - NaOH
- C - Zn Acetate
- D - Nitric Acid
- E - NaHSO4
- F - MeOH
- G - Amchlor
- H - Ascorbic Acid
- I - Ice
- J - DI Water
- K - EDTA
- L - EDA
- M - Hexane
- N - None
- O - AsNaO2
- P - Na2O4S
- Q - Na2SO3
- R - Na2S2O3
- S - H2SO4
- T - TSP Dodecahydrate
- U - Acetone
- V - MCAA
- W - pH 4-5
- Z - other (specify)

Other:

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification Unconfirmed	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months
Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 3-22-19 1800	Company: [signature]	Received by: [signature]	Date/Time: 3-23-19 1015	Company: TASAV	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 3.5/3.7			

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-150661-1

Login Number: 150661
List Number: 1
Creator: Velickovic, Zoran

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-150661-1

Login Number: 150661
List Number: 2
Creator: Nobles, Terry G

List Source: Eurofins TestAmerica, Savannah
List Creation: 03/23/19 12:47 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

eurofins | Environment Testing
TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-155087-1
Client Project/Site: Hercules Glens Falls 2Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
7/2/2019 10:33:26 AM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155087-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 480-155087-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 2Q19

Report Number: 480-155087-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 06/19/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.6º C.

HEXAVALENT CHROMIUM
Samples MW-OB14_20190618 (480-155087-1), EW-B5_20190618 (480-155087-2), AW-C11_20190618 (480-155087-3) and EB_20190618 (480-155087-4) were analyzed for Hexavalent Chromium in accordance with EPA Method 218.6. The samples were analyzed on 07/01/2019.

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

HEXAVALENT CHROMIUM (DISSOLVED)
Samples MW-OB14_20190618 (480-155087-1), EW-B5_20190618 (480-155087-2), AW-C11_20190618 (480-155087-3) and EB_20190618 (480-155087-4) were analyzed for Hexavalent Chromium (dissolved) in accordance with SM 3500 CR D. The samples were analyzed on 06/19/2019.

Chromium, hexavalent recovered low for the MS of sample MW-OB14_20190618MS (480-155087-1) in batch 480-478667. Refer to the QC report for details.

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

Detection Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155087-1

Client Sample ID: MW-OB14_20190618 — Lab Sample ID: 480-155087-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.15		0.0030	0.0013	mg/L	10		218.6	Dissolved
Chromium, hexavalent	0.13	F1	0.010	0.0050	mg/L	1		SM 3500 CR D	Dissolved

Client Sample ID: EW-B5_20190618 — Lab Sample ID: 480-155087-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	47		0.60	0.25	mg/L	2000		218.6	Dissolved
Chromium, hexavalent	45		2.0	1.0	mg/L	200		SM 3500 CR D	Dissolved

Client Sample ID: AW-C11_20190618 — Lab Sample ID: 480-155087-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	4.3		0.060	0.025	mg/L	200		218.6	Dissolved
Chromium, hexavalent	4.2		0.50	0.25	mg/L	50		SM 3500 CR D	Dissolved

Client Sample ID: EB_20190618 — Lab Sample ID: 480-155087-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-OB14_20190618

Lab Sample ID: 480-155087-1

Date Collected: 06/18/19 11:33
Date Received: 06/19/19 08:00

Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.15**		0.0030	0.0013	mg/L			07/01/19 13:50	10
Chromium, hexavalent	**0.13**	**F1**	0.010	0.0050	mg/L			06/19/19 09:37	1

Client Sample ID: EW-B5_20190618

Lab Sample ID: 480-155087-2

Date Collected: 06/18/19 14:15
Date Received: 06/19/19 08:00

Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**47**		0.60	0.25	mg/L			07/01/19 14:03	2000
Chromium, hexavalent	**45**		2.0	1.0	mg/L			06/19/19 09:37	200

Client Sample ID: AW-C11_20190618

Lab Sample ID: 480-155087-3

Date Collected: 06/18/19 15:20
Date Received: 06/19/19 08:00

Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**4.3**		0.060	0.025	mg/L			07/01/19 17:02	200
Chromium, hexavalent	**4.2**		0.50	0.25	mg/L			06/19/19 09:37	50

Client Sample ID: EB_20190618

Lab Sample ID: 480-155087-4

Date Collected: 06/18/19 15:30
Date Received: 06/19/19 08:00

Matrix: Water

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.00030	U	0.00030	0.00013	mg/L			07/01/19 14:35	1
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/19/19 09:37	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 500-492847/3
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 492847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.00030	U	0.00030	0.00013	mg/L			07/01/19 13:12	1

Lab Sample ID: LCS 500-492847/4
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 492847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0250	0.0257		mg/L		103	90 - 110

Lab Sample ID: LCSD 500-492847/5
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 492847

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	0.0250	0.0252		mg/L		101	90 - 110	2	20

Method: SM 3500 CR D - Chromium, Hexavalent

Lab Sample ID: MB 480-478667/27
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478667

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/19/19 09:37	1

Lab Sample ID: MB 480-478667/51
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478667

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/19/19 09:37	1

Lab Sample ID: MB 480-478667/75
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478667

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/19/19 09:37	1

Lab Sample ID: LCS 480-478667/28
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478667

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0496		mg/L		99	85 - 115

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155087-1

Method: SM 3500 CR D - Chromium, Hexavalent (Continued)

Lab Sample ID: LCS 480-478667/52
Matrix: Water
Analysis Batch: 478667

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent			0.0500	0.0496		mg/L		99	85 - 115

Lab Sample ID: LCS 480-478667/76
Matrix: Water
Analysis Batch: 478667

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent			0.0500	0.0509		mg/L		102	85 - 115

Lab Sample ID: 480-155087-1 MS
Matrix: Water
Analysis Batch: 478667

Client Sample ID: MW-OB14_20190618
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.13	F1	0.0500	0.165	F1	mg/L		77	85 - 115

General Chemistry

Analysis Batch: 478667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155087-1	MW-OB14_20190618	Dissolved	Water	SM 3500 CR D	
480-155087-2	EW-B5_20190618	Dissolved	Water	SM 3500 CR D	
480-155087-3	AW-C11_20190618	Dissolved	Water	SM 3500 CR D	
480-155087-4	EB_20190618	Dissolved	Water	SM 3500 CR D	
MB 480-478667/27	Method Blank	Total/NA	Water	SM 3500 CR D	
MB 480-478667/51	Method Blank	Total/NA	Water	SM 3500 CR D	
MB 480-478667/75	Method Blank	Total/NA	Water	SM 3500 CR D	
LCS 480-478667/28	Lab Control Sample	Total/NA	Water	SM 3500 CR D	
LCS 480-478667/52	Lab Control Sample	Total/NA	Water	SM 3500 CR D	
LCS 480-478667/76	Lab Control Sample	Total/NA	Water	SM 3500 CR D	
480-155087-1 MS	MW-OB14_20190618	Dissolved	Water	SM 3500 CR D	

Analysis Batch: 492847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155087-1	MW-OB14_20190618	Dissolved	Water	218.6	
480-155087-2	EW-B5_20190618	Dissolved	Water	218.6	
480-155087-3	AW-C11_20190618	Dissolved	Water	218.6	
480-155087-4	EB_20190618	Dissolved	Water	218.6	
MB 500-492847/3	Method Blank	Total/NA	Water	218.6	
LCS 500-492847/4	Lab Control Sample	Total/NA	Water	218.6	
LCSD 500-492847/5	Lab Control Sample Dup	Total/NA	Water	218.6	

Lab Chronicle

Client: Ashland LLC
Job ID: 480-155087-1
Project/Site: Hercules Glens Falls 2Q19

Client Sample ID: MW-OB14_20190618 | **Lab Sample ID: 480-155087-1**
Date Collected: 06/18/19 11:33 | **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	218.6		10	492847	07/01/19 13:50	MTB	TAL CHI
Dissolved	Analysis	SM 3500 CR D		1	478667	06/19/19 09:37	MDL	TAL BUF

Client Sample ID: EW-B5_20190618 | **Lab Sample ID: 480-155087-2**
Date Collected: 06/18/19 14:15 | **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	218.6		2000	492847	07/01/19 14:03	MTB	TAL CHI
Dissolved	Analysis	SM 3500 CR D		200	478667	06/19/19 09:37	MDL	TAL BUF

Client Sample ID: AW-C11_20190618 | **Lab Sample ID: 480-155087-3**
Date Collected: 06/18/19 15:20 | **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	218.6		200	492847	07/01/19 17:02	MTB	TAL CHI
Dissolved	Analysis	SM 3500 CR D		50	478667	06/19/19 09:37	MDL	TAL BUF

Client Sample ID: EB_20190618 | **Lab Sample ID: 480-155087-4**
Date Collected: 06/18/19 15:30 | **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	218.6		1	492847	07/01/19 14:35	MTB	TAL CHI
Dissolved	Analysis	SM 3500 CR D		1	478667	06/19/19 09:37	MDL	TAL BUF

Laboratory References:

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

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Ashland LLC
Job ID: 480-155087-1
Project/Site: Hercules Glens Falls 2Q19

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 3500 CR D		Water	Chromium, hexavalent

Laboratory: Eurofins TestAmerica, Chicago

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2903	04-30-19 *
Georgia	State Program	4	939	06-30-19 *
Hawaii	State Program	9	N/A	04-30-20
Illinois	NELAP	5	100201	04-30-20
Indiana	State Program	5	C-IL-02	06-30-19 *
Iowa	State Program	7	82	05-01-20
Kansas	NELAP	7	E-10161	10-31-19 *
Kentucky (UST)	State Program	4	66	06-30-19 *
Kentucky (WW)	State Program	4	KY90023	12-31-19
Louisiana	NELAP	6	30720	06-30-20
Mississippi	State Program	4	N/A	06-30-19 *
New York	NELAP	2	12019	04-01-20
North Carolina (WW/SW)	State Program	4	291	12-31-19
North Dakota	State Program	8	R-194	05-30-19 *
Oklahoma	State		8908	08-31-19
Oklahoma	State Program	6	8908	08-31-19 *
South Carolina	State Program	4	77001	05-30-19 *
Wisconsin	State Program	5	999580010	08-31-19 *
Wyoming	State Program	8	8TMS-Q	04-30-19 *

Laboratory: Eurofins TestAmerica, Savannah

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10842	04-01-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155087-1

Method	Method Description	Protocol	Laboratory
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	TAL CHI
SM 3500 CR D	Chromium, Hexavalent	SM	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

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

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155087-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-155087-1	MW-OB14_20190618	Water	06/18/19 11:33	06/19/19 08:00	
480-155087-2	EW-B5_20190618	Water	06/18/19 14:15	06/19/19 08:00	
480-155087-3	AW-C11_20190618	Water	06/18/19 15:20	06/19/19 08:00	
480-155087-4	EB_20190618	Water	06/18/19 15:30	06/19/19 08:00	

Albany
#224

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information	Sampler: Garrett Crowe	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 680-105353-41232.1
Client Contact: Mr. Jim Vondracek	Phone: 860 992 2636	E-Mail: eddie.barnett@testamericainc.com		Page: Page 1 of 1
Company: Ashland LLC		Analysis Requested		Job #:
Address: 5200 Blazer Parkway DS-4	Due Date Requested:			Preservation Codes:
City: Dublin	TAT Requested (days): STD			480-155087 Chain of Custody
State, Zip: OH, 43017				
Phone: 614-790-6146(Tel)	PO #: PO787667			K - EDTA; L - EDA; W - pH 4-5; Z - other (specify)
Email: jevondracek@ashland.com ; cassie.[illegible]@ebs support.[illegible]	WO #: Task 400			Other:
Project Name: Hercules Glens Falls O&M 2019	Project #: 68000956			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	3500_CR_D - Hex Chrom (Field Filtered)	218.6_Pres_ORGF - Hex Chrom (Field Filtered)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N			
MW-0814_20190618	6/18/19	1133	G	Water	Y	N	X	X	2	
EW-BS_20190618		1415	G	Water	Y	N	X	X	2	
AW-C11_20190618		~~1400~~ 1520	G	Water	Y	N	X	X	2	
EB_20190618	6/18/19	1530	G	Water	Y	N	X	X	2	
				Water						
				Water						
				Water						
				Water						
				Water						

RCZ 6/18/19

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: [signature]	Date/Time: 6/18/19 1715	Company: Arcadis Group	Received by: Karl Zach	Date/Time: 6/18/19 1715	Company
Relinquished by: Karl Zach	Date/Time: 6/18/19 1800	Company: TA	Received by: C Wallace	Date/Time: 6/19/19 0800	Company: TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: #1 2.6

Ver: 01/16/2019

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-50330.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-155087-1
Address: 2417 Bond Street, ,	Due Date Requested: 7/1/2019	**Analysis Requested**		**Preservation Codes:**
City: University Park	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
State, Zip: IL, 60484				M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls 2Q19	Project #: 68000956			
Site:	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	218.6/FIELD_FLTRD	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-OB14_20190618 (480-155087-1)	6/18/19	11:33 Eastern		Water			X	1	
EW-B5_20190618 (480-155087-2)	6/18/19	14:15 Eastern		Water			X	1	
AW-C11_20190618 (480-155087-3)	6/18/19	15:20 Eastern		Water			X	1	
EB_20190618 (480-155087-4)	6/18/19	15:30 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification Unconfirmed		*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-19-19 1610	[illegible]	[signature]	06/20/19 0940	TA/HE
Relinquished by:	Date/Time:	Company	Received by	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: -0.1 → 1.9

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-155087-1

Login Number: 155087
List Number: 1
Creator: Wallace, Cameron

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ashland LLC | Job Number: 480-155087-1

Login Number: 155087
List Number: 2
Creator: Buckley, Paula M

List Source: Eurofins TestAmerica, Chicago
List Creation: 06/20/19 10:13 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-155088-1
Client Project/Site: Hercules Glens Falls 2Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
7/8/2019 7:28:06 AM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Ashland LLC
Job ID: 480-155088-1
Project/Site: Hercules Glens Falls 2Q19

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 480-155088-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 2Q19

Report Number: 480-155088-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 06/19/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 3.6º C.

METALS (ICPMS) - DISSOLVED
Samples MW-OB14_20190618 (480-155088-1), AW-B4_20190518 (480-155088-2), EW-B5_20190618 (480-155088-3), SUMP-A_20190618 (480-155088-4), SUMP-B_20190618 (480-155088-5), AW-A14_20190618 (480-155088-6), DUP_20190618 (480-155088-7), AW-C11_20190618 (480-155088-8) and EB_20190618 (480-155088-9) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared on 06/20/2019 and analyzed on 06/20/2019 and 06/26/2019.

Dissolved Chromium was detected in method blank MB 480-478595/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Dissolved Chromium recovered low for the MS of sample AW-C11_20190618MS (480-155088-8) in batch 480-479863. Dissolved Chromium recovered low for the MSD of sample AW-C11_20190618MSD (480-155088-8) in batch 480-479863. Refer to the QC report for details.

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

HEXAVALENT CHROMIUM
Samples MW-OB14_20190618 (480-155088-1), AW-B4_20190518 (480-155088-2), EW-B5_20190618 (480-155088-3), SUMP-A_20190618 (480-155088-4), SUMP-B_20190618 (480-155088-5), AW-A14_20190618 (480-155088-6), DUP_20190618 (480-155088-7), AW-C11_20190618 (480-155088-8) and EB_20190618 (480-155088-9) were analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The samples were analyzed on 06/19/2019.

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

TOTAL CYANIDE
Samples MW-OB14_20190618 (480-155088-1), AW-B4_20190518 (480-155088-2), EW-B5_20190618 (480-155088-3), SUMP-A_20190618 (480-155088-4), SUMP-B_20190618 (480-155088-5), AW-A14_20190618 (480-155088-6), DUP_20190618 (480-155088-7), AW-C11_20190618 (480-155088-8) and EB_20190618 (480-155088-9) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared on 06/26/2019 and 06/27/2019 and analyzed on 06/28/2019, 06/29/2019 and 07/03/2019.

Reanalysis of the following sample was performed outside of the analytical holding time due to the sample exceeding calibration during the initial analysis: EW-B5_20190618 (480-155088-3). The second run has been reported.

Cyanide, Total recovered low for the MSD of sample AW-C11_20190618MSD (480-155088-8) in batch 680-576387. Refer to the QC report for details.

Samples EW-B5_20190618 (480-155088-3)[10X] and SUMP-B_20190618 (480-155088-5)[10X] required dilution prior to analysis. The

Job ID: 480-155088-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

reporting limits have been adjusted accordingly.

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

Detection Summary

Client: Ashland LLC
Job ID: 480-155088-1
Project/Site: Hercules Glens Falls 2Q19

Client Sample ID: MW-OB14_20190618 — Lab Sample ID: 480-155088-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	160		1.5	0.36	ug/L	1		6020A	Dissolved
Chromium, hexavalent	0.12		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: AW-B4_20190518 — Lab Sample ID: 480-155088-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	16		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.030		0.010	0.0025	mg/L	1		9012B	Total/NA
Chromium, hexavalent	0.012		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: EW-B5_20190618 — Lab Sample ID: 480-155088-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	58000	B	150	36	ug/L	100		6020A	Dissolved
Cyanide, Total	0.91	H	0.10	0.025	mg/L	10		9012B	Total/NA
Chromium, hexavalent	46		2.0	1.0	mg/L	200		7196A	Dissolved

Client Sample ID: SUMP-A_20190618 — Lab Sample ID: 480-155088-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	380		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.070		0.010	0.0025	mg/L	1		9012B	Total/NA
Chromium, hexavalent	0.35		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: SUMP-B_20190618 — Lab Sample ID: 480-155088-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	160		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.14		0.10	0.025	mg/L	10		9012B	Total/NA
Chromium, hexavalent	0.12		0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: AW-A14_20190618 — Lab Sample ID: 480-155088-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	3.6		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.046		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: DUP_20190618 — Lab Sample ID: 480-155088-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	61000	B	150	36	ug/L	100		6020A	Dissolved
Cyanide, Total	0.092		0.010	0.0025	mg/L	1		9012B	Total/NA
Chromium, hexavalent	48		2.0	1.0	mg/L	200		7196A	Dissolved

Client Sample ID: AW-C11_20190618 — Lab Sample ID: 480-155088-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	5400	B	15	3.6	ug/L	10		6020A	Dissolved
Cyanide, Total	0.088	F1	0.010	0.0025	mg/L	1		9012B	Total/NA
Chromium, hexavalent	4.7		0.50	0.25	mg/L	50		7196A	Dissolved

Client Sample ID: EB_20190618 — Lab Sample ID: 480-155088-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	0.84	J	1.5	0.36	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155088-1

Client Sample ID: MW-OB14_20190618

Lab Sample ID: 480-155088-1
Date Collected: 06/18/19 11:33
Matrix: Water
Date Received: 06/19/19 08:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	160		1.5	0.36	ug/L		06/20/19 08:31	06/20/19 18:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/26/19 11:11	06/28/19 10:24	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.12		0.010	0.0050	mg/L			06/19/19 09:37	1

Client Sample ID: AW-B4_20190518

Lab Sample ID: 480-155088-2
Date Collected: 06/18/19 14:08
Matrix: Water
Date Received: 06/19/19 08:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	16		1.5	0.36	ug/L		06/20/19 08:31	06/20/19 18:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.030		0.010	0.0025	mg/L		06/26/19 11:11	06/28/19 10:25	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.012		0.010	0.0050	mg/L			06/19/19 09:37	1

Client Sample ID: EW-B5_20190618

Lab Sample ID: 480-155088-3
Date Collected: 06/18/19 14:15
Matrix: Water
Date Received: 06/19/19 08:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	58000	B	150	36	ug/L		06/20/19 08:31	06/26/19 14:48	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.91	H	0.10	0.025	mg/L		06/26/19 11:11	07/03/19 10:56	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	46		2.0	1.0	mg/L			06/19/19 09:37	200

Client Sample ID: SUMP-A_20190618

Lab Sample ID: 480-155088-4
Date Collected: 06/18/19 13:59
Matrix: Water
Date Received: 06/19/19 08:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	380		1.5	0.36	ug/L		06/20/19 08:31	06/20/19 18:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.070		0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 15:39	1

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155088-1

Client Sample ID: SUMP-A_20190618

Lab Sample ID: 480-155088-4
Date Collected: 06/18/19 13:59
Matrix: Water
Date Received: 06/19/19 08:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.35		0.010	0.0050	mg/L			06/19/19 09:37	1

Client Sample ID: SUMP-B_20190618

Lab Sample ID: 480-155088-5
Date Collected: 06/18/19 14:55
Matrix: Water
Date Received: 06/19/19 08:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	160		1.5	0.36	ug/L		06/20/19 08:31	06/20/19 18:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.14		0.10	0.025	mg/L		06/27/19 15:50	06/29/19 16:02	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.12		0.010	0.0050	mg/L			06/19/19 09:37	1

Client Sample ID: AW-A14_20190618

Lab Sample ID: 480-155088-6
Date Collected: 06/18/19 11:11
Matrix: Water
Date Received: 06/19/19 08:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	3.6		1.5	0.36	ug/L		06/20/19 08:31	06/20/19 18:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.046		0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 14:33	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/19/19 09:37	1

Client Sample ID: DUP_20190618

Lab Sample ID: 480-155088-7
Date Collected: 06/18/19 00:00
Matrix: Water
Date Received: 06/19/19 08:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	61000	B	150	36	ug/L		06/20/19 08:31	06/26/19 14:50	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.092		0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 15:41	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	48		2.0	1.0	mg/L			06/19/19 09:37	200

Client Sample Results

Client: Ashland LLC
Job ID: 480-155088-1
Project/Site: Hercules Glens Falls 2Q19

Client Sample ID: AW-C11_20190618
Lab Sample ID: 480-155088-8
Date Collected: 06/18/19 15:20
Matrix: Water
Date Received: 06/19/19 08:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	5400	B	15	3.6	ug/L		06/20/19 08:31	06/26/19 14:53	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.088	F1	0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 14:17	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	4.7		0.50	0.25	mg/L			06/19/19 09:37	50

Client Sample ID: EB_20190618
Lab Sample ID: 480-155088-9
Date Collected: 06/18/19 15:30
Matrix: Water
Date Received: 06/19/19 08:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.84	J	1.5	0.36	ug/L		06/20/19 08:31	06/20/19 18:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 14:35	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/19/19 09:37	1

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155088-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 480-478595/1-A
Matrix: Water
Analysis Batch: 479023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 478595

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.5	U	1.5	0.36	ug/L		06/20/19 08:31	06/20/19 18:01	1

Lab Sample ID: MB 480-478595/1-A
Matrix: Water
Analysis Batch: 479863

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 478595

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	2.03		1.5	0.36	ug/L		06/20/19 08:31	06/26/19 14:43	1

Lab Sample ID: LCS 480-478595/2-A
Matrix: Water
Analysis Batch: 479023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 478595

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	20.0	18.9		ug/L		94	80 - 120

Lab Sample ID: LCS 480-478595/2-A
Matrix: Water
Analysis Batch: 479863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 478595

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	20.0	19.2		ug/L		96	80 - 120

Lab Sample ID: 480-155088-8 MS
Matrix: Water
Analysis Batch: 479863

Client Sample ID: AW-C11_20190618
Prep Type: Dissolved
Prep Batch: 478595

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	5400	B	20.0	5090	4	ug/L		-1756	75 - 125

Lab Sample ID: 480-155088-8 MSD
Matrix: Water
Analysis Batch: 479863

Client Sample ID: AW-C11_20190618
Prep Type: Dissolved
Prep Batch: 478595

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Chromium	5400	B	20.0	5350	4	ug/L		-468	75 - 125	5	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-478667/27
Matrix: Water
Analysis Batch: 478667

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/19/19 09:37	1

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: MB 480-478667/51
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478667

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/19/19 09:37	1

Lab Sample ID: MB 480-478667/75
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478667

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/19/19 09:37	1

Lab Sample ID: LCS 480-478667/28
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478667

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0496		mg/L		99	85 - 115

Lab Sample ID: LCS 480-478667/52
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478667

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0496		mg/L		99	85 - 115

Lab Sample ID: LCS 480-478667/76
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478667

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0509		mg/L		102	85 - 115

Lab Sample ID: 480-155088-1 MS
Client Sample ID: MW-OB14_20190618
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 478667

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.12		0.0500	0.167		mg/L		94	85 - 115

Lab Sample ID: 480-155088-8 MS
Client Sample ID: AW-C11_20190618
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 478667

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	4.7		2.50	7.31		mg/L		107	85 - 115

Lab Sample ID: 480-155088-8 MSD
Client Sample ID: AW-C11_20190618
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 478667

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	4.7		2.50	7.13		mg/L		99	85 - 115	3	20

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155088-1

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 680-575797/1-A
Matrix: Water
Analysis Batch: 576225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 575797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/26/19 11:11	06/28/19 10:05	1

Lab Sample ID: LCS 680-575797/2-A
Matrix: Water
Analysis Batch: 576276

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 575797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0504		mg/L		101	85 - 115

Lab Sample ID: MB 680-576086/1-A
Matrix: Water
Analysis Batch: 576387

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 576086

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 14:12	1

Lab Sample ID: LCS 680-576086/2-A
Matrix: Water
Analysis Batch: 576387

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 576086

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0463		mg/L		93	85 - 115

Lab Sample ID: 480-155088-8 MS
Matrix: Water
Analysis Batch: 576387

Client Sample ID: AW-C11_20190618
Prep Type: Total/NA
Prep Batch: 576086

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.088	F1	0.0500	0.142		mg/L		108	85 - 115

Lab Sample ID: 480-155088-8 MSD
Matrix: Water
Analysis Batch: 576387

Client Sample ID: AW-C11_20190618
Prep Type: Total/NA
Prep Batch: 576086

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.088	F1	0.0500	0.129	F1	mg/L		82	85 - 115	10	20

QC Association Summary

Client: Ashland LLC　　Job ID: 480-155088-1
Project/Site: Hercules Glens Falls 2Q19

Metals

Prep Batch: 478595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155088-1	MW-OB14_20190618	Dissolved	Water	3020A	
480-155088-2	AW-B4_20190518	Dissolved	Water	3020A	
480-155088-3	EW-B5_20190618	Dissolved	Water	3020A	
480-155088-4	SUMP-A_20190618	Dissolved	Water	3020A	
480-155088-5	SUMP-B_20190618	Dissolved	Water	3020A	
480-155088-6	AW-A14_20190618	Dissolved	Water	3020A	
480-155088-7	DUP_20190618	Dissolved	Water	3020A	
480-155088-8	AW-C11_20190618	Dissolved	Water	3020A	
480-155088-9	EB_20190618	Dissolved	Water	3020A	
MB 480-478595/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-478595/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-155088-8 MS	AW-C11_20190618	Dissolved	Water	3020A	
480-155088-8 MSD	AW-C11_20190618	Dissolved	Water	3020A	

Analysis Batch: 479023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155088-1	MW-OB14_20190618	Dissolved	Water	6020A	478595
480-155088-2	AW-B4_20190518	Dissolved	Water	6020A	478595
480-155088-4	SUMP-A_20190618	Dissolved	Water	6020A	478595
480-155088-5	SUMP-B_20190618	Dissolved	Water	6020A	478595
480-155088-6	AW-A14_20190618	Dissolved	Water	6020A	478595
480-155088-9	EB_20190618	Dissolved	Water	6020A	478595
MB 480-478595/1-A	Method Blank	Total/NA	Water	6020A	478595
LCS 480-478595/2-A	Lab Control Sample	Total/NA	Water	6020A	478595

Analysis Batch: 479863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155088-3	EW-B5_20190618	Dissolved	Water	6020A	478595
480-155088-7	DUP_20190618	Dissolved	Water	6020A	478595
480-155088-8	AW-C11_20190618	Dissolved	Water	6020A	478595
MB 480-478595/1-A	Method Blank	Total/NA	Water	6020A	478595
LCS 480-478595/2-A	Lab Control Sample	Total/NA	Water	6020A	478595
480-155088-8 MS	AW-C11_20190618	Dissolved	Water	6020A	478595
480-155088-8 MSD	AW-C11_20190618	Dissolved	Water	6020A	478595

General Chemistry

Analysis Batch: 478667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155088-1	MW-OB14_20190618	Dissolved	Water	7196A	
480-155088-2	AW-B4_20190518	Dissolved	Water	7196A	
480-155088-3	EW-B5_20190618	Dissolved	Water	7196A	
480-155088-4	SUMP-A_20190618	Dissolved	Water	7196A	
480-155088-5	SUMP-B_20190618	Dissolved	Water	7196A	
480-155088-6	AW-A14_20190618	Dissolved	Water	7196A	
480-155088-7	DUP_20190618	Dissolved	Water	7196A	
480-155088-8	AW-C11_20190618	Dissolved	Water	7196A	
480-155088-9	EB_20190618	Dissolved	Water	7196A	
MB 480-478667/27	Method Blank	Total/NA	Water	7196A	
MB 480-478667/51	Method Blank	Total/NA	Water	7196A	
MB 480-478667/75	Method Blank	Total/NA	Water	7196A	

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General Chemistry (Continued)

Analysis Batch: 478667 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-478667/28	Lab Control Sample	Total/NA	Water	7196A	
LCS 480-478667/52	Lab Control Sample	Total/NA	Water	7196A	
LCS 480-478667/76	Lab Control Sample	Total/NA	Water	7196A	
480-155088-1 MS	MW-OB14_20190618	Dissolved	Water	7196A	
480-155088-8 MS	AW-C11_20190618	Dissolved	Water	7196A	
480-155088-8 MSD	AW-C11_20190618	Dissolved	Water	7196A	

Prep Batch: 575797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155088-1	MW-OB14_20190618	Total/NA	Water	9012B	
480-155088-2	AW-B4_20190518	Total/NA	Water	9012B	
480-155088-3	EW-B5_20190618	Total/NA	Water	9012B	
MB 680-575797/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-575797/2-A	Lab Control Sample	Total/NA	Water	9012B	

Prep Batch: 576086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155088-4	SUMP-A_20190618	Total/NA	Water	9012B	
480-155088-5	SUMP-B_20190618	Total/NA	Water	9012B	
480-155088-6	AW-A14_20190618	Total/NA	Water	9012B	
480-155088-7	DUP_20190618	Total/NA	Water	9012B	
480-155088-8	AW-C11_20190618	Total/NA	Water	9012B	
480-155088-9	EB_20190618	Total/NA	Water	9012B	
MB 680-576086/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-576086/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-155088-8 MS	AW-C11_20190618	Total/NA	Water	9012B	
480-155088-8 MSD	AW-C11_20190618	Total/NA	Water	9012B	

Analysis Batch: 576225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155088-1	MW-OB14_20190618	Total/NA	Water	9012B	575797
480-155088-2	AW-B4_20190518	Total/NA	Water	9012B	575797
MB 680-575797/1-A	Method Blank	Total/NA	Water	9012B	575797

Analysis Batch: 576276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-575797/2-A	Lab Control Sample	Total/NA	Water	9012B	575797

Analysis Batch: 576387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155088-4	SUMP-A_20190618	Total/NA	Water	9012B	576086
480-155088-5	SUMP-B_20190618	Total/NA	Water	9012B	576086
480-155088-6	AW-A14_20190618	Total/NA	Water	9012B	576086
480-155088-7	DUP_20190618	Total/NA	Water	9012B	576086
480-155088-8	AW-C11_20190618	Total/NA	Water	9012B	576086
480-155088-9	EB_20190618	Total/NA	Water	9012B	576086
MB 680-576086/1-A	Method Blank	Total/NA	Water	9012B	576086
LCS 680-576086/2-A	Lab Control Sample	Total/NA	Water	9012B	576086
480-155088-8 MS	AW-C11_20190618	Total/NA	Water	9012B	576086
480-155088-8 MSD	AW-C11_20190618	Total/NA	Water	9012B	576086

General Chemistry

Analysis Batch: 576828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155088-3	EW-B5_20190618	Total/NA	Water	9012B	575797

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

Client Sample ID: MW-OB14_20190618 **Lab Sample ID: 480-155088-1**
Date Collected: 06/18/19 11:33 **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			478595	06/20/19 08:31	EMB	TAL BUF
Dissolved	Analysis	6020A		1	479023	06/20/19 18:06	KMP	TAL BUF
Dissolved	Analysis	7196A		1	478667	06/19/19 09:37	MDL	TAL BUF
Total/NA	Prep	9012B			575797	06/26/19 11:11	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576225	06/28/19 10:24	ALG	TAL SAV

Client Sample ID: AW-B4_20190518 **Lab Sample ID: 480-155088-2**
Date Collected: 06/18/19 14:08 **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			478595	06/20/19 08:31	EMB	TAL BUF
Dissolved	Analysis	6020A		1	479023	06/20/19 18:15	KMP	TAL BUF
Dissolved	Analysis	7196A		1	478667	06/19/19 09:37	MDL	TAL BUF
Total/NA	Prep	9012B			575797	06/26/19 11:11	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576225	06/28/19 10:25	ALG	TAL SAV

Client Sample ID: EW-B5_20190618 **Lab Sample ID: 480-155088-3**
Date Collected: 06/18/19 14:15 **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			478595	06/20/19 08:31	EMB	TAL BUF
Dissolved	Analysis	6020A		100	479863	06/26/19 14:48	KMP	TAL BUF
Dissolved	Analysis	7196A		200	478667	06/19/19 09:37	MDL	TAL BUF
Total/NA	Prep	9012B			575797	06/26/19 11:11	MDF	TAL SAV
Total/NA	Analysis	9012B		10	576828	07/03/19 10:56	ALG	TAL SAV

Client Sample ID: SUMP-A_20190618 **Lab Sample ID: 480-155088-4**
Date Collected: 06/18/19 13:59 **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			478595	06/20/19 08:31	EMB	TAL BUF
Dissolved	Analysis	6020A		1	479023	06/20/19 18:20	KMP	TAL BUF
Dissolved	Analysis	7196A		1	478667	06/19/19 09:37	MDL	TAL BUF
Total/NA	Prep	9012B			576086	06/27/19 15:50	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576387	06/29/19 15:39	ALG	TAL SAV

Client Sample ID: SUMP-B_20190618 **Lab Sample ID: 480-155088-5**
Date Collected: 06/18/19 14:55 **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			478595	06/20/19 08:31	EMB	TAL BUF
Dissolved	Analysis	6020A		1	479023	06/20/19 18:22	KMP	TAL BUF
Dissolved	Analysis	7196A		1	478667	06/19/19 09:37	MDL	TAL BUF
Total/NA	Prep	9012B			576086	06/27/19 15:50	MDF	TAL SAV
Total/NA	Analysis	9012B		10	576387	06/29/19 16:02	ALG	TAL SAV

Client Sample ID: AW-A14_20190618 **Lab Sample ID: 480-155088-6**
Date Collected: 06/18/19 11:11 **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			478595	06/20/19 08:31	EMB	TAL BUF
Dissolved	Analysis	6020A		1	479023	06/20/19 18:25	KMP	TAL BUF
Dissolved	Analysis	7196A		1	478667	06/19/19 09:37	MDL	TAL BUF
Total/NA	Prep	9012B			576086	06/27/19 15:50	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576387	06/29/19 14:33	ALG	TAL SAV

Client Sample ID: DUP_20190618 **Lab Sample ID: 480-155088-7**
Date Collected: 06/18/19 00:00 **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			478595	06/20/19 08:31	EMB	TAL BUF
Dissolved	Analysis	6020A		100	479863	06/26/19 14:50	KMP	TAL BUF
Dissolved	Analysis	7196A		200	478667	06/19/19 09:37	MDL	TAL BUF
Total/NA	Prep	9012B			576086	06/27/19 15:50	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576387	06/29/19 15:41	ALG	TAL SAV

Client Sample ID: AW-C11_20190618 **Lab Sample ID: 480-155088-8**
Date Collected: 06/18/19 15:20 **Matrix: Water**
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			478595	06/20/19 08:31	EMB	TAL BUF
Dissolved	Analysis	6020A		10	479863	06/26/19 14:53	KMP	TAL BUF
Dissolved	Analysis	7196A		50	478667	06/19/19 09:37	MDL	TAL BUF
Total/NA	Prep	9012B			576086	06/27/19 15:50	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576387	06/29/19 14:17	ALG	TAL SAV

Client Sample ID: EB_20190618
Lab Sample ID: 480-155088-9
Date Collected: 06/18/19 15:30
Matrix: Water
Date Received: 06/19/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			478595	06/20/19 08:31	EMB	TAL BUF
Dissolved	Analysis	6020A		1	479023	06/20/19 18:48	KMP	TAL BUF
Dissolved	Analysis	7196A		1	478667	06/19/19 09:37	MDL	TAL BUF
Total/NA	Prep	9012B			576086	06/27/19 15:50	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576387	06/29/19 14:35	ALG	TAL SAV

Laboratory References:

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

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

Laboratory: Eurofins TestAmerica, Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10842	04-01-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9012B	9012B	Water	Cyanide, Total

Method Summary

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUF
7196A	Chromium, Hexavalent	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL SAV
3020A	Preparation, Total Metals	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155088-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-155088-1	MW-OB14_20190618	Water	06/18/19 11:33	06/19/19 08:00	
480-155088-2	AW-B4_20190518	Water	06/18/19 14:08	06/19/19 08:00	
480-155088-3	EW-B5_20190618	Water	06/18/19 14:15	06/19/19 08:00	
480-155088-4	SUMP-A_20190618	Water	06/18/19 13:59	06/19/19 08:00	
480-155088-5	SUMP-B_20190618	Water	06/18/19 14:55	06/19/19 08:00	
480-155088-6	AW-A14_20190618	Water	06/18/19 11:11	06/19/19 08:00	
480-155088-7	DUP_20190618	Water	06/18/19 00:00	06/19/19 08:00	
480-155088-8	AW-C11_20190618	Water	06/18/19 15:20	06/19/19 08:00	
480-155088-9	EB_20190618	Water	06/18/19 15:30	06/19/19 08:00	

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

Albany
#224

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Client Contact	Mr Jim Vondracek
Company	Ashland Inc
Address	5200 Blazer Parkway DS-4
City	Dublin
State, Zip	OH, 43017
Phone	614-790-6146
Email	jevondracek@ashland.com, cassie reuter@ehs support com
Project Name	Hercules Glens Falls Quarterly Event
Site	Ashland Glens Falls
Sampler	Garrett Crowe
Phone	860 992 2636
Due Date Requested:	
TAT Requested (days):	Standard
PO #	4502471936
WO #	
Project #	68000956
SSOW#	
Lab PM	Barnett, Eddie T
E-Mail	eddie.barnett@testamericainc com
Carrier Tracking No(s)	
COC No	680-76228-31646 1
Page	Page 1 of 1
Job #	

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
M - Hexane
N - None
O - AsNaO2

480-155088 Chain of Custody

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent (field filtered)	6020A - Dissolved Total Chromium and Vanadium (field filtered)	2540C_Calcd - Total Dissolved Solids (field filtered)	2340C - Hardness as calcium carbonate	8260C - (MOD) TCL list OLM04.2 (Dichlorobenzenes [1,2-, 1,3-, 1,4-])	Total Number of containers	Special Instructions/Note:
			Preservation Code:				B	N	D	N	D	A		
MW-OB14_20190618	6/18/19	1153	G	Water	Y	N	X		X				2	
AW-B4_20190618		1408	G	Water	Y	N	X		X				2	
EW-BS_20190618		1415	G	Water	Y	N	X		X				2	
SUMP-A_20190618		1359	G	Water	Y	N	X		X				2	
SUMP-B_20190618		1455	G	Water	Y	N	X		X				2	
AW-A14_20190618		1111	G	Water	Y	N	X		X				2	
DUP_20190618		—	G	Water	Y	N	X		X				2	
AW-C11_20190618		1520	G	Water	Y	Y	X		X				4	MS/MSD
EB_20190618	6/18/19	1530	G	Water	Y	N	X		X				2	
				Water										
				Water										

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements

Empty Kit Relinquished by: Date: Time: Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6/18/19 1715	Antea Group	Karl Zoeller	6/18/19 1715	TA
Karl Zoeller	6/18/19 1800	TA	[signature]	06/19/19 0800	
				06/19/19	

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.6 #1

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

Albany
#224

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Garrett Crowe	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):
Client Contact: Mr. Jim Vondracek	Phone: 860 942 2636	E-Mail: eddie.barnett@testamericainc.com	COC No: 680-76228-31646.1
Company: Ashland Inc			Page: Page 1 of 1
Address: 5200 Blazer Parkway DS-4	Due Date Requested:		Job #:
City: Dublin	TAT Requested (days): Standard		
State, Zip: OH 43017			
Phone: 614-790-6148	PO #: 4502471936		
Email: jevondracek@ashland.com, cassie.reuter@ehs support.com	WO #:		
Project Name: Hercules Glens Falls Quarterly Event	Project #: 68000956		
Site: Ashland Glens Falls	SSOW#:		

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA
M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent (field filtered)	6020A - Dissolved Total Chromium and Vanadium (field filtered)	2540C_Calcd - Total Dissolved Solids (field filtered)	2340C - Hardness as calcium carbonate	8260C - (MOD) TCL list OLM04.2 (Dichlorobenzenes [1,2-, 1,3-, 1,4-])	Total Number of containers	Special Instructions/Note:
			Preservation Code:				B	N	D	N	D	A		
MW-OB14_20190618	6/18/19	1133	G	Water	Y	N		X					1	
AW-B4_20190618		1408	G	Water	Y	N		X					1	
EW-B5_20190618		1415	G	Water	Y	N		X					1	
SUMP-A_20190618		1359	G	Water	Y	N		X					1	
SUMP-B_20190618		1455	G	Water	Y	N		X					1	
AW-A14_20190618		1111	G	Water	Y	N		X					1	
DUP_20190618	6/18/19	—	G	Water	Y	N		X					1	
AW-C11_20190618	6/18/19	1520	G	Water	Y	Y		X					2	MS/MSD
EB_20190618	6/18/19	1530	G	Water	Y	N		X					1	
				Water										
				Water										

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:		
Relinquished by: [signature]	Date/Time: 6/18/19 1715	Company: Arcadis Group	Received by: [signature]	Date/Time: 6/18/19 1715	Company: TA	
Relinquished by: [signature]	Date/Time: 6/18/19 1800	Company: TA	Received by: → 6/19/19 0800	Date/Time: 6/19/19	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-50329.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-155088-1
Address: 5102 LaRoche Avenue,	Due Date Requested: 7/1/2019			
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls 2Q19	Project #: 68000956			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-OB14_20190618 (480-155088-1)	6/18/19	11:33 Eastern		Water			X	1	
AW-B4_20190518 (480-155088-2)	6/18/19	14:08 Eastern		Water			X	1	
EW-B5_20190618 (480-155088-3)	6/18/19	14:15 Eastern		Water			X	1	
SUMP-A_20190618 (480-155088-4)	6/18/19	13:59 Eastern		Water			X	1	
SUMP-B_20190618 (480-155088-5)	6/18/19	14:55 Eastern		Water			X	1	
AW-A14_20190618 (480-155088-6)	6/18/19	11:11 Eastern		Water			X	1	
DUP_20190618 (480-155088-7)	6/18/19	Eastern		Water			X	1	
AW-C11_20190618 (480-155088-8)	6/18/19	15:20 Eastern		Water			X	1	
AW-C11_20190618 (480-155088-8MS)	6/18/19	15:20 Eastern	MS	Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ______ Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: [signature]	Date/Time: 6-19-19 1530	Company: [illegible]	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by: [signature]	Date/Time: 6-20-19 0945	Company:

5.9/5.7

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-50329.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-155088-1
Address: 5102 LaRoche Avenue,	Due Date Requested: 7/1/2019			
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls 2Q19	Project #: 68000956			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep (MOD) Local Method	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
AW-C11_20190618 (480-155088-8MSD)	6/18/19	15:20 Eastern	MSD	Water			X	1	
EB_20190618 (480-155088-9)	6/18/19	15:30 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6-19-19 1530	[signature]			
			[signature]	6-20-19 0945	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.9/5.9

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-155088-1

Login Number: 155088
List Number: 2
Creator: Harper, Marcus D

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-155088-1

Login Number: 155088
List Number: 3
Creator: Weston, Pamela

List Source: Eurofins TestAmerica, Savannah
List Creation: 06/20/19 12:10 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-155152-1
Client Project/Site: Hercules Glens Falls 2Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
6/30/2019 9:35:29 AM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Ashland LLC
Job ID: 480-155152-1
Project/Site: Hercules Glens Falls 2Q19

Qualifiers

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 480-155152-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 2Q19

Report Number: 480-155152-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 06/20/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

HEXAVALENT CHROMIUM
Samples EB_20190619 (480-155152-1), MW-OB25_20190619 (480-155152-2) and MW-OB26_20190619 (480-155152-3) were analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The samples were analyzed on 06/20/2019.

Samples EB_20190619 (480-155152-1), MW-OB25_20190619 (480-155152-2) and MW-OB26_20190619 (480-155152-3) were analyzed outside of analytical holding time due to laboratory error.

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

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155152-1

Client Sample ID: EB_20190619 — Lab Sample ID: 480-155152-1

No Detections.

Client Sample ID: MW-OB25_20190619 — Lab Sample ID: 480-155152-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.25	H	0.010	0.0050	mg/L	1		7196A	Dissolved

Client Sample ID: MW-OB26_20190619 — Lab Sample ID: 480-155152-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium, hexavalent	0.026	H	0.010	0.0050	mg/L	1		7196A	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Ashland LLC

Job ID: 480-155152-1

Project/Site: Hercules Glens Falls 2Q19

Client Sample ID: EB_20190619

Lab Sample ID: 480-155152-1

Date Collected: 06/19/19 10:41

Matrix: Water

Date Received: 06/20/19 08:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U H	0.010	0.0050	mg/L			06/20/19 13:00	1

Client Sample ID: MW-OB25_20190619

Lab Sample ID: 480-155152-2

Date Collected: 06/19/19 09:35

Matrix: Water

Date Received: 06/20/19 08:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.25**	**H**	0.010	0.0050	mg/L			06/20/19 13:00	1

Client Sample ID: MW-OB26_20190619

Lab Sample ID: 480-155152-3

Date Collected: 06/19/19 09:25

Matrix: Water

Date Received: 06/20/19 08:00

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	**0.026**	**H**	0.010	0.0050	mg/L			06/20/19 13:00	1

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

Client: Ashland LLC
Job ID: 480-155152-1
Project/Site: Hercules Glens Falls 2Q19

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-478864/3
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478864

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.010	U	0.010	0.0050	mg/L			06/20/19 13:00	1

Lab Sample ID: LCS 480-478864/4
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 478864

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.0500	0.0521		mg/L		104	85 - 115

Lab Sample ID: 480-155152-2 MS
Client Sample ID: MW-OB25_20190619
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 478864

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.25	H	0.0500	0.305	4	mg/L		112	85 - 115

Lab Sample ID: 480-155152-1 DU
Client Sample ID: EB_20190619
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 478864

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chromium, hexavalent	0.010	U H	0.010	U	mg/L		NC	20

General Chemistry

Analysis Batch: 478864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155152-1	EB_20190619	Dissolved	Water	7196A	
480-155152-2	MW-OB25_20190619	Dissolved	Water	7196A	
480-155152-3	MW-OB26_20190619	Dissolved	Water	7196A	
MB 480-478864/3	Method Blank	Total/NA	Water	7196A	
LCS 480-478864/4	Lab Control Sample	Total/NA	Water	7196A	
480-155152-2 MS	MW-OB25_20190619	Dissolved	Water	7196A	
480-155152-1 DU	EB_20190619	Dissolved	Water	7196A	

Client Sample ID: EB_20190619 **Lab Sample ID: 480-155152-1**
Date Collected: 06/19/19 10:41 **Matrix: Water**
Date Received: 06/20/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	478864	06/20/19 13:00	CLT	TAL BUF

Client Sample ID: MW-OB25_20190619 **Lab Sample ID: 480-155152-2**
Date Collected: 06/19/19 09:35 **Matrix: Water**
Date Received: 06/20/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	478864	06/20/19 13:00	CLT	TAL BUF

Client Sample ID: MW-OB26_20190619 **Lab Sample ID: 480-155152-3**
Date Collected: 06/19/19 09:25 **Matrix: Water**
Date Received: 06/20/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	7196A		1	478864	06/20/19 13:00	CLT	TAL BUF

Laboratory References:

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

Accreditation/Certification Summary

Client: Ashland LLC
Job ID: 480-155152-1
Project/Site: Hercules Glens Falls 2Q19

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

Laboratory: Eurofins TestAmerica, Savannah

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10842	04-01-20

Method	Method Description	Protocol	Laboratory
7196A	Chromium, Hexavalent	SW846	TAL BUF

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155152-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-155152-1	EB_20190619	Water	06/19/19 10:41	06/20/19 08:00	
480-155152-2	MW-OB25_20190619	Water	06/19/19 09:35	06/20/19 08:00	
480-155152-3	MW-OB26_20190619	Water	06/19/19 09:25	06/20/19 08:00	

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

Albany #224

Chain of Custody Record

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Garett Crowe	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 680-76228-31646.1
Client Contact: Mr. Jim Vondracek	Phone: 860-992-2656	E-Mail: eddie.barnett@testamericainc.com		Page: Page 1 of 1
Company: Ashland Inc				Job #:
Address: 5200 Blazer Parkway DS-4	Due Date Requested:			
City: Dublin	TAT Requested (days): Standard			
State, Zip: OH, 43017				
Phone: 614-790-6146	PO #: 4502471936			
Email: jevondracek@ashland.com, cassie.reuter@ehs support.com	WO #:			
Project Name: Hercules Glens Falls Quarterly Event	Project #: 68000956			
Site: Ashland Glens Falls	SSOW#:			

Analysis Requested

Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, M - Hexane, N - None, O - AsNaO2

480-155152 Chain of Custody

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent (field filtered)	6020A - Dissolved Total Chromium and Vanadium (field filtered)	2540C_Calcd - Total Dissolved Solids (field filtered)	2340C - Hardness as calcium carbonate	8260C - (MOD) TCL list OLM04.2 (Dichlorobenzenes [1,2-, 1,3-, 1,4-])	Total Number of containers	Special Instructions/Note:
				Preservation Code:			B	N	D	N	D	A		
EB_20190619	6/19/19	1041	G	Water	Y	N		X					1	
MW-0B25_20190619	6/19/19	935	G	Water	Y	N		X					1	
MW-0B26_20190619	6/19/19	925	G	Water	Y	N		X					1	
				Water										
	KZ 6/19/19			Water										
				Water										
				Water										
				Water										
				Water										
				Water										
				Water										

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Haley Brown	6/19/19 14:10	Antea group	Karl Zacher	6/19/19 1410	TA
Karl Zacher	6/19/19 1800	TA	Unknown Cikolb	06/20/19 0800	TA

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.8 #1 ICE

6/30/2019

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

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-155152-1

Login Number: 155152
List Number: 1
Creator: Kolb, Chris M

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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TestAmerica

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

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-155178-2
Client Project/Site: Hercules Glens Falls 2Q19

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
7/10/2019 10:15:29 AM

Eddie Barnett, Project Manager I
(912)250-0280
eddie.barnett@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155178-2

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

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

Job ID: 480-155178-2

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 2Q19

Report Number: 480-155178-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 06/19/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.3º C.

METALS (ICPMS) - DISSOLVED
Samples EB_20190619 (480-155178-10), MW-OB25_20190619 (480-155178-11) and MW-OB26_20190619 (480-155178-12) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared on 07/02/2019 and analyzed on 07/05/2019.

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

TOTAL CYANIDE
Samples EB_20190619 (480-155178-10), MW-OB25_20190619 (480-155178-11) and MW-OB26_20190619 (480-155178-12) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared on 06/27/2019 and analyzed on 06/29/2019.

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

Detection Summary

Client: Ashland LLC
Job ID: 480-155178-2
Project/Site: Hercules Glens Falls 2Q19

Client Sample ID: EB_20190619 — Lab Sample ID: 480-155178-10

No Detections.

Client Sample ID: MW-OB25_20190619 — Lab Sample ID: 480-155178-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	230		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.068		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: MW-OB26_20190619 — Lab Sample ID: 480-155178-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	18		1.5	0.36	ug/L	1		6020A	Dissolved
Cyanide, Total	0.065		0.010	0.0025	mg/L	1		9012B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Ashland LLC
Job ID: 480-155178-2
Project/Site: Hercules Glens Falls 2Q19

Client Sample ID: EB_20190619
Lab Sample ID: 480-155178-10
Date Collected: 06/19/19 10:41
Matrix: Water
Date Received: 06/19/19 18:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.5	U	1.5	0.36	ug/L		07/02/19 07:25	07/05/19 12:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 14:41	1

Client Sample ID: MW-OB25_20190619
Lab Sample ID: 480-155178-11
Date Collected: 06/19/19 09:35
Matrix: Ground Water
Date Received: 06/19/19 18:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	**230**		1.5	0.36	ug/L		07/02/19 07:25	07/05/19 12:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.068**		0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 14:42	1

Client Sample ID: MW-OB26_20190619
Lab Sample ID: 480-155178-12
Date Collected: 06/19/19 09:25
Matrix: Ground Water
Date Received: 06/19/19 18:00

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	**18**		1.5	0.36	ug/L		07/02/19 07:25	07/05/19 12:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.065**		0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 15:47	1

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155178-2

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 480-480448/1-A
Matrix: Water
Analysis Batch: 480958

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 480448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.5	U	1.5	0.36	ug/L		07/02/19 07:25	07/05/19 11:58	1

Lab Sample ID: LCS 480-480448/2-A
Matrix: Water
Analysis Batch: 480958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 480448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Chromium	20.0	18.5		ug/L		93	80 - 120

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 680-576086/1-A
Matrix: Water
Analysis Batch: 576387

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 576086

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/27/19 15:50	06/29/19 14:12	1

Lab Sample ID: LCS 680-576086/2-A
Matrix: Water
Analysis Batch: 576387

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 576086

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0463		mg/L		93	85 - 115

QC Association Summary

Metals

Prep Batch: 480448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155178-10	EB_20190619	Dissolved	Water	3020A	
480-155178-11	MW-OB25_20190619	Dissolved	Ground Water	3020A	
480-155178-12	MW-OB26_20190619	Dissolved	Ground Water	3020A	
MB 480-480448/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-480448/2-A	Lab Control Sample	Total/NA	Water	3020A	

Analysis Batch: 480958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155178-10	EB_20190619	Dissolved	Water	6020A	480448
480-155178-11	MW-OB25_20190619	Dissolved	Ground Water	6020A	480448
480-155178-12	MW-OB26_20190619	Dissolved	Ground Water	6020A	480448
MB 480-480448/1-A	Method Blank	Total/NA	Water	6020A	480448
LCS 480-480448/2-A	Lab Control Sample	Total/NA	Water	6020A	480448

General Chemistry

Prep Batch: 576086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155178-10	EB_20190619	Total/NA	Water	9012B	
480-155178-11	MW-OB25_20190619	Total/NA	Ground Water	9012B	
480-155178-12	MW-OB26_20190619	Total/NA	Ground Water	9012B	
MB 680-576086/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-576086/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 576387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-155178-10	EB_20190619	Total/NA	Water	9012B	576086
480-155178-11	MW-OB25_20190619	Total/NA	Ground Water	9012B	576086
480-155178-12	MW-OB26_20190619	Total/NA	Ground Water	9012B	576086
MB 680-576086/1-A	Method Blank	Total/NA	Water	9012B	576086
LCS 680-576086/2-A	Lab Control Sample	Total/NA	Water	9012B	576086

Client: Ashland LLC
Job ID: 480-155178-2
Project/Site: Hercules Glens Falls 2Q19

Client Sample ID: EB_20190619
Lab Sample ID: 480-155178-10
Date Collected: 06/19/19 10:41
Matrix: Water
Date Received: 06/19/19 18:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			480448	07/02/19 07:25	EMB	TAL BUF
Dissolved	Analysis	6020A		1	480958	07/05/19 12:16	KMP	TAL BUF
Total/NA	Prep	9012B			576086	06/27/19 15:50	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576387	06/29/19 14:41	ALG	TAL SAV

Client Sample ID: MW-OB25_20190619
Lab Sample ID: 480-155178-11
Date Collected: 06/19/19 09:35
Matrix: Ground Water
Date Received: 06/19/19 18:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			480448	07/02/19 07:25	EMB	TAL BUF
Dissolved	Analysis	6020A		1	480958	07/05/19 12:28	KMP	TAL BUF
Total/NA	Prep	9012B			576086	06/27/19 15:50	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576387	06/29/19 14:42	ALG	TAL SAV

Client Sample ID: MW-OB26_20190619
Lab Sample ID: 480-155178-12
Date Collected: 06/19/19 09:25
Matrix: Ground Water
Date Received: 06/19/19 18:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			480448	07/02/19 07:25	EMB	TAL BUF
Dissolved	Analysis	6020A		1	480958	07/05/19 12:19	KMP	TAL BUF
Total/NA	Prep	9012B			576086	06/27/19 15:50	MDF	TAL SAV
Total/NA	Analysis	9012B		1	576387	06/29/19 15:47	ALG	TAL SAV

Laboratory References:

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

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

Laboratory: Eurofins TestAmerica, Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10842	04-01-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9012B	9012B	Ground Water	Cyanide, Total
9012B	9012B	Water	Cyanide, Total

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL SAV
3020A	Preparation, Total Metals	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV

Protocol References:

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

Laboratory References:

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

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls 2Q19

Job ID: 480-155178-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-155178-10	EB_20190619	Water	06/19/19 10:41	06/19/19 18:00	
480-155178-11	MW-OB25_20190619	Ground Water	06/19/19 09:35	06/19/19 18:00	
480-155178-12	MW-OB26_20190619	Ground Water	06/19/19 09:25	06/19/19 18:00	

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

Albany #224

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Client Contact: Mr. Jim Vondracek	Sampler: Garrett Crowe	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):
Company: Ashland Inc	Phone: 860 992 2636	E-Mail: eddie barnett@testamericainc com	COC No: 680-76228-31646 1
Address: 5200 Blazer Parkway DS-4	Due Date Requested:		Page: Page 1 of 1
City: Dublin	TAT Requested (days): Standard		Job #:
State, Zip: OH, 43017			
Phone: 614-790-6146	PO #: 4502471936		
Email: jevondracek@ashland.com, cassie.reuter@ehs support com	WO #:		
Project Name: Hercules Glens Falls Quarterly Event	Project #: 68000956		
Site: Ashland Glens Falls	SSOW#:		

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent (field filtered)	6020A - Dissolved Total Chromium and Vanadium (field filtered)	2540C_Calcd - Total Dissolved Solids (field filtered)	2340C - Hardness as calcium carbonate	8260C - (MOD) TCL list OLM04 2 (Dichlorobenzenes [1,2-, 1,3-, 1,4-])	Total Number of containers	Special Instructions/Note:
			Preservation Code:				B	N	D	N	D	A		
EB_20190619	6/19/19	1041	G	Water	N	N	X		X				2	
MW-0825_20190619	6/19/19	935	G	Water	Y	N	X		X				2	
MW-0826_20190619	6/19/19	925	G	Water	Y	N	X		X				2	
				Water										
	RZ 6/19/19			Water										
				Water										
				Water										
				Water										
				Water										
				Water										
				Water										

Preservation Codes:

A - HCl, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Haley Brown	6/19/19 14:10		Rad Jordan	6/19/19 1410	TA
Rad Jordan	6/19/19 1800	TA			

Custody Seals Intact: Δ Yes Δ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-50344.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-155178-1
Address: 5102 LaRoche Avenue, ,	Due Date Requested: 7/1/2019			
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls O&M Quarterly	Project #: 68000956			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA

M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep (MOD) Local Method	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
MW-0B17-20190617 (480-155178-1)	6/17/19	15:20 Eastern		Water			X	1	
MW-0B18-20190619 (480-155178-2)	6/17/19	17:44 Eastern		Water			X	1	
MW-0B1920190618 (480-155178-3)	6/17/19	16:45 Eastern		Water			X	1	
MW-0B20-20190619 (480-155178-4)	6/17/19	15:22 Eastern		Water			X	1	
MW-0B21-20190619 (480-155178-5)	6/17/19	13:05 Eastern		Water			X	1	
MW-0B21-20190619 (480-155178-5MS)	6/17/19	13:05 Eastern	MS	Water			X	1	
MW-0B-23-20190619 (480-155178-6)	6/17/19	13:44 Eastern		Water			X	1	
EB-20190619 (480-155178-7)	6/17/19	Eastern		Water			X	1	
FB-20190618 (480-155178-8)	6/18/19	17:59 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification

Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6-20-19 1530	VHB	[signature]	6-21-19 0912	TASAV
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

4.3/4.3

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Barnett, Eddie T	Carrier Tracking No(s):	COC No: 480-50344.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: eddie.barnett@testamericainc.com	State of Origin: New York	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-155178-1
Address: 5102 LaRoche Avenue,	Due Date Requested: 7/1/2019	Analysis Requested		Preservation Codes:
City: Savannah	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA; M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Hercules Glens Falls O&M Quarterly	Project #: 68000956			
Site:	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B/9012B_Prep (MOD) Local Method	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
DUP-20190617 (480-155178-9)	6/17/19	Eastern		Water			X	1	
EB-20190619 (480-155178-10)	6/19/19	10:41 Eastern		Water			X	1	
MW-0B25-20190619 (480-155178-11)	6/19/19	09:35 Eastern		Water			X	1	
MW-0B26-20190619 (480-155178-12)	6/19/19	09:25 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: Can Lam	Date/Time: 6-20-19 1520	Company: TALB	Received by: [signature]	Date/Time: 6-21-19 0912	Company: TASAV
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 4.3/4.3		

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Ashland LLC Job Number: 480-155178-2

Login Number: 155178 **List Source: Eurofins TestAmerica, Buffalo**
List Number: 2
Creator: Harper, Marcus D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-155178-2

Login Number: 155178
List Number: 3
Creator: Nobles, Terry G

List Source: Eurofins TestAmerica, Savannah
List Creation: 06/21/19 12:50 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix C Tier II Validation Reports

EHS Validation Report Number: 217

Former Ciba Geigy Facility
Queensbury, New York

Analyses performed by: TestAmerica, Buffalo, New York and Savannah, Georgia

Sample Delivery Group (SDG): 480-149152
Analyses: Metals, General chemistry
Review Level: Tier II

EHS Support

Report Date:
March 8, 2019

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Sample Summary

A water sample was collected at the Former Ciba Geigy Facility in Queensbury, New York and was analyzed by Environmental Protection Agency (EPA) SW-846 Methods 6020A for metals, 9012B for cyanide, and 7196A for hexavalent chromium. Samples included in this Sample Delivery Group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Analysis	
					Metals	Gen chem
480-149152	480-149152-1	EWB5 _ 20190218	Water	2/18/2019	X	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

The sample was received in good condition and properly preserved. The chain of custody was properly completed except that there is no relinquishing information for the second custody transfer, only receiving information. It is assumed that custody was maintained.

3 Assessment Summary and Data Usability

In this SDG, no quality control (QC) excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

4 Metals Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding Time
Metals (except Hg and Cr6+) by 6010 / 6020	Water	HNO_3 to pH <2	180 days
	Soil	None	180 days

4.2 Blanks

Acceptance criteria were met.

4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis was performed on the sample in this data set.

4.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

NA: No MS/MSD analysis was performed on the sample in this data set.

4.6 Field Duplicates

NA: No field duplicate samples were submitted in this SDG.

4.7 Additional Notes:

NA: No additional notes to report.

5 General Chemistry Analysis

5.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Total cyanide by 9012B	Water	4°C ± 2°C, NaOH to pH > 12	14 days
Hexavalent chromium by 7196A	Water	4°C ± 2°C	24 hours

5.2 Blanks

Acceptance criteria were met.

5.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

5.4 Laboratory Duplicate Analysis

Acceptance criteria were met. Laboratory duplicate analysis was performed on sample 480-149152-1.

5.5 Matrix Spike (MS) analysis

Acceptance criteria were met. Matrix spike analysis was performed on sample 480-149152-1.

5.6 Field Duplicates

NA: No field duplicate sample was submitted with this SDG.

5.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 218

Former Ciba Geigy Facility
Queensbury, New York

Analysis performed by: TestAmerica, Buffalo, New York

Sample Delivery Group (SDG): 480-150487
Analysis: General Chemistry
Review Level: Tier II

Report Date:
March 24, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Method 7196A for hexavalent chromium. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Hexavalent chromium analysis
480-150487	480-150487-1	EB_20190319	Water	3/19/2019	X
480-150487	480-150487-2	MW-31_20190319	Water	3/19/2019	X
480-150487	480-150487-3	AW-B17_20190319	Water	3/19/2019	X
480-150487	480-150487-4	MW-OB25_20190319	Water	3/19/2019	X
480-150487	480-150487-5	AW-B4_20190319	Water	3/19/2019	X
480-150487	480-150487-6	AW-A11_20190319	Water	3/19/2019	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed, with one exception: there is a gap between the relinquishing and receiving times associated with the second custody transfer. It is assumed that custody was maintained; relinquishing and receiving parties for that transfer were both associated with TestAmerica.

3 Assessment Summary and Data Usability

In this SDG, no quality control (QC) excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

4 General Chemistry Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Hexavalent chromium by 7196A	Water	4°C ± 2°C	24 hours

4.2 Blanks

Acceptance criteria were met. No detections were reported in the method blank or in the equipment blank.

4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: Laboratory duplicate analysis was performed on the equipment blank, which does not provide information about the field sample matrix.

4.5 Matrix Spike (MS) analysis

Acceptance criteria were met. Matrix spike analysis was performed on sample 480-150487-2.

4.6 Field Duplicates

NA: No field duplicate sample was included in this SDG.

4.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 219

Former Ciba Geigy Facility
Queensbury, New York

Analysis performed by: TestAmerica, Buffalo, New York

Sample Delivery Group (SDG): 480-150655
Analysis: General Chemistry
Review Level: Tier II

EHS Support

Report Date:
March 31, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Method 7196A for hexavalent chromium. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Hexavalent chromium analysis
480-150655	480-150655-1	SW-01_20190321	Water	3/21/2019	X
480-150655	480-150655-2	SW-02_20190321	Water	3/21/2019	X
480-150655	480-150655-3	SW-03_20190321	Water	3/21/2019	X
480-150655	480-150655-4	SW-04_20190321	Water	3/21/2019	X
480-150655	480-150655-5	MW-OB14_20190321	Water	3/21/2019	X
480-150655	480-150655-6	EB_20190321	Water	3/21/2019	X
480-150655	480-150655-7	DUP_20190321	Water	3/21/2019	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed, with one exception: there is a gap between the relinquishing and receiving times associated with the second custody transfer. It is assumed that custody was maintained.

3 Assessment Summary and Data Usability

In this SDG, no quality control (QC) excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

4 General Chemistry Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Hexavalent chromium by 7196A	Water	4°C ± 2°C	24 hours

4.2 Blanks

Acceptance criteria were met. No detections were reported in the method blank or in the equipment blank.

4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis was reported in association with this data set.

4.5 Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis

Acceptance criteria were met. MS/MSD analysis was performed on sample 480-150655-3.

4.6 Field Duplicates

Acceptance criteria were met. Results for the parent and duplicate sample were non-detect.

4.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 227

Former Ciba Geigy Facility
Queensbury, New York

Analysis performed by: TestAmerica, Buffalo, New York and Savannah, Georgia

Sample Delivery Group (SDG): 480-150502
Analyses: Metals, General Chemistry
Review Level: Tier II

EHS Support

Report Date:
April 16, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Methods 6020A for metals and 9012B for cyanide. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Analysis	
					Metals	Gen Chem
480-150502	480-150502-1	EB_20190319	Water	3/19/2019	X	X
480-150502	480-150502-2	MW-31_20190319	Water	3/19/2019	X	X
480-150502	480-150502-3	AW-B17_20190319	Water	3/19/2019	X	X
480-150502	480-150502-4	MW-OB25_20190319	Water	3/19/2019	X	X
480-150502	480-150502-5	AW-B4_20190319	Water	3/19/2019	X	X
480-150502	480-150502-6	AW-A11_20190319	Water	3/19/2019	X	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U — The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ — The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J — The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R — The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed, with one note: there is a gap between the relinquishing and receiving times associated with the second custody transfer. It is assumed that custody was maintained.

3 Assessment Summary and Data Usability

In this SDG, no quality control (QC) excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

4 Metals Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the table below.

Method	Matrix	Preservation	Holding Time
Metals (except Hg and Cr6+) by 6010 / 6020	Water	HNO_3 to pH <2	180 days
	Soil	None	180 days

4.2 Blanks

One equipment blank was submitted with this sample delivery group. Chromium was detected in the equipment blank (EB) as shown in the table below. No detections were reported for the laboratory method blank.

Analyte	Blank detection	Blank result (category)	Associated samples	Sample result	Qualification
Chromium	0.46 J µg/L (EB_20190319)	≥ MDL but ≤ RL	480-150502-2 480-150502-3 480-150502-4 480-150502-5 480-150502-6	> RL and > 5X the blank result	No qualification needed

MDL Method detection limit
RL Reporting limit

4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis was performed on the sample in this data set.

4.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

NA: MS/MSD was performed on the equipment blank. Equipment blanks do not provide information about field sample matrix effects and are not evaluated.

4.6 Field Duplicates

NA: No field duplicate samples were submitted in this SDG.

4.7 Additional Notes:

NA: No additional notes to report.

5 General Chemistry Analysis

5.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Total cyanide by 9012B	Water	4°C ± 2°C, NaOH to pH > 12	14 days

5.2 Blanks

Acceptance criteria were met. No detections were reported in the method blank or in the equipment blank.

5.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

5.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis was performed on the sample in this data set.

5.5 Matrix Spike (MS) analysis

NA: No MS analysis performed on a sample in this data set was reported.

5.6 Field Duplicates

NA: No field duplicate sample was included in this SDG.

5.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 230

Former Ciba Geigy Facility
Queensbury, New York

Analysis performed by: TestAmerica, Buffalo, New York

Sample Delivery Group (SDG): 480-150574
Analysis: General Chemistry
Review Level: Tier II

EHS Support

Report Date:
April 24, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Method 7196A for hexavalent chromium. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Hexavalent chromium analysis
480-150574	480-150574-1	MW-OB30_20190320	Water	3/20/2019	X
480-150574	480-150574-2	MW-OB31_20190320	Water	3/20/2019	X
480-150574	480-150574-3	MW-OB32_20190320	Water	3/20/2019	X
480-150574	480-150574-4	MW-OB33_20190320	Water	3/20/2019	X
480-150574	480-150574-5	MW-OB34_20190320	Water	3/20/2019	X
480-150574	480-150574-6	AW-C11_20190320	Water	3/20/2019	X
480-150574	480-150574-7	AW-A14_20190320	Water	3/20/2019	X
480-150574	480-150574-8	SUMP-B_20190320	Water	3/20/2019	X
480-150574	480-150574-9	SUMP-A_20190320	Water	3/20/2019	X
480-150574	480-150574-10	MW-OB26_20190320	Water	3/20/2019	X
480-150574	480-150574-11	EB_20190320	Water	3/20/2019	X
480-150574	480-150574-12	EW-B5_20190320	Water	3/20/2019	X
480-150574	480-150574-13	DUP_20190320	Water	3/20/2019	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed, except that there is a gap between the relinquishing and receiving times associated with the second custody transfer. It is assumed that custody was maintained.

3 Assessment Summary and Data Usability

In this SDG, no QC (Quality Control) excursions encountered led to rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC variances and data qualification.

4 General Chemistry Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Hexavalent chromium by 7196A	Water	4°C ± 2°C	24 hours

4.2 Blanks

Acceptance criteria were met. No detections were reported in the method blank or in the equipment blank.

4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

Acceptance criteria were met. Laboratory duplicate analysis was performed on sample 480-150574-7. Another lab duplicate analysis was performed but the sample used was the equipment blank. Results of such analyses are not evaluated because equipment blanks do not provide information about field sample matrix.

4.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

Acceptance criteria were met. MS/MSD analysis was performed on sample 480-150574-6. Matrix spike analysis was performed on sample 480-150574-7. Another MS analysis was performed but the sample used was the equipment blank. Results of such analyses are not evaluated because equipment blanks do not provide information about field sample matrix.

4.6 Field Duplicates

One parent sample – field duplicate pair was submitted in this sample delivery group. Field duplicate analyses associated with relative percent difference (RPD) values outside acceptance limits are listed in the table below.

Samples	Analyte	Parent sample result	Duplicate sample result	RPD
EW-B5_20190320/ DUP_20190320	Hexavalent chromium	6.6 J ug/L	150 ug/L	Not compliant

NC Not compliant - this refers to cases in which the sample and/or duplicate concentration is less than 5X the RL and the difference between the two is outside acceptance limits.

As a consequence of this QC excursion, parent and duplicate sample results for the listed compounds have been qualified as estimated (J), in accordance with the following table.

Quality control nonconformance	Sample Result	Qualification
Sample and its field duplicate ≥ 5x the RL and -RPD > 30% (aqueous) - or - -RPD > 50% (soil/ sediment)	Detect	J
Sample and/or its field duplicate < 5x the RL and -absolute difference > 2x the RL (aqueous) - or- -absolute difference > 3x the RL (soil/ sediment)	Non-detect	UJ
	Detect	J

4.7 Additional Notes

Samples were analyzed at dilutions when needed.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 231

Former Ciba Geigy Facility
Queensbury, New York

Analysis performed by:
TestAmerica, Buffalo, New York and Savannah, Georgia

Sample Delivery Group (SDG): 480-150575
Analyses: Metals, General Chemistry
Review Level: Tier II

EHS Support

Report Date:
April 23, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Methods 6020A for metals and 9012B for cyanide. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Analysis	
					Metals	Gen Chem
480-150575	480-150575-1	MW-OB30_20190320	Water	3/20/2019	X	X
480-150575	480-150575-2	MW-OB31_20190320	Water	3/20/2019	X	X
480-150575	480-150575-3	MW-OB32_20190320	Water	3/20/2019	X	X
480-150575	480-150575-4	MW-OB33_20190320	Water	3/20/2019	X	X
480-150575	480-150575-5	MW-OB34_20190320	Water	3/20/2019	X	X
480-150575	480-150575-6	AW-C11_20190320	Water	3/20/2019	X	X
480-150575	480-150575-7	AW-A14_20190320	Water	3/20/2019	X	X
480-150575	480-150575-8	SUMP-B_20190320	Water	3/20/2019	X	X
480-150575	480-150575-9	SUMP-A_20190320	Water	3/20/2019	X	X
480-150575	480-150575-10	MW-OB26_20190320	Water	3/20/2019	X	X
480-150575	480-150575-11	EB_20190320	Water	3/20/2019	X	X
480-150575	480-150575-12	EW-B5_20190320	Water	3/20/2019	X	X
480-150575	480-150575-13	DUP_20190320	Water	3/20/2019	X	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed, with one note: there is a gap between the relinquishing and receiving times associated with the second custody transfer. It is assumed that custody was maintained.

3 Assessment Summary and Data Usability

In this SDG, no QC (Quality Control) excursions encountered led to rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC variances and data qualification.

4 Metals Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the table below.

Method	Matrix	Preservation	Holding Time
Metals (except Hg and Cr6+) by 6010 / 6020	Water	HNO_3 to pH <2	180 days
	Soil	None	180 days

4.2 Blanks

One equipment blank was submitted with this sample delivery group. Chromium was detected in the equipment blank (EB) as shown in the table below. No detections were reported for the laboratory method blank.

Analyte	Blank detection	Blank result (category)	Associated samples	Sample result	Qualification
Chromium	0.52 J µg/L (EB_20190320)	≥ MDL but ≤ RL	480-150575-1 480-150575-2 480-150575-3 480-150575-4 480-150575-5 480-150575-6 480-150575-7 480-150575-8 480-150575-9 480-150575-10 480-150575-12 480-150575-13	> RL and > 5X the blank result	No qualification needed

MDL Method detection limit
RL Reporting limit

4.3 Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis was performed on the sample in this data set.

4.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

NA: MS/MSD analysis was performed on sample 480-150575-6, however results cannot be evaluated because the analyte's concentration in the unspiked sample is at least 4x the spike amount.

4.6 Field Duplicates

Acceptance criteria were met. One field duplicate sample was included in this data set. No relationships between parent sample results and duplicate sample results exceeded the limits shown in the table below.

Quality control nonconformance	Sample Result	Sample Result Qualification
Sample and its field duplicate ≥ 5x the RL and -RPD > 30% (aqueous) - or - -RPD > 50% (soil/ sediment)	Detect	J
Sample and/or its field duplicate < 5x the RL and -absolute difference > 2x the RL (aqueous) - or- -absolute difference > 3x the RL (soil/ sediment)	Non-detect	UJ
	Detect	J

4.7 Additional Notes:

NA: No additional notes to report.

5 General Chemistry Analysis

5.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Total cyanide by 9012B	Water	4°C ± 2°C, NaOH to pH > 12	14 days

5.2 Blanks

Acceptance criteria were met. No detections were reported in the method blank or in the equipment blank.

5.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

5.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis was performed on the sample in this data set.

5.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) analysis

Matrix spike analyses associated with recoveries and/or RPD values outside control limits are presented in the table below.

Sample ID	Analyte	Recovery		MS/MSD RPD
		MS	MSD	
480-150575-6	Total cyanide	64%	54%	Acceptable

As a consequence of this excursion, qualifiers were applied to cyanide results for all field samples in this data set in accordance with the table below.

Spike recovery	Sample result	Qualification
MS/MSD percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD percent recovery <30%	Non-detect	UJ if PDS %R ≥ 75%
		R if PDS not performed or PDS %R < 75%
	Detect	J
MS/MSD percent recovery >125%	Non-detect	No Action
	Detect	J
MS/MSD RPD > UL	Non-detect	UJ
	Detect	J

5.6 Field Duplicates

Acceptance criteria were met. One field duplicate sample was included in this data set. No relationships between parent sample results and duplicate sample results exceeded the limits shown in the table below.

Quality control nonconformance	Sample Result	Sample Result Qualification
Sample and its field duplicate ≥ 5x the RL and -RPD > 30% (aqueous) - or - -RPD > 50% (soil/ sediment)	Detect	J
Sample and/or its field duplicate < 5x the RL and -absolute difference > 2x the RL (aqueous) - or- -absolute difference > 3x the RL (soil/ sediment)	Non-detect	UJ
	Detect	J

5.7 Additional Notes

Several samples were analyzed at dilutions.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 232

Former Ciba Geigy Facility
Queensbury, New York

Analysis performed by: TestAmerica, Buffalo, New York and Savannah, Georgia

Sample Delivery Group (SDG): 480-150661
Analyses: Metals, General Chemistry
Review Level: Tier II

Report Date:
April 23, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Methods 6020A for metals and 9012B for cyanide, and by Standard Methods SM2340C for harness and SM2540C for total dissolved solids. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Analysis	
					Metals	Gen Chem
480-150661	480-150661-1	SW-01_20190321	Water	3/21/2019	X	X
480-150661	480-150661-2	SW-02_20190321	Water	3/21/2019	X	X
480-150661	480-150661-3	SW-03_20190321	Water	3/21/2019	X	X
480-150661	480-150661-4	SW-04_20190321	Water	3/21/2019	X	X
480-150661	480-150661-5	MW-OB14_20190321	Water	3/21/2019	X	X
480-150661	480-150661-6	EB_20190321	Water	3/21/2019	X	X
480-150661	480-150661-7	DUP_20190321	Water	3/21/2019	X	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed except that there is a gap between the relinquishing and receiving times associated with the second custody transfer – and no receiving time is recorded for the first custody transfer. It is assumed that custody was maintained.

3 Assessment Summary and Data Usability

In this SDG, no QC (Quality Control) excursions encountered led to rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC variances and data qualification.

4 Metals Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the table below.

Method	Matrix	Preservation	Holding Time
Metals (except Hg and Cr6+) by 6010 / 6020	Water	HNO_3 to pH <2	180 days
	Soil	None	180 days

4.2 Blanks

Sample results associated with blank contamination are shown in the table below. One equipment blank was submitted with this sample delivery group. Chromium was detected in the equipment blank (EB) and in the method blank (MB) as shown in the table. Blanks are not qualified due to detections in other blanks. For example, the EB is not qualified because of the detection in the method blank.

Analyte	Blank detection	Blank result (category)	Associated samples	Sample result	Qualification
Chromium	0.447 J ug/L (MB 480-464321/1-A) and 0.47 J µg/L (EB_20190321)	≥ MDL but ≤ RL	480-150661-5	> RL and > 5X the blank result	No qualification needed
			480-150661-1 480-150661-2 480-150661-3 480-150661-4 480-150661-7	≥ MDL but ≤ RL	Report U at the RL

MDL Method detection limit
RL Reporting limit

4.3 Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis was performed on the sample in this data set.

4.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

Acceptance criteria were met. MS/MSD analysis was performed on sample 480-150661-3.

4.6 Field Duplicates

Acceptance criteria were met. One field duplicate sample was included in this data set. No relationships between parent sample results and duplicate sample results exceeded the limits shown in the table below.

Quality control nonconformance	Sample Result	Sample Result Qualification
Sample and its field duplicate ≥ 5x the RL and -RPD > 30% (aqueous) - or - -RPD > 50% (soil/ sediment)	Detect	J
Sample and/or its field duplicate < 5x the RL and -absolute difference > 2x the RL (aqueous) - or- -absolute difference > 3x the RL (soil/ sediment)	Non-detect	UJ
	Detect	J

4.7 Additional Notes:

NA: No additional notes to report.

5 General Chemistry Analysis

5.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Total cyanide by 9012B	Water	4°C ± 2°C, NaOH to pH > 12	14 days
Hardness by SM2340C	Water	HNO3 to pH < 2	180 days
Total dissolved solids (TDS) by SM 2540C	Water	≤6 °C	7 days

5.2 Blanks

Sample results associated with blank contamination are shown in the table below.

Analyte	Blank detection	Blank result (category)	Associated samples	Sample result	Qualification
Total dissolved solids	8 J mg/L (EB_20190321)	≥ MDL but ≤ RL	480-150661-1 480-150661-2 480-150661-3 480-150661-4 480-150661-6 480-150661-7	> RL and > 5X the blank result	No qualification needed

RL Reporting limit
MDL Method detection limit

5.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

5.4 Laboratory Duplicate Analysis

Acceptance criteria were met. Laboratory duplicate analysis was performed on sample 480-150661-5 for cyanide.

5.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) analysis

Acceptance criteria were met. MS/MSD analysis was performed on sample 480-150661-3 for hardness.

5.6 Field Duplicates

Acceptance criteria were met. One field duplicate sample was included in this data set. No relationships between parent sample results and duplicate sample results exceeded the limits shown in the table below.

<table>
<tr><th>Quality control nonconformance</th><th>Sample Result</th><th>Sample Result Qualification</th></tr>
<tr><td>Sample and its field duplicate ≥ 5x the RL and
-RPD > 30% (aqueous) - or -
-RPD > 50% (soil/ sediment)</td><td>Detect</td><td>J</td></tr>
<tr><td rowspan="2">Sample and/or its field duplicate < 5x the RL and
-absolute difference > 2x the RL (aqueous) - or-
-absolute difference > 3x the RL (soil/ sediment)</td><td>Non-detect</td><td>UJ</td></tr>
<tr><td>Detect</td><td>J</td></tr>
</table>

5.7 Additional Notes

One sample was analyzed at a dilution for cyanide.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 233

Former Ciba Geigy Facility
Queensbury, New York

Analysis performed by: ALS Environmental, Holland, Michigan

Sample Delivery Group (SDG): 19031301
Analysis: General Chemistry
Review Level: Tier II

EHS Support

Report Date:
April 24, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) Method by OIA 1677 for free cyanide. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	**Lab Sample ID**	**Field Sample ID**	**Sample Matrix**	**Sample Collection Date**	**Free cyanide analysis**
19031301	19031301-01	SW-01_20190321	Water	3/21/2019	X
19031301	19031301-02	SW-02_20190321	Water	3/21/2019	X
19031301	19031301-03	SW-03_20190321	Water	3/21/2019	X
19031301	19031301-04	SW-04_20190321	Water	3/21/2019	X
19031301	19031301-05	EB_2019021	Water	3/21/2019	X
19031301	19031301-06	DUP_20190321	Water	3/21/2019	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed.

3 Assessment Summary and Data Usability

In this SDG, no quality control (QC) excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

4 General Chemistry Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Free cyanide by OIA 1677	Water	NaOH to pH > 12	14 days

4.2 Blanks

Acceptance criteria were met. No detections were reported in the method blank or in the equipment blank.

4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis performed on a sample in this data set was reported.

4.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) analysis

Acceptance criteria were met. MS/MSD analysis was performed on sample 19031301-03.

4.6 Field Duplicates

Acceptance criteria were met. One parent sample – field duplicate pair was included in this sample delivery group. Results for both parent and duplicate were non-detect.

4.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 237

Former Ciba Geigy Facility
Queensbury, New York

Analysis performed by: TestAmerica, Buffalo, New York

Sample Delivery Group (SDG): 480-155152-1
Analysis: General Chemistry
Review Level: Tier II

EHS Support

Report Date:
August 11, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) Method 7196A for hexavalent chromium. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Hexavalent chromium analysis
480-155152	480-155152-1	EB_20190619	Water	6/19/2019	X
480-155152	480-155152-2	MW-OB25_20190619	Water	6/19/2019	X
480-155152	480-155152-3	MW-OB26_20190619	Water	6/19/2019	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. On the chain of custody, there is a gap between the relinquishing and receiving times of the second custody transfer, but both parties are affiliated with TestAmerica. It is assumed that custody was maintained. Other than that note, the chain of custody was properly completed.

3 Assessment Summary and Data Usability

In this SDG, no QC (Quality Control) excursions encountered led to rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC variances and data qualification.

4 General Chemistry Analysis

4.1 Preservation and holding times

Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Hexavalent chromium by 7196A	Water	4°C ± 2°C	24 hours

Analyses performed outside of specified holding times are listed in the following table.

Sample	Analysis	Method holding time	Observed holding time
All samples in this SDG	8260	24 hours	Between 26 and 28 hours

The samples listed in the table above have been qualified as per the table below.

Quality Control Nonconformance	Qualification	
	Detected analytes	Non-detect analytes
Technical Holding Time exceeded; analysis performed in less than, or equal to, 2x holding time	J	UJ
Technical Holding Time exceeded; analysis performed in more than 2x holding time	J	R

4.2 Blanks

Acceptance criteria were met. No detections were reported in the method blank or in the equipment blank.

4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

Laboratory duplicate analysis was performed but the sample used was the equipment blank. Results of such analyses are not evaluated because equipment blanks do not provide information about field sample matrix.

4.5 Matrix Spike (MS) Analysis

MS analysis was performed on sample in this data set, but the results could not be evaluated because the concentration of hexavalent chromium in the unspiked parent sample is more than 4x the spike amount.

4.6 Field Duplicates

No field duplicate sample as included in this sample delivery group.

4.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 240

Former Ciba Geigy Facility
Queensbury, New York

Analysis performed by: TestAmerica, Buffalo, New York & Chicago, Illinois

Sample Delivery Group (SDG): 480-155087
Analysis: General Chemistry
Review Level: Tier II

EHS Support

Report Date:
July 18, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) Method 218.6 and by Standard Method SM3500 Cr-D for hexavalent chromium. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Hexavalent chromium analysis
480-155087	480-155087-1	MW-OB14_20190618	Water	6/18/2019	X
480-155087	480-155087-2	EW-B5_20190618	Water	6/18/2019	X
480-155087	480-155087-3	AW-C11_20190618	Water	6/18/2019	X
480-155087	480-155087-4	EB_20190618	Water	6/18/2019	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed, but there is a gap between the relinquishing and receiving signatures for the second custody transfer that appears to correspond with sample shipment from the TestAmerica Albany service center to the TestAmerica Buffalo lab. It is assumed that custody was maintained.

3 Assessment Summary and Data Usability

In this SDG, no QC (Quality Control) excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

4 General Chemistry Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Hexavalent chromium by 218.6	Water	Field filtration, ammonium sulfate buffer, 4°C ± 2°C	28 days*
Hexavalent chromium by SM3500 Cr-D	Water	4°C ± 2°C	24 hours

*Footnote 20 from Code of Federal Regulations Title 40 Part 136, Subchapter D, Table II: "To achieve the 28-day holding time, use the ammonium sulfate buffer solution specified in EPA Method 218.6. The allowance in this footnote supersedes preservation and holding time requirements in the approved hexavalent chromium methods, unless this supersession would compromise the measurement, in which case requirements in the method must be followed."

4.2 Blanks

Acceptance criteria were met. No detections were reported in the method blanks or in the equipment blank.

4.3 Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis is reported for this data set.

4.5 Matrix Spike (MS) Analysis

Acceptance criteria were met. MS analysis was performed on sample 480-155087-1 by Method SM3500 Cr-D. The recovery was 77%, which is outside the laboratory's acceptance limits, but within the 75 – 125% acceptance limits applied for this validation. The lab flag applied to the hexavalent chromium result for sample 480-155087-1 has consequently been removed.

4.6 Field Duplicates

NA: No field duplicate sample was included in this sample delivery group.

4.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 241

Former Ciba Geigy Facility
Queensbury, New York

Analyses performed by: TestAmerica, Buffalo, New York and Savannah, Georgia

Sample Delivery Group (SDG): 480-155088
Analyses: Metals, General Chemistry
Review Level: Tier II

EHS Support

Report Date: August 4, 2019

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5.7 Additional Notes 7

Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Methods 6020A for metals, 7196A for hexavalent chromium, and 9012B for cyanide. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Analysis		
				Metals	CN	Cr^{6+}
480-155088-1	MW-OB14_20190618	Water	6/18/2019	X	X	X
480-155088-2	AW-B4_20190518	Water	6/18/2019	X	X	X
480-155088-3	EW-B5_20190618	Water	6/18/2019	X	X	X
480-155088-4	SUMP-A_20190618	Water	6/18/2019	X	X	X
480-155088-5	SUMP-B_20190618	Water	6/18/2019	X	X	X
480-155088-6	AW-A14_20190618	Water	6/18/2019	X	X	X
480-155088-7	DUP_20190618	Water	6/18/2019	X	X	X
480-155088-8	AW-C11_20190618	Water	6/18/2019	X	X	X
480-155088-9	EB_20190618	Water	6/18/2019	X	X	X

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed except the last receiving party recorded only initials, not a full name nor signature. It is assumed that custody was maintained.

3 Assessment Summary and Data Usability

In this SDG, no QC (Quality Control) excursions encountered led to rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC variances and data qualification.

4 Metals Analysis

4.1 Preservation and holding times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding Time
Metals (except Hg and Cr6+) by 6010 / 6020	Water	HNO_3 to pH <2	180 days
	Soil	None	180 days

4.2 Blanks

Sample results associated with blank contamination are shown in the table below. Acceptance criteria were met.

Analyte	Blank detection	Blank result (category)	Associated samples	Sample result	Qualification
Dissolved chromium	2.03 ug/L (MB) and 0.84 J ug/L (EB)	> RL	480-155088-3 480-155088-7 480-155088-8	> RL and > 5X the blank result	No qualification needed
Dissolved chromium	0.84 J ug/L (EB)	< RL	480-155088-1 480-155088-2 480-155088-4 480-155088-5	> RL and > 5X the blank result	No qualification needed
			480-155088-6	> RL but < 5X the blank result	Non-detect at the reported result

EB Equipment blank
MB Method blank
RL Reporting limit

4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis performed on a sample in this data set was reported.

4.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

NA: MS/MSD analysis was perfumed on a sample in this data set. However, results cannot be evaluated because the concentration of chromium in the unspiked parent sample was at least 4x the spike amount.

4.6 Field Duplicates

Acceptance criteria, shown in the table below, were met. One field duplicate sample was included in this sample delivery group.

Quality control nonconformance	Sample Result	Sample Result Qualification
Sample and its field duplicate ≥ 5x the RL and -RPD > 30% (aqueous) - or - -RPD > 50% (soil/ sediment)	Detect	J
Sample and/or its field duplicate < 5x the RL and -absolute difference > 2x the RL (aqueous) - or- -absolute difference > 3x the RL (soil/ sediment)	Non-detect	UJ
	Detect	J

4.7 Additional Notes:

From the filtered sample aliquots, total chromium and hexavalent chromium were analyzed and reported. Relationships between hexavalent chromium results and total chromium results were acceptable.

5 General Chemistry Analysis

5.1 Preservation and holding times

Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Total cyanide by 9012B	Water	4°C ± 2°C, NaOH to pH > 12	14 days
Hexavalent chromium by 7196	Water	≤6 °C	24 hours

Analyses performed outside of specified holding times are listed in the following table. All other holding time criteria were met.

Samples	Analysis	Method holding time	Observed holding time
480-155088-3	Cyanide	14 days	15 days

The samples listed in the table above have been qualified as follows:

QC excursion	Qualification	
	Detected analytes	Non-detect analytes
Technical Holding Time exceeded; analysis performed in less than 2x holding time	J	UJ
Technical Holding Time exceeded; analysis performed in more than 2x holding time	J	R

5.2 Blanks

Acceptance criteria were met. No detections of cyanide or Cr^{6+} were reported in the method blanks or the equipment blank associated with this data set.

5.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

5.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis performed on a sample in this data set was reported.

5.5 Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis

Acceptance criteria were met. MS/MSD analysis was performed on sample 480-155088-8 for cyanide and for Cr6+. MS analysis was performed on sample 480-155088-1 for Cr6+. The recoveries and the relative percent differences (RPD) between MS and MSD were acceptable.

One cyanide recovery was 82%, which is outside the laboratory's acceptance limits, but within the 75 – 125% acceptance limits applied for this validation. The lab flag applied to the cyanide result for sample 480-155088-8 has consequently been removed.

5.6 Field Duplicates

Acceptance criteria, shown in the table below, were met. One field duplicate sample was submitted in this sample delivery group.

<table>
<tr><th>Quality Control Nonconformance</th><th>Sample Result</th><th>Sample Result Qualification</th></tr>
<tr><td>Sample and its field duplicate ≥ 5x the RL and
-RPD > 30% (aqueous) - or -
-RPD > 50% (soil/ sediment)</td><td>Detect</td><td>J</td></tr>
<tr><td rowspan="2">Sample and/or its field duplicate < 5x the RL and
-absolute difference > 2x the RL (aqueous) - or-
-absolute difference > 3x the RL (soil/ sediment)</td><td>Non-detect</td><td>UJ</td></tr>
<tr><td>Detect</td><td>J</td></tr>
</table>

5.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 243

Former Ciba Geigy Facility
Queensbury, New York

Analyses performed by: TestAmerica, Buffalo, New York and Savannah, Georgia

Sample Delivery Group (SDG): 480-155178-2
Analyses: Metals, General Chemistry
Review Level: Tier II

Report Date:
July 25, 2019

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Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Methods 6020A for metals and 9012B for cyanide. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Analysis		
				Metals	CN	Cr^{6+}
480-155178-10	EB_20190619	Water	6/19/2019	X	X	
480-155178-11	MW-OB25_20190619	Water	6/19/2019	X	X	
480-155178-12	MW-OB26_20190619	Water	6/19/2019	X	X	

1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

1.1 Validation Qualifiers

U The analyte was included in the analysis but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

UJ The analyte was included in the analysis but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed except that there is no receiving information recorded for the second custody transfer. It is assumed that custody was maintained.

3 Assessment Summary and Data Usability

In this SDG, no QC (Quality Control) excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

4 Metals Analysis

4.1 Preservation and Holding Times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding Time
Metals (except Hg and Cr6+) by 6010 / 6020	Water	HNO_3 to pH <2	180 days
	Soil	None	180 days

4.2 Blanks

Acceptance criteria were met. Results for the method and the equipment blank were non-detect.

4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

4.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis performed on a sample in this data set was reported.

4.5 Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

NA: No MS/MSD analysis performed on a sample in this data set was reported.

4.6 Field Duplicates

NA: No field duplicate sample was included in this sample delivery group.

4.7 Additional Notes:

NA: No additional notes to report.

5 General Chemistry Analysis

5.1 Preservation and Holding Times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time
Total cyanide by 9012B	Water	4°C ± 2°C, NaOH to pH > 12	14 days

5.2 Blanks

Acceptance criteria were met. Results for the method and the equipment blank were non-detect.

5.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

5.4 Laboratory Duplicate Analysis

NA: No laboratory duplicate analysis performed on a sample in this data set was reported.

5.5 Matrix Spike (MS) Analysis

NA: No MS/MSD analysis performed on a sample in this data set was reported.

5.6 Field Duplicates

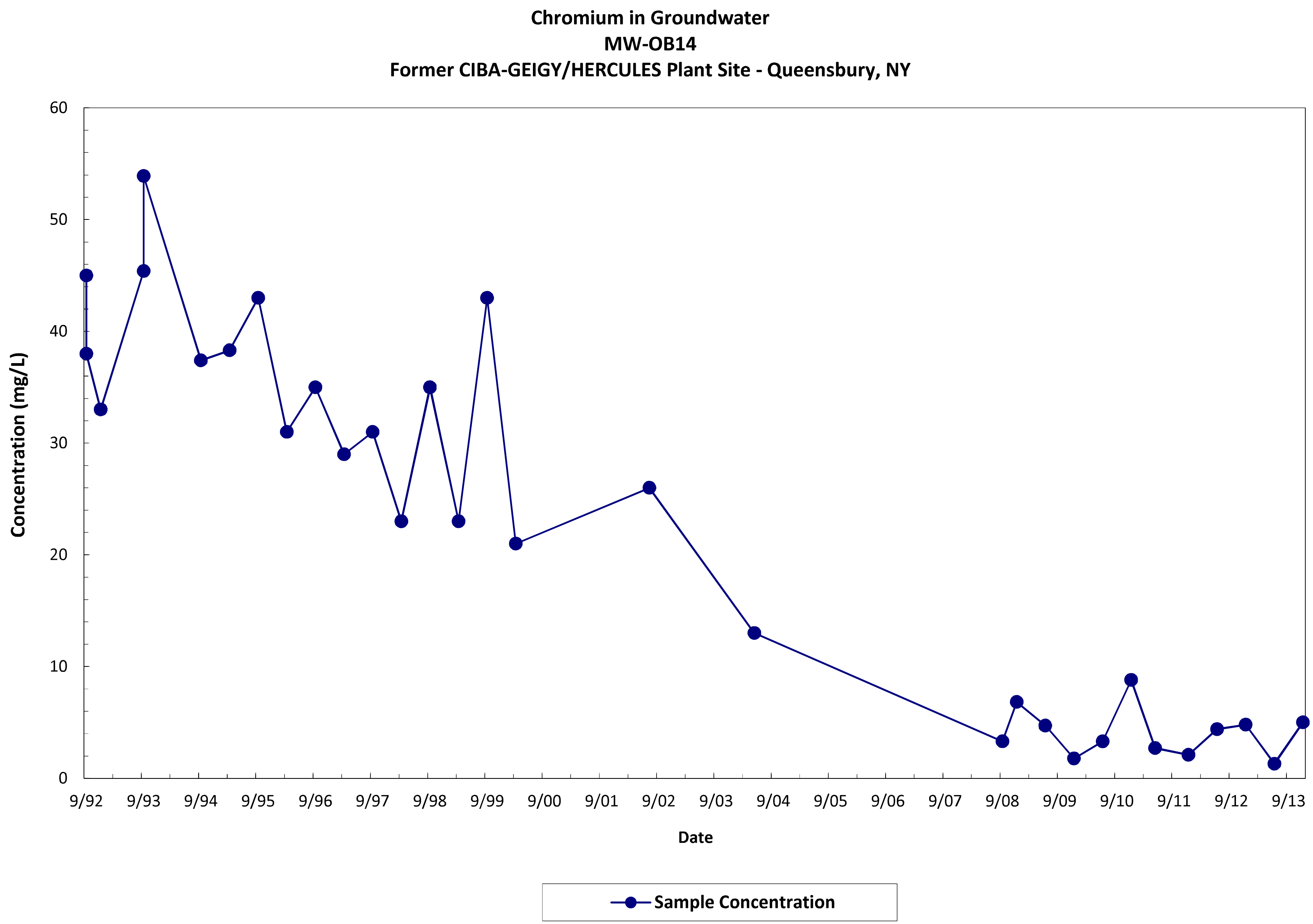
NA: No field duplicate sample was submitted in this sample delivery group.

5.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

Appendix D Historical Trends – MW-OB14 and AW-C11 (Antea, 2014)



Chromium in Groundwater
MW-OB14
Former CIBA-GEIGY/HERCULES Plant Site - Queensbury, NY
Concentration (mg/L)
60
50
40
30
20
10
0
9/92
9/93
9/94
9/95
9/96
9/97
9/98
9/99
9/00
9/01
9/02
9/03
9/04
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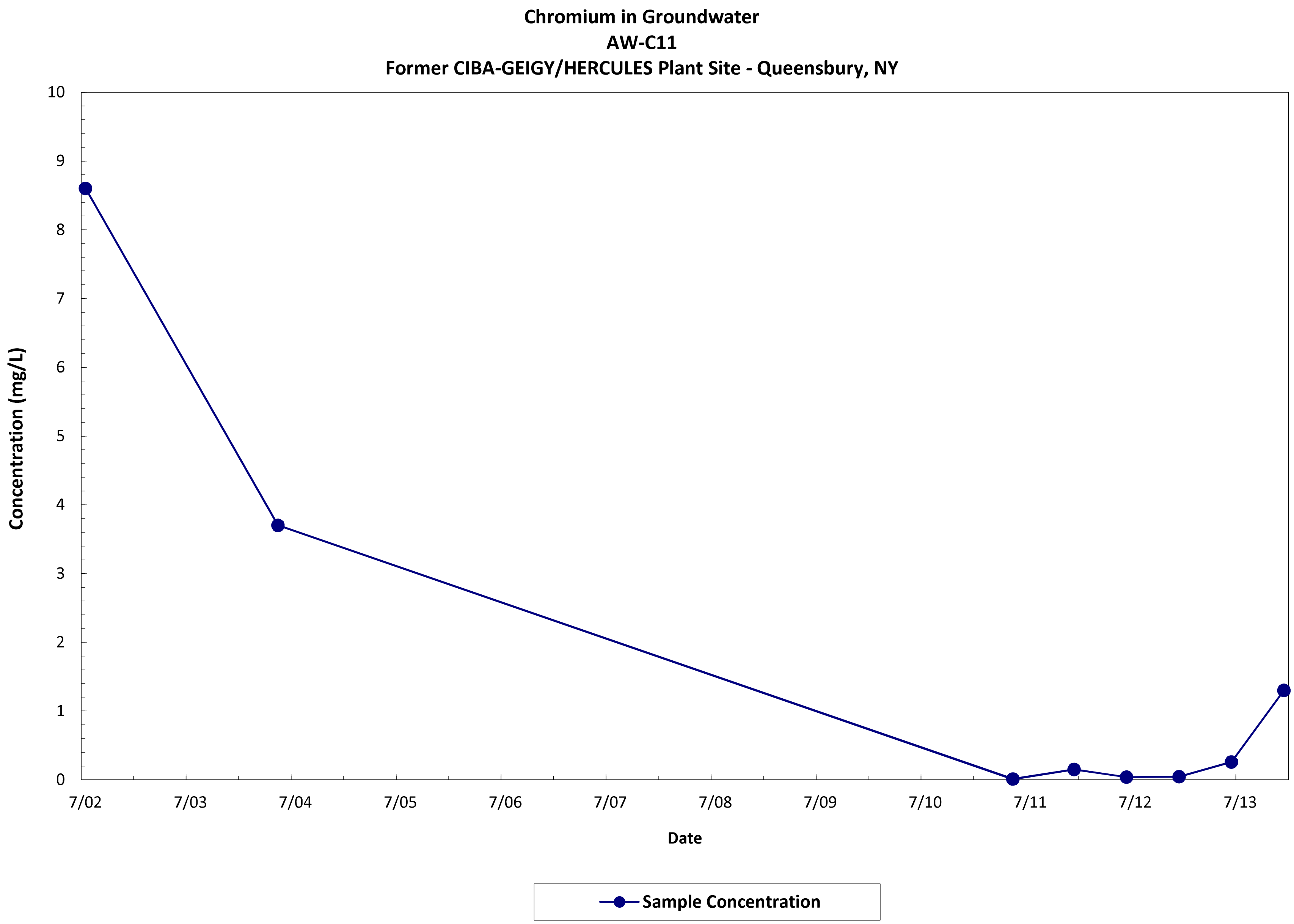
9/12
9/13
Date
Sample Concentration



Chromium in Groundwater
AW-C11
Former CIBA-GEIGY/HERCULES Plant Site - Queensbury, NY
Concentration (mg/L)
10
9
8
7
6
5
4
3
2
1
0
7/02
7/03
7/04
7/05
7/06
7/07
7/08
7/09
7/10
7/11
7/12
7/13
Date
Sample Concentration