November 29, 2017

New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau A
Brian Jankauskas, P.E.
625 Broadway
12th Floor
Albany, NY 12233-7015

RE: 2017 Groundwater and Surface Water Monitoring Report for the Pretreatment Plant at the Former Ciba-Geigy Facility EPA ID NYD002069748 / NYSDEC Site No.: 557011

Dear Mr. Jankauskas,

On behalf of Hercules Incorporated (an affiliate of Ashland) and Ciba-Geigy Corporation (CIBA) (previously acquired by BASF Corporation), EHS Support LLC (EHS Support) is submitting this *Groundwater and Surface Water Monitoring Report for the Pretreatment Plant* for the Pretreatment Plant (PTP) area at the former CIBA pigments manufacturing facility located at 89 Lower Warren Street in Queensbury, NY. Groundwater monitoring was conducted at the PTP (also referred to herein as the Site) in June 2017 pursuant to the Groundwater and Surface Water Monitoring Plan (GSMP), submitted in an Appendix to the November 2016 *Remedy Optimization Plan* for the Main Plant Site, which was approved by the New York State Department of Environmental Conservation (NYSDEC).

In accordance with the GSMP, annual groundwater and surface water monitoring was completed at the PTP in June 2017, using the monitoring locations illustrated on **Figure 1** and the schedule presented in **Table 1**. A summary of the sampling activities, laboratory analysis, and results from the monitoring event is presented below.

Water Level Gauging

On June 19, 2017, water levels were measured at the locations identified in **Table 1**, including eleven monitoring wells and two surface water gauges (SG-11, located in the Glens Falls Feeder Canal (canal) and SG-7, located in a stream adjacent to the canal).

Depth-to-water measurements and groundwater elevation data are provided in **Table 2**. Based on the groundwater elevation data, groundwater generally flows to the east across the Site, with localized southeasterly flow in the southwest corner of the Site. Shallow groundwater on-Site is perched, occurring in the thin saturated zone above the lacustrine clay, and lateral groundwater flow is influenced by the configuration and undulations of the surface of the lacustrine clay beneath the Site. Water accumulated in the wells was limited, with a minimum water column of 0.4 feet observed in well MW-OB20, and a maximum water column of 5.9 feet observed in well MW-OB17. These measurements are consistent with historical gauging data. Groundwater elevations and potentiometric surface lines based on the June 2017 monitoring data are illustrated on **Figure 2**.

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Groundwater and Surface Water Sampling and Analysis

Groundwater and surface water sampling was conducted between June 19 and June 21 of 2017. Six wells (identified in **Table 1)** were purged and sampled using low-flow sampling methods as detailed in the GSMP. Peristaltic pumps were used to purge and sample all wells.

Sampling was initiated on June 19. However, after sampling two wells, field activities were suspended due to lightning. Well MW-OB19 purged dry on June 19, recharged overnight, and was sampled the next day along with two other wells and the two surface water sampling locations. Well MW-OB18 purged dry on June 20, recharged overnight, and was sampled on June 21. Purge flow rates and volumes removed are summarized in **Table 2**. Water quality parameters, including temperature, pH, conductivity, dissolved oxygen, turbidity, and oxidation-reduction potential were monitored during purging and recorded on field purge and sampling log forms. Barometric pressure was also recorded on the field logs. Copies of the field logs are included in **Attachment 1**. Groundwater quality field parameters were recorded on the attached field logs, and final readings prior to sampling are summarized in **Table 3**.

Groundwater samples were collected for laboratory analysis using the same type of pump used for purging at each well. Groundwater quality parameters (same as those collected during purging) were measured just prior to collection of samples for analysis, and samples were pumped directly to sampling containers provided by the laboratory.

Surface water samples were collected as grab samples using clean, laboratory-supplied bottles to collect and transfer the water to laboratory-supplied sample containers. Sample water quality parameters were measured in the field (same parameters as those measured for groundwater) and recorded on sampling logs (**Attachment 1**).

Laboratory analysis was conducted by TestAmerica and ALS Holland laboratories with applicable New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certification for the analyses performed. Clean sample bottles were supplied by the laboratories with preservative as applicable. The sample preservation and analysis included:

- Total cyanide by EPA Method 9012B on unfiltered groundwater and surface water samples collected in plastic sample bottles containing sodium hydroxide preservative.
- Free cyanide by USEPA Method OIA-1677 on groundwater and surface water samples. Sample collection and preservation procedures included:
    - Testing sample for presence of sulfide by pouring sample water into a glass vial with a lead acetate test strip. No change in test strip color indicated no excess sulfide was present, thus the sample was collected in a 40-mL vial with sodium hydroxide preservative and subject to a 14-day hold time.

Upon collection, samples were placed in coolers with ice and transported to the laboratories under chain-of-custody documentation. The analytical results for the samples are summarized in **Table 3**. The laboratory analytical reports (in Level 2 deliverable formats) are included in **Attachment 2**. A summary of the laboratory analytical methods and sample containers is included in **Table 4**.

Quality Control Sampling and Analysis

Quality control (QC) samples collected during the monitoring event included the following:

- One duplicate groundwater sample (from MW-OB21 – DUP1_20170620)
- One duplicate surface water sample (from SG-11 – DUP2_20170620)

- Two matrix spike/matrix spike duplicate (MS/MSD) samples, one for groundwater (from MW-OB21) and one for surface water (from SG-11)
- One equipment/field blank (EB_20170619)
- QC samples were collected using the same methods employed to collect original samples

Analytical results for the duplicate and equipment blank samples are included in **Table 3**. Results for field duplicates samples showed acceptable levels of precision and accuracy, and the blank sample was clean (no cyanide detected). Results for all QC samples, including MS/MSD and other laboratory method QC samples, are provided in the laboratory reports in **Attachment 2**.

Data Quality Review

The analytical reports generated for this sampling event meet NYSDEC requirements for a Category B package. The data was reviewed and a Data Usability Summary Report (DUSR) was prepared by Amy Coats, an EHS Support chemist approved by the NYSDEC for data validation and generation of DUSRs in accordance with DER-10 guidelines.[1]

The laboratory data was evaluated according to the quality assurance / quality control (QA/QC) requirement of NYSDEC Analytical Services Protocols. The matrix spike recovery for total cyanide was above the control limit; therefore, total cyanide results were assigned J-flag qualifiers (i.e., estimated results).

The DUSR report concluded that the analytical data are considered technically defensible and usable in their present form. A copy of the DUSR is included in **Attachment 3**.

Groundwater and Surface Water Analysis Results

Total cyanide was detected in groundwater from each monitoring well sampled **(Table 3)**. Concentrations were below the groundwater GA standard of 200 micrograms per liter (µg/L) except at MW-OB19 (250 J µg/L) and MW-OB23 (1,400 J µg/L). Free cyanide (evaluated since July 2015) was reported in samples from two wells, MW-OB18 (3.2 µg/L) and MW-OB23 (8.4 µg/L); however, the detections may be a result of the laboratory analytical method, since under Site conditions (circum-neutral pH), it is unlikely that free cyanide is present at these concentrations *in-situ* in groundwater. Free cyanide was not detected in surface water (**Table 3**).

Concentrations at the Site boundary and downgradient have consistently been below the GA standard since 2010. The highest concentrations of cyanide in groundwater were historically detected in the central area of the Site at well MW-OB23 and immediately adjacent to the historical wastewater tank at MW-OB19 (**Table 5**). Concentrations declined following cessation of the historical Site operations and have been stable to declining for more than a decade (**Figures 3A-3G**). This distribution pattern has remained consistent over time, with concentrations declining in these locations and with distance from these areas. Mann-Kendall calculations were performed for the central area well MW-OB23. The calculations confirm a stable to probable decreasing trend in cyanide concentrations over the past 20 years (**Table 6**).

It is noted that overburden groundwater on-Site comprises perched water with very low yield. As such, the overburden (perched) groundwater would not support extraction for beneficial use. However, per

DER-10 Guidelines[1], groundwater concentrations were compared to the GA standard, protective for fresh groundwater use as a drinking water source. Groundwater concentrations above the GA standard are limited in extent and concentrations are below the GA standard at the Site boundary. Free cyanide is not detected in surface water. On this basis, residual cyanide in groundwater at the Site does not pose a risk to human health or the environment.

Closing

The data demonstrate that cyanide concentrations in groundwater on-Site are stable to declining. The data also show that the potential for free cyanide in groundwater is low, with circum-neutral conditions making it unlikely for free cyanide to be present, and concentrations ranging from non-detect to less than 10% of the total detected cyanide concentrations. On this basis, it is proposed that free cyanide be removed from the analytical program for future groundwater samples (i.e., groundwater analysis should be limited to total cyanide). Additionally, since the lowest applicable criterion for surface water is based on free cyanide, it is proposed that total cyanide be removed from analytical program for future surface water samples (i.e., surface water analysis should be limited to free cyanide).

The next monitoring event is scheduled for June 2018. This event will provide groundwater and surface water data following the removal of the last remaining above-grade historical wastewater treatment facilities at the Site in late 2017. The need for any further groundwater and surface water monitoring at the Site will be evaluated following the June 2018 event.

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 was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

If you have questions or comments regarding this report or the attached documents, please feel free to contact me at (608) 558-6795 for discussion.

Sincerely,

Cassie R. Reuter
EHS Support LLC
Wisconsin Professional Engineer No. E-39526

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[1] DER-10/Technical Guidance for Site Investigation and Remediation. New York State Department of Environment and Conservation. May 3, 2010.

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Attachment 1 – Purge and Sample Logs
Attachment 2 – Laboratory Analytical Reports
Attachment 3 – Data Usability Summary Report

cc: James Vondracek, Ashland
Stephen Havlik, BASF Corporation
Arlene Lillie, EHS Support

TABLES

Table 1
Sampling Event Analysis Schedule
Pretreatment Plant Annual Groundwater and Surface Water Sampling - June 2017

Annual Gauge Only	Annual Gauge & Sample	Field Parameters[1]	Total Cyanide and Free Cyanide
Overburden Wells			
	MW-OB17	1	1
	MW-OB18	1	1
	MW-OB19	1	1
	MW-OB20	1	1
	MW-OB21	1	1
	MW-OB23	1	1
IG-1	Wells to be gauged only		
IG-2			
P-1			
P-11			
P-12			
Surface Water Samples			
	SG-7	1	1
	SG-11	1	1

Notes:
1 - Field parameters to include pH, temperature, dissolved oxygen, redox potential, electrical conductivity and turbidity

Table 2
Gauging and Purge Data Summary
Pretreatment Plant Annual Groundwater and Surface Water Sampling - June 2017

Well Name	Well Diam. (in)	Screen Interval (ft bgs)	6/19/17 Total Well Depth (ft btoc)	6/19/17 DTW (ft btoc)	TOC Elev (ft amsl)	6/19/17 GW Elevation (ft amsl)	6/19/17 Water Column (ft)	Pump Intake Depth (ft btoc)	Pump Rate (mL/min)	Pre-Purge WL (ft btoc)	Post Purge WL (ft btoc)	Post Purge draw down (ft)	Purged Vol (gal)	Pump Type
OVERBURDEN MONITORING WELLS														
MW-OB17	2	5 - 11	13.54	7.60	289.91	282.31	5.94	10.58	150	7.62	7.66	0.04	1.19	P
MW-OB18	2	4 - 9	12.51	9.45	287.69	278.24	3.06	10.98	100	9.70	11.22	1.5	0.46	P
MW-OB19	2	5 - 10	9.38	8.28	287.82	279.54	1.10	8.85	150	8.28	9.38	1.10	0.75	P
MW-OB20	2	4.5 - 8.5	10.19	9.80	290.36	280.56	0.39	10.18	100	9.78	9.83	0.05	1.06	P
MW-OB21	2	4.5 - 14.5	16.62	13.90	284.03	270.13	2.72	14.54	150	12.44	13.87	1.4	1.67	P
MW-OB23	2	3 - 6.5	8.23	5.86	287.05	281.19	2.37	7.05	100	5.46	5.61	0.15	0.85	P
P-1	1	3 - 8	7.92	5.95	287.73	281.78	1.97	ns	ns	ns	ns	ns	ns	ns
P-11	1	6 - 11	12.77	8.43	290.37	281.94	4.34	ns	ns	ns	ns	ns	ns	ns
P-12	1	3 - 8	9.50	7.03	287.91	280.88	2.47	ns	ns	ns	ns	ns	ns	ns
IG-1	-	-	8.57	6.18	288.79	282.61	2.39	ns	ns	ns	ns	ns	ns	ns
IG-2	-	-	11.16	7.84	289.77	281.93	3.32	ns	ns	ns	ns	ns	ns	ns
SURFACE WATER LOCATIONS														
SG-11	-	n/a		2.30	n/a	n/a		grab						
SG-7	-	n/a		1.25	n/a	n/a		grab						

Notes:
"-" indicates data not available
Diam. - diameter
dry - no water column in well
DTW - depth to water
Elev - elevation
ft amsl - feet above mean sea level
ft bgs - feet below ground surface
ft btoc - feet below top of casing
gal - gallons
GW - groundwater
in - inches
min - minute
mL - milliliters
n/a - not applicable
ns- not sampled
P - peristaltic pump
TOC - top of casing
WL - water level

Table 3
Groundwater and Surface Water Analytical and Field Parameter Results
Pretreatment Plant Annual Groundwater and Surface Water Sampling - June 2017

Well ID	Sample ID	Date	Temp (degC)	pH (s.u.)	Conductivity (mS/cm)	DO (mg/l)	Turbidity (NTU)	ORP (mV)	Cyanide (total) (µg/l)		Cyanide (Free) (µg/l)	
Groundwater Quality Standard (GA)[1]									200		n/a	
MW-OB17	MW-OB17_20150723	07/23/15	18.36	6.97	0.49	3.18	12.7	111	182		2	UJ
MW-OB17	MW-OB17_20160725	07/25/16	22.24	6.46	0.379	0.92	2	185	**370**		2.6	
MW-OB17	MW-OB17_20170619	06/19/17	17.60	7.47	0.213	1.34	0.0	183	70	J	2	U
MW-OB18*	MW-OB18_20150723	07/23/15	16.46	7.12	1.10	6.12	0.5	155	102		2	UJ
MW-OB18	MW-OB18_20160725	07/25/16	19.37	7.42	0.575	0.18	1.8	206	57		3.6	
MW-OB18*	MW-OB18_20170621	06/21/17	14.62	7.50	0.538	0.538	0.0	141	93		3.2	
MW-OB19*	MW-OB19_20150724	07/24/15	14.45	6.86	0.358	0.91	81	-29	182		2	UJ
MW-OB19*	DUP-P1_20150724	07/24/15	-	-	-	-	-	-	162		2	UJ
MW-OB19	MW-OB19_20160725	07/25/16	20.51	7.09	0.297	4.01	0	-18	140		2	UJ
MW-OB19*	MW-OB19_20170620	06/20/17	19.26	7.24	0.276	2.84	0.0	-72	**250**	J	2	U
MW-OB20	MW-OB20_20170619	06/19/17	20.97	7.38	0.764	5.00	0.0	142	51	J	2	U
MW-OB21*	MW-OB21_20150723	07/23/15	14.75	6.65	0.380	2.79	17.5	103	119		2	UJ
MW-OB21	MW-OB21_20160725	07/25/16	17.54	6.59	0.528	0.08	1.5	80	96		2	U
MW-OB21	DUP2_20160725	07/25/16	-	-	-	-	-	-	97		2	UJ
MW-OB21	MW-OB21_20170620	06/20/17	12.81	7.00	0.487	0.0	0.0	62	85	J	2	UJ
MW-OB21	DUP1_20170620	06/20/17	-	-	-	-	-	-	110	J	2	U
MW-OB23*	MW-OB23_20150723	07/23/15	20.83	6.73	0.684	0.94	1.6	-23	**1800**		7.8	J
MW-OB23	MW-OB23_20160725	07/25/16	19.24	6.59	0.539	0.07	1.5	-23	**2500**		11	
MW-OB23	MW-OB23_20170620	06/20/17	15.61	7.14	0.638	1.00	0.0	-34	**1400**	J	8.4	
Blank	EB_20150724PTP	07/24/15	n/a	n/a	n/a	n/a	n/a	n/a	10	U	n/a	
Blank	EB_20160725	07/25/16	n/a	n/a	n/a	n/a	n/a	n/a	10	U	2	U
Blank	EB_20170619	06/19/17	n/a	n/a	n/a	n/a	n/a	n/a	10	U	2	U
Surface Water Quality Standards[1]									9000 H(FC)		5.2 A(A) / 22 A(C)	
SG-7**	SG-7_20150729	07/29/15	25.98	7.46	2.46	5.54	8	120	10	UJ	2	UJ
SG-7**	SG-7_20170620	06/20/17	19.36	6.44	0.898	5.43	3.7	174	7.9	J	2	U
SG-11	SG-11_20150729	07/29/15	26.78	8.02	0.095	68	1.3	12.54	10	UJ	2	UJ
SG-11	DUP-P2_20150729	07/29/15	-	-	-	-	-	-	10	UJ	2	UJ
SG-11	SG-11_20160725	07/25/16	26.35	7.21	0.102	6.07	1.1	153	10	U	2	UJ
SG-11	DUP1_20160725	07/25/16	-	-	-	-	-	-	10	U	2	U
SG-11	SG-11_20170620	06/20/17	20.47	7.01	0.41	5.31	0.0	144	10	U	2	U
SG-11	DUP2_20170620	06/20/17	-	-	-	-	-	-	10	U	2	U

Notes:

1) 6 NYCCR 703.5, Table 1 Water Quality Standards Surface Waters and Groundwaters (or Water Quality Guidance Values from NYS Dept. of Water TOGS 1.1.1 as noted). GA = protective of fresh groundwaters for drinking water source; H(FC) = Human Consumption of Fish; A(A) = Fish Survival (acute); A(C) = Fish Propagation (chronic).

* Well purged dry; samples collected next day after sufficient water recharge

** Sample not collected in 2016; stream was dry

Bold value indicates concentration above water quality standard

Temp (degC) - Temperature (degrees Celsius)

s.u. - standard units

mS/cm -milliseimens per centimeter

DO (mg/l) - dissolved oxygen (milligrams per liter)

NTU - nephelometric turbidity units

ORP (mV) - oxidation reduction potential (millivolts)

µg/L - micrograms per liter

U - indicates not detected above laboratory reporting limits

J - indicates result is estimated

n/a - indicates not applicable or not available (where no screening value available)

"-" = field parameter measurements for primary sample applicable to duplicate sample

Table 4
Laboratory Analytical Method Summary
Pretreatment Plant Annual Groundwater and Surface Water Sampling - June 2017

Analyte	Method Number	Media	Anticipated Reporting Limit (µg/L)	Sample Container Type	Container Volume (each in ml)	No. Containers per sample	Preservation	Holding Time
Test America								
Total Cyanide	SW846 9012B	Water	10	Plastic bottle	250	1	NaOH to pH>12, Cool, < 6 deg. C.	14 Days
ALS Holland								
Free Cyanide	OIA-1677	Water	2	Glass VOA vial	40	1	lead-acetate strip field test for sulfide: 40 mL VOA with NaOH or if sulfide detected 40 mL VOA no preservative	14 Days or 24 hrs

Table 5
Historical Total Cyanide Concentration Data (in mg/L)
Pretreatment Plant Annual Groundwater and Surface Water Sampling - June 2017

SAMPLE	GROUNDWATER - TOTAL CYANIDE CONCENTRATIONS							SURFACE WATER - TOTAL CYANIDE CONCENTRATIONS						
DATE	MW-OB17	MW-OB18	MW-OB19	MW-OB20	MW-OB21	MW-OB22	MW-OB23	P-1	SG-1	SG-2	SG-6	SG-7	SG-8	SG-11
Jun-93	0.083	0.237	2	-	-	-	-	-	-	-	-	-	-	-
Sep-93	0.928	0.387	1.08	-	-	-	-	-	-	-	-	-	-	-
Sep-96	0.67	0.33	-	-	-	-	-	0.66	-	-	-	-	-	-
Mar-97	0.12	0.34	-	0.062	0.49	0.46	3.1	0.35	-	-	-	-	-	-
Sep-97	0.49	ND	-	0.06	0.48	0.088	2.4	0.51	-	-	0.053 N	0.048 N	0.012 N	-
Mar-98	0.12	0.35	-	0.049	0.51	0.046	1.6	0.26	-	-	0.0066	0.04	0.0074	-
Sep-98	0.52	0.39	-	0.058	0.72	0.14	1.9	0.54	-	-	0.064	0.038	0.027 N	-
Mar-99	0.12	0.28	-	0.027	0.57	0.061	2	0.24	-	-	0.029	0.03	0.015	-
Sep-99	0.419	0.3	-	0.145	0.87	0.12	5	0.36	-	-	0.064	< 0.01	0.06	-
Mar-00	0.1	0.29	-	0.019	0.69	0.07	7.2	0.3	-	-	0.0064	0.023	0.013	-
Sep-00	0.28	0.19	-	0.098	0.47	0.12	2.5	0.2	-	-	0.036	< 0.000005	0.0075	-
Apr-01	0.19	0.24	-	0.021	0.42	0.19	1	0.28	-	-	0.024	0.022	0.023	-
Aug-02	0.14	0.18	0.9	0.1	0.54	0.3	4.5	0.22	-	-	< 5	< 5	< 5	-
May-04	0.11	0.14	0.63	0.046	0.36	0.077	2.2	0.14	-	-	0.024	0.022	0.0088	-
Jan-05	0.15	0.14	0.47	0.094	0.48	0.046	1.5	0.11	-	-	-	-	-	-
Jul-05	0.34	0.15	0.69	0.073	0.41	0.34	2.9	0.14	-	-	-	-	-	-
Jan-06	0.16	0.18	0.096	0.062	0.33		1.1	0.096	-	-	-	-	-	-
Jul-06	0.084	0.086	0.38	0.33	0.36	0.084	0.04	0.12	-	-	-	-	-	-
Dec-06	0.16	0.16	0.089	-	0.36	0.036	1.6	0.077	-	-	-	-	-	-
Sep-07	0.34	0.2	-	0.056	0.29	0.04	2.1	0.18	-	-	-	-	-	-
Sep-08	0.63	-	0.28	0.04	0.28	0.01	4	0.14	-	-	-	-	-	-
Dec-08	0.14	-	0.17	0.05	0.3	ND		0.06	-	-	-	-	-	-
Dec-09	0.09	-	0.17	0.05	0.26	0.03	0.98	0.06	-	-	-	-	-	-
Jun-10	0.066	-	0.25	0.03	0.21	0.017	1.7	0.089	-	-	-	-	-	-
Dec-10	0.21	-	0.041	-	0.19	0.024	2.3	0.073	-	-	-	-	-	-
Dec-11	0.075	0.054	0.054	0.16	0.18	0.019	0.91	0.036	-	-	-	-	-	-
Dec-12	0.2	0.059	0.059	0.17	0.076	0.021	1.9	0.11	-	-	-	-	-	-
Dec-13	0.19	0.083	0.18	NS	0.14	0.017	1.1	0.078	0.014	0.009	0.031	0.031	0.031	0.031
Dec-14	0.2	0.035	0.096	0.087	0.100	0.016	0.69	0.051	-	-	0.019	0.018	0.015	0.015
Jul-15	0.182	0.102	0.182	DRY	0.119	-	1.8	-	-	-	-	<0.010 J	-	<0.010 J
Jul-16	0.370	0.057	0.140	NS	0.097	-	2.5	-	-	-	-	DRY	-	<0.010
Jun-17	0.070 J	0.093	0.250 J	0.051 J	0.110 J	-	1.4 J	-	-	-	-	0.0079 J	-	<0.010

Notes:
Available data obtained from historical monitoring reports; majority of samples analyzed were not field-filtered.
Prior to July 2015, samples were collected using 3-volume purge and sample methods.
Low flow sampling methods were employed beginning July 2015.
mg/L - milligrams per liter

EHS Support consider it done

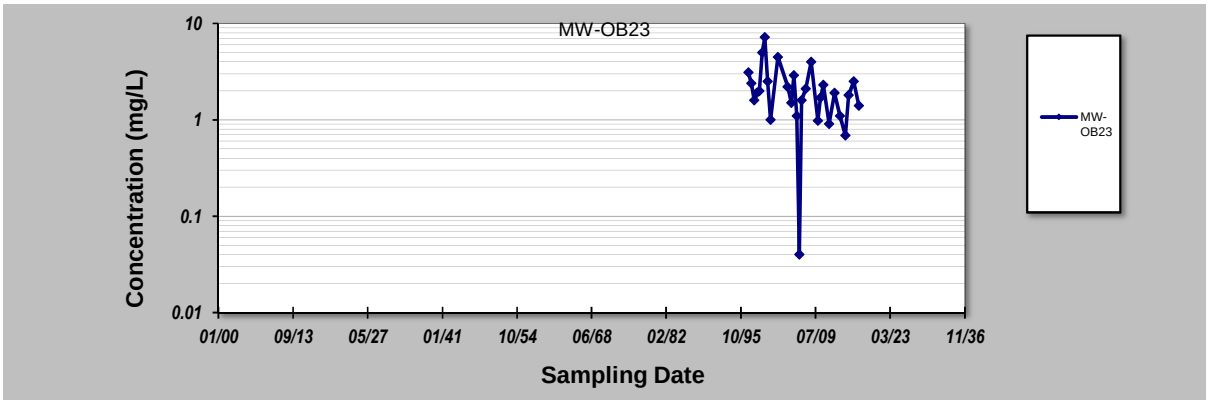
Table 6
Mann-Kendall Calculations – MW-OB23
Pretreatment Plant Annual Groundwater Surface Water Sampling - June 2017

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	14-Nov-17	Job ID:	C16262_2018_400
Facility Name:	Glens Falls - Pretreatment Plant	Constituent:	Total Cyanide
Conducted By:	Leah Krause	Concentration Units:	mg/L

Sampling Point ID: MW-OB23

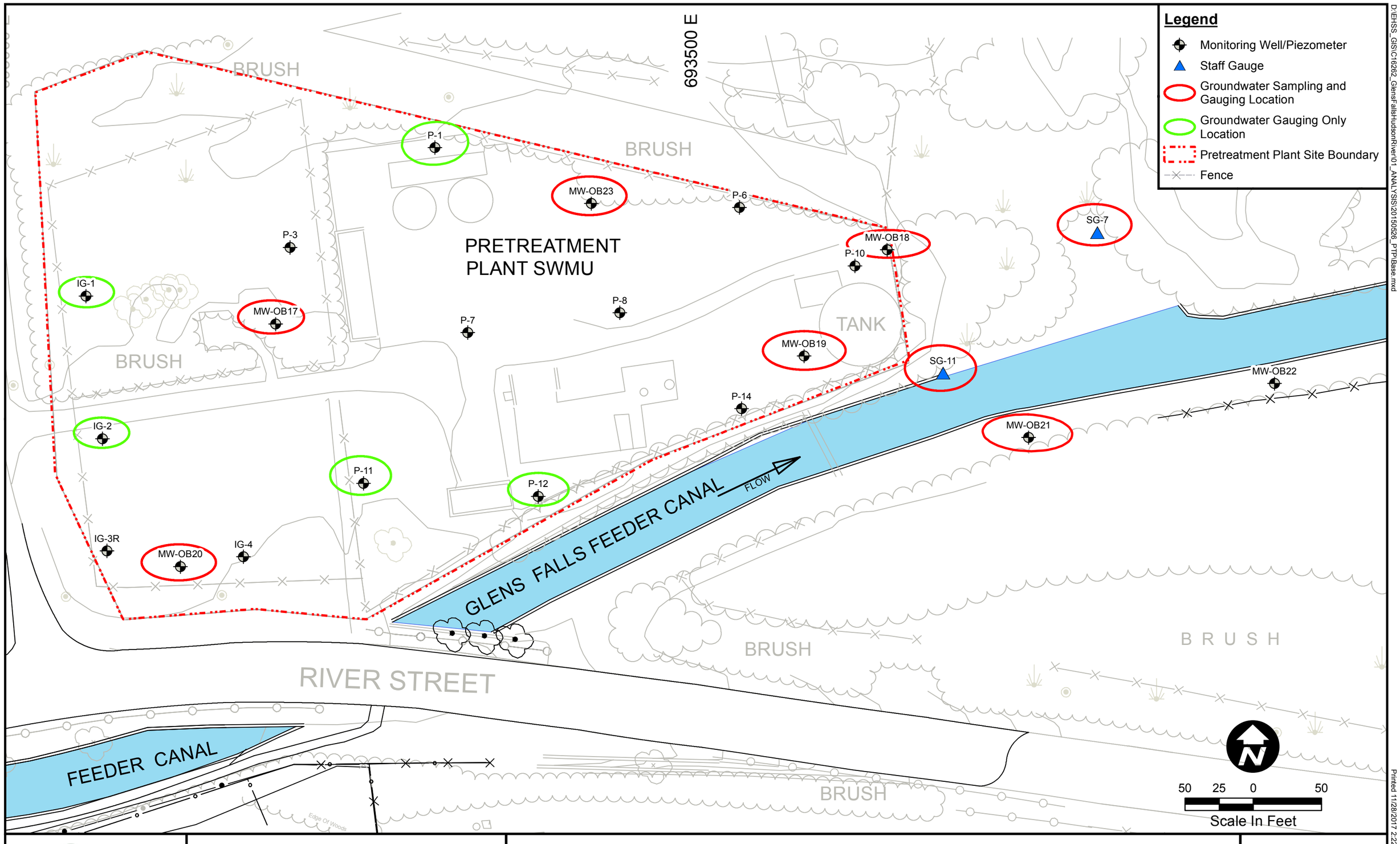
Sampling Event	Sampling Date	TOTAL CYANIDE CONCENTRATION (mg/L)
1	21-Mar-97	3.1
2	26-Sep-97	2.4
3	25-Mar-98	1.6
4	17-Sep-98	1.9
5	18-Mar-99	2
6	24-Sep-99	5
7	16-Mar-00	7.2
8	21-Sep-00	2.5
9	3-Apr-01	1
10	2-Aug-02	4.5
11	17-May-04	2.2
12	14-Jan-05	1.5
13	5-Jul-05	2.9
14	23-Jan-06	1.1
15	14-Jul-06	0.04
16	14-Dec-06	1.6
17	20-Sep-07	2.1
18	17-Sep-08	4
19	4-Dec-09	0.98
20	2-Jun-10	1.7
21	7-Dec-10	2.3
22	21-Dec-11	0.91
23	18-Dec-12	1.9
24	16-Dec-13	1.1
25	17-Dec-14	0.69
26	23-Jul-15	1.8
27	1-Jul-16	2.5
28	20-Jun-17	1.4
29		
30		
Coefficient of Variation:		0.70
Mann-Kendall Statistic (S):		-69
Confidence Factor:		93.3%
Concentration Trend:		Prob. Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

FIGURES



EHS Support *consider it done*	**ASHLAND** **FORMER CIBA-GEIGY / HERCULES SITE** **GLENS FALLS, NY**	**PRETREATMENT PLANT ANNUAL EVENT MONITORING LOCATIONS**	**FIGURE 1**

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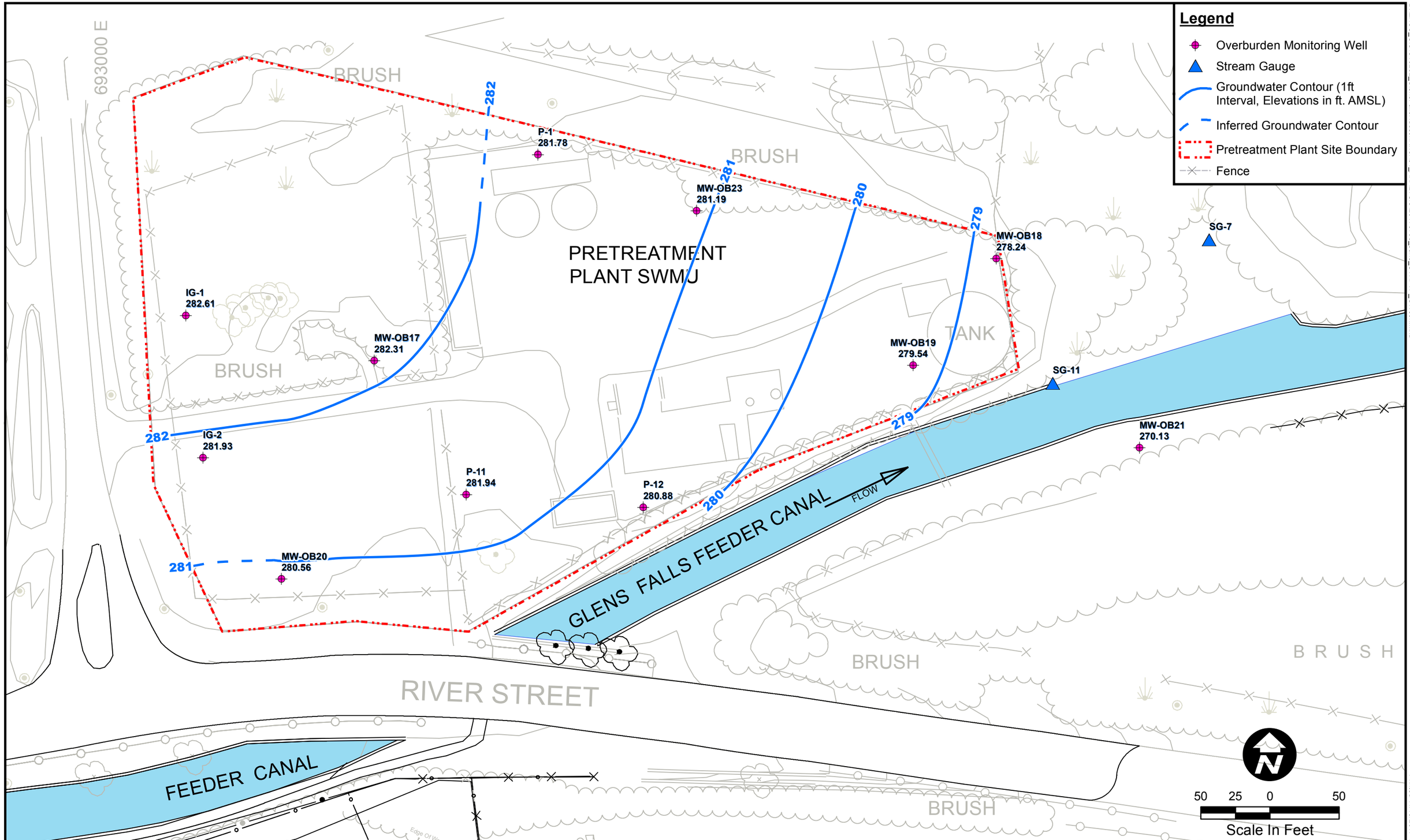

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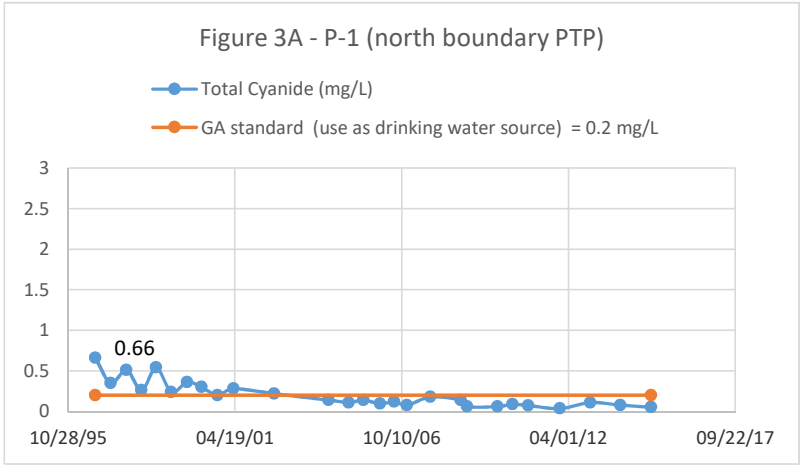
EHS Support *consider it done*

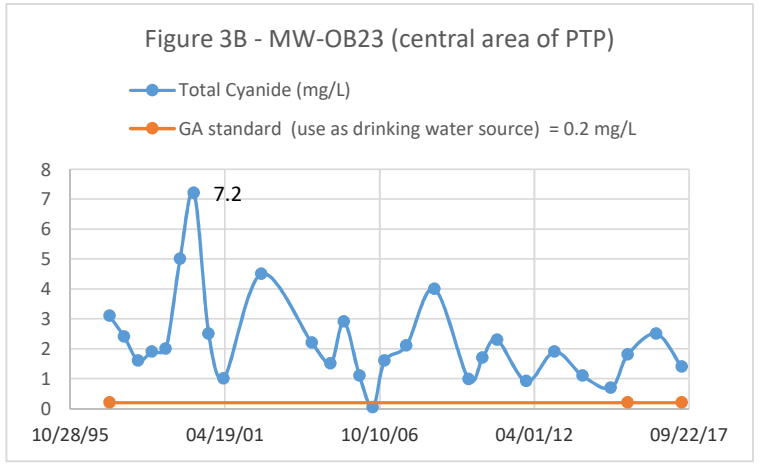
ASHLAND
FORMER CIBA-GEIGY / HERCULES SITE
GLENS FALLS, NY

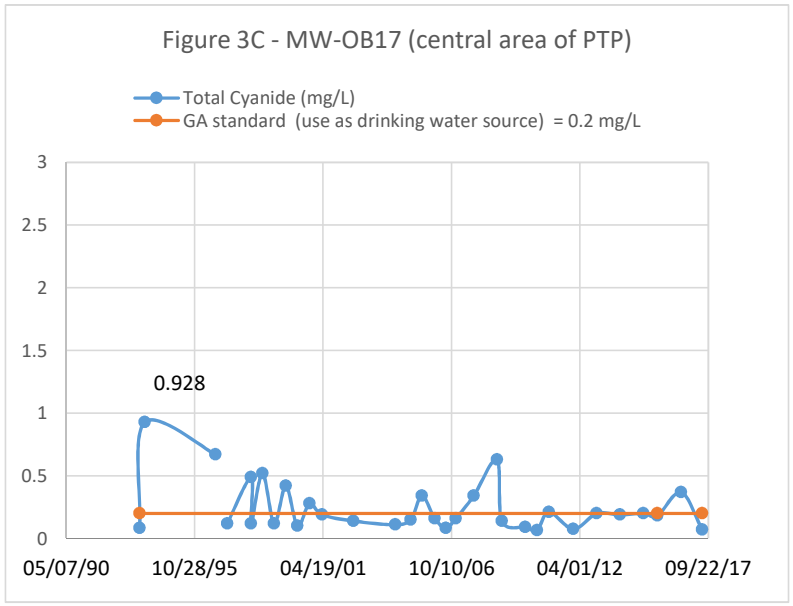
GROUNDWATER ELEVATION CONTOUR OVERBURDEN AT PRETREATMENT PLANT JUNE 2017

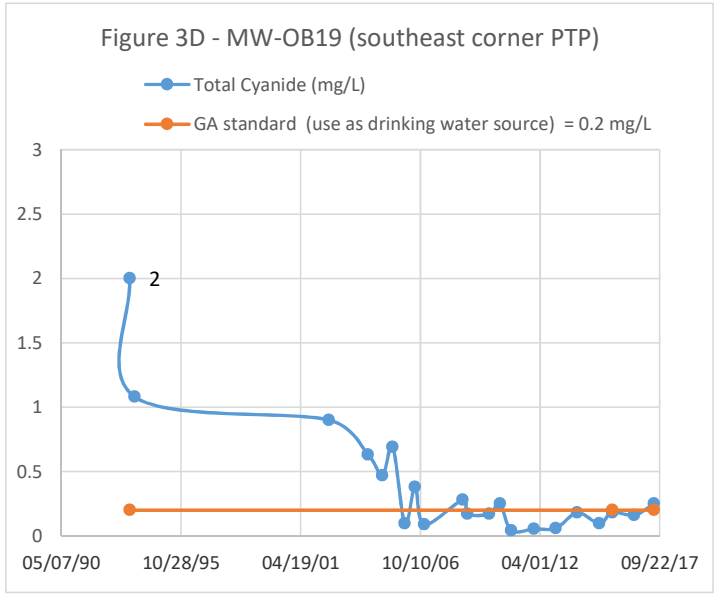
FIGURE 2

Figures 3A - 3D
Cyanide Concentrations in Groundwater versus Time (mg/L)
Pretreatment Plant Annual Groundwater & Surface Water Sampling - June 2017

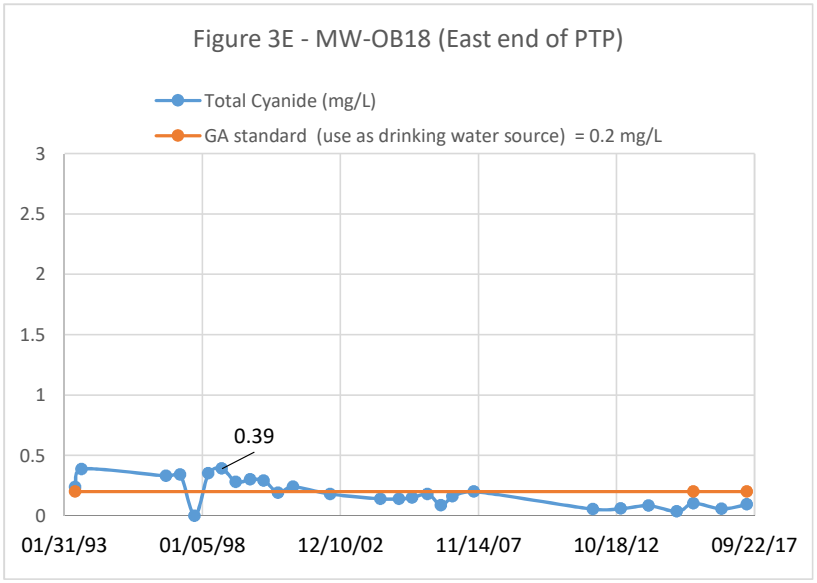


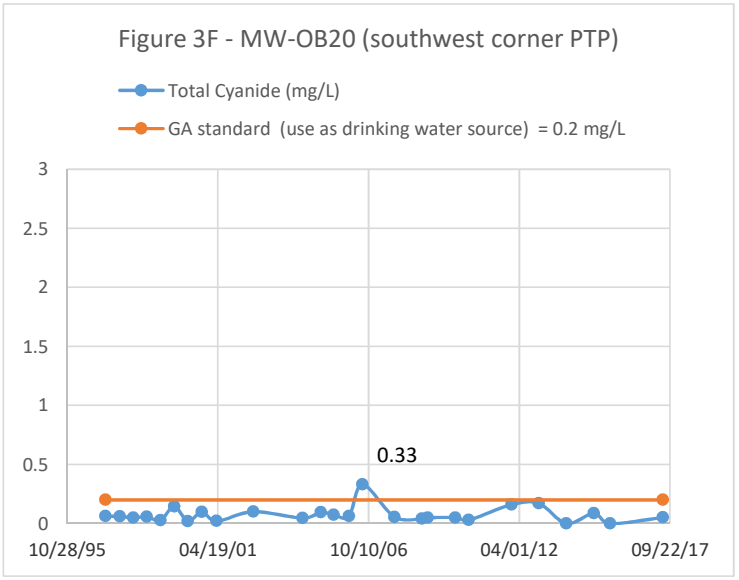


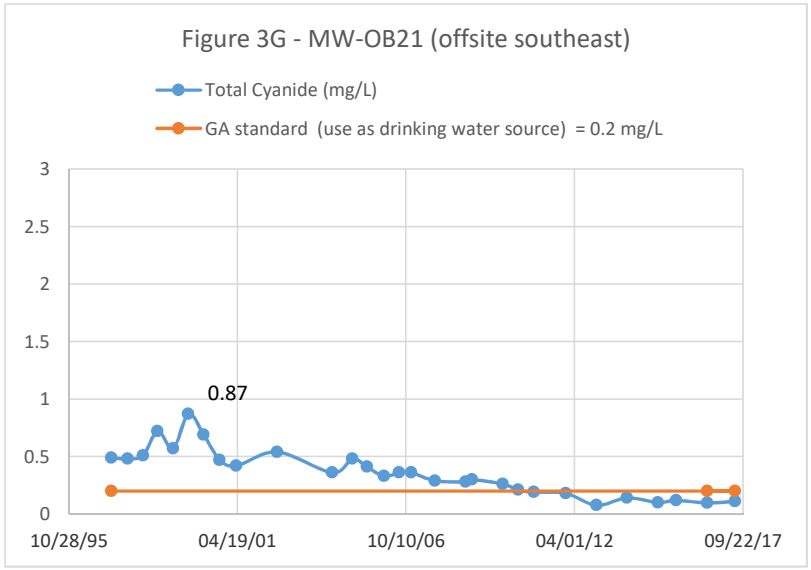




Figures 3E - 3G
Cyanide Concentrations in Groundwater versus Time (mg/L)
Pretreatment Plant Annual Groundwater & Surface Water Sampling - June 2017







ATTACHMENT 1
Purge and Sample Logs

Water Level Measurements
Ashland - Glens Falls, NY

Date 6/19/17 Quarter/Year: 2nd 2017
Personnel: Garrett C. Paul G. Dan B. Joe D. Katie A.

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	1115	14.87	19.65	good
AW-A2	32.0	10	1480	24.83	39.86	2/3 bolts missing
AW-A4	37.0	10	1230	20.02	38.82	wasp nest in Lid
AW-A7	48.0	10	932	28.68	46.61	No J-Plug
AW-A9	45.0	10	1042	27.65	43.11	ant nest
AW-A10	46.0	10	~~1120~~	~~24.90~~	~~56.11~~	1705, 25.36, 45.36
AW-A11	58.0	10	1128	24.90	56.11	good
AW-A13	31.5	10	1800	25.24	56.56	
AW-A14	34.5	10	940	17.07	32.73	good
AW-A15	31.0	10	1427	17.58	30.82	good
AW-B2	55.0	24	1453	25.07	34.58	good
AW-B3	58.5	10	1225	23.89	60.35	good
AW-B4	47.5	10	1422	28.07	45.79	good
AW-B9	67.0	14	940	40.14	66.01	good
AW-B10	62.0	10	1010	31.79	59.70	ant nest
AW-B11	67.0	10	1700	29.52	58.41	
AW-B12	61.0	10	1130	29.39	58.59	good
AW-B13	62.0	10	1740	17.66	31.00	
AW-B14	48.0	10	1451	27.48	46.52	good
AW-B15	47.0	10	1443	26.39	44.69	good
AW-B16	46.0	10	1515	23.12	47.88	good
AW-B17	47.7	10	1310	23.46	47.10	2/3 bolts
AW-B18	50.5	10	1725	34.74	54.46	
AW-B19	46.9	10	1710	32.71	53.11	
AW-B20	31.0	10	1702	10.40	36.83	
AW-C1	144.0	10	1000	33.53	139.24	good
AW-C2	169.0	10	17.45	~~171.75~~	171.75	DTW: 52.24
AW-C7	155.0	10	1220	85.03	158.71	good
AW-C8	162.0	15	1447	~~144.79~~ 84.15	169.60	3/5 bolts missing
AW-C9	127.0	10	945	~~130.27~~	130.27	no J-Plug
AW-C10	137.0	10	940	51.08	135.46	good
AW-C11	158.0	10	1425	42.38	154.98	good
BP-6	23.0	10	1300	19.99	24.77	good
BP-9	16.0	10	1807	14.86	18.25	
IP-4	8.5	4	~~1745~~	~~7.41~~	~~15.80~~	1725, 4.50, 12.78
MW-9	49.4	10*	1745	7.41	15.80	
MW-10B	35.0	10	942	27.00	34.78	good
MW-19	41.5	31.5	1738	12.13	45.12	
MW-20C	160.0	10	10.41	74.42	165.76	good
MW-20D	55.1	10	1644	43.55	66.85	good
MW-25D	60.7	10	930	31.64	60.80	good
MW-25S	39.4	10	1047	27.21	41.87	good
MW-26	~8	5	900	8.85	12.98	good
MW-27S	42.5	10	1060	27.23	33.51	good
MW-27D	66.0	10	1061	31.44	62.56	good
MW-28	~12	5	10.07	6.43	11.42	good
MW-30D	51.5	10	1734	9.36	44.17	
MW-31	15.0	5	1721	7.94	16.89	
MW-36C	160.0	10	1022	76.67	164.35	Stick up hit by mower, warped pipe makes it hard to remove stick up lid
MW-36D	57.2	10	1015	40.61	59.13	good
MW-36S	33.0	9	1010	22.54	35.90	good
MW-40B	53.0	10	1005	49.90	54.66	good
MW-OB2	17.0	10	952	12.31	18.22	good
MW-OB5	12.0	7	1021	8.47	14.10	good
MW-OB7	9.0	5	1445	8.11	15.79	3/3 bolts missing

Water Level Measurements
Ashland - Glens Falls, NY

Date 6/19/17 Quarter/Year: Q2 2017

Personnel:

Well Name	Install Depth (ft bgs)	Well Screen Length	Time	DTW (ft btoc)	Total Depth (ft btoc)	Comments
MW-OB13	8.0	5	1710	1029	14.83	
MW-OB14	18.0	10	1503	10.70	19.11	good
MW-OB15	8.0	5	930	1.51	7.24	Flooded
MW-OB24	10.5	5	1049	15.68	17.98	good
MW-OB25	10.0	5	1420	7.88	11.35	good
MW-OB26	14.0	5	1509	9.98	17.11	good
MW-OB27	11.0	5	1508	10.95	11.35	2/3 bolts missing
MW-OB30	18.25	12	1650	10.10	18.25	
MW-OB31	13.67	8	1700	9.81	13.68	
MW-OB32	13.05	5	1707	8.89	1304	
MW-OB33	15.21	10	1715	7.99	19.26	
MW-OB34	16.04	10	1720	12.68	16.04	
P-A1	34.5	10	955	16.81	19.00	good
WP-CC-12	21.2	5	1215	DRY	19.72	good
SG-12	NA	N/A	736	2.4	N/A	
REMEDIATION SYSTEM						
MH-1	~10.6	N/A	1439	dry	10.62	good
MH-2	~20.5	N/A	1434	DRY	20.15	Lock Broken
MH-3	~10.0	N/A	1428	dry	9.99	good
MH-4	~23.3	N/A	1417	19.57	23.32	good
MH-5	~18.5	N/A	1526	dry	18.19	good
MH-6	~9.6	N/A	1502	dry	9.34	good
Sump A	~31.5	N/A	1125	29.28	31.54	good (.07 diff)
Sump B	~29.2	N/A	1134	24.40	28.98	good (.06 diff)
Sump C	~29.0	N/A	1515	14.30	28.78	good
EW-B5	51.8	15.8	1456	31.13	53.84	
PRE-TREATMENT PLANT						
IG-1	NA		1002	6.18	8.57	No well cap
IG-2	NA		1000	7.84	11.16	
MW-OB17	11.0		1010	7.60	13.54	
MW-OB18	9.0		935	9.45	12.51	
MW-OB19	10.0		940	8.29	9.38	
MW-OB20	8.5		955	9.80	10.19	
MW-OB21	14.5		1025	13.90	16.62	
MW-OB23	6.5		1015	5.86	8.23	
P-1	8		930	5.95	7.92	No well cap
P-11	11		955	643	12.77	No well cap
P-12	8		945	7.03	9.50	No well cap
Canal (SG-2)	NA		1630	4.20	5.30	

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.

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Paul Girafalco

Weather: 83° Mostly Cloudy Humidity 74%

Well ID: MW-OB17

Date: 6/19/17

Time In: 1117 Time Out: 1155

WELL INFORMATION

Depth to Water (from TOC):	(feet)	7.60
Depth to Water(From TOC) With Pump in place:	(feet)	7.61
Total Depth (from TOC):	(feet)	13.54
Length of Water Column :	(feet)	5.93
Well Diameter:	(inches)	2

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)	3,658.51 mL
Pumping Rate of Pump:	(mL/min)	150 mL
Total Volume Removed:	(mL or gal)	4500 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: Geo pump #4069 Pump Size: 1/4 x 3/8 tubing Depth of Pump Intake: 10.58

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-52 L3SURJCG

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 7.66

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

FIELD PARAMETER READINGS:

Time	1120	1122	1124	1126	1128	1130	1135	1140	1145	1150				
Rate (ml/min)	250	125	150	150	150	150	150	150	150	150				
Depth to Water (ft. TOC)	7.62	7.65	7.66	7.66	7.66	7.67	7.66	7.67	7.66	7.66				
Temperature (°C)	17.72	17.30	17.99	18.12	18.12	17.90	17.76	17.92	17.71	17.60				
pH	6.94	7.19	7.26	7.29	7.38	7.40	7.43	7.46	7.46	7.47				
Conductivity (mS/cm)	0.221	0.214	0.139	0.215	0.214	0.214	0.213	0.213	0.214	0.213				
Dissolved Oxygen (mg/L)	3.02	2.30	2.14	1.99	1.96	1.88	1.60	1.43	1.35	1.34				
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
ORP (mV)	188	177	173	176	175	176	180	180	181	183				

Observations (water color, clarity, etc.): Clear

SAMPLE INFORMATION

Sample List:

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

Sample ID: MW-OB17_20170619

Start Time: 1151

End Time: 1154

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 2

Sampled By: Paul Girafalco PG

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)

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
± 0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Joe Dallmeyer | Well ID: MW-0818

Weather: 75°, SUNNY | Date: 06/20/2017

Time In: ~~7:23~~ 7:44 | Time Out: 8:22

WELL INFORMATION

Depth to Water (from TOC):	(feet)	9.45 (6/19) / 9.69 (6/20)	Well Type:	Flushmount ☐	Stick-Up ☑
Depth to Water(From TOC) With Pump in place:	(feet)	10.15 (6/19) / 9.70 (6/20)	Well Locked:	Yes ☑	No ☐
Total Depth (from TOC):	(feet)	12.51	Measuring Point Marked:	Yes ☑	No ☐
Length of Water Column :	(feet)	2.82	Well Condition:	Good ☑	Poor ☐
Well Diameter:	(inches)	2	Well Condition Comments:	N/A	

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1740 mL
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	1750 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: Geo 4052 | Pump Size: 3/4 x 3/8 | Depth of Pump Intake: 10.98

Evacuation Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-52 L35URJCG

Sampling Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Did well go dry? Yes ☑ No ☐

Final Depth to Water (prior to turning off pump): 11.22

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

FIELD PARAMETER READINGS:

Time	~~2:25~~	7:46	7:48	7:50	7:52	7:54	7:56	8:01	8:06	8:11	8:12	
Rate (ml/min)		150	125	100	106	100	100	100	100	100	dry	
Depth to Water (ft. TOC)	~~10.44~~	10.09	10.22	10.32	10.42	10.52	10.65	10.86	11.10	11.22		
Temperature (°C)	~~20.27~~	17.53	18.76	18.10	17.79	17.89	16.62	16.09	16.01	14.62		
pH	~~7.42~~	6.70	7.22	7.38	7.42	7.44	7.45	7.45	7.48	7.50		
Conductivity (mS/cm)	~~0.578~~	0.641	0.598	0.568	0.572	0.523	0.515	0.507	0.510	0.598		
Dissolved Oxygen (mg/L)	~~0.00~~	1.28	0.77	1.91	2.68	2.78	2.64	1.78	1.61	5.64		
Turbidity (NTU)	~~0.0~~	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
ORP (mV)	~~62~~	142	129	126	123	126	129	134	138	141		

Observations (water color, clarity, etc.):

First column was from 6/19, but operation had to stop due to storm work - lightning. 2nd attempt - went dry after 16 minutes

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

SAMPLE INFORMATION

Sample List:

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

Sample ID: MW-0818_20170621

Start Time: 7:55

End Time: 7:58

MS/MSD: Yes ☐ No ☑

Duplicate: Yes ☐ No ☑

Total Bottles: 2

Sampled By: JD

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
± 0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Joe Dallmeyer

Weather: 75°, Sunny

Well ID: MW-OB18

Date: 06/21/2017

Time In: ~~7:35~~ JD 7:45 Time Out: 8:07

WELL INFORMATION

Depth to Water (from TOC):	(feet)	9.77
Depth to Water(From TOC) With Pump in place:	(feet)	9.76
Total Depth (from TOC):	(feet)	12.51
Length of Water Column :	(feet)	2.74
Well Diameter:	(inches)	2

Well Type: Flushmount ☐ Stick-Up ☑

Well Locked: Yes ☑ No ☐

Measuring Point Marked: Yes ☑ No ☐

Well Condition: Good ☑ Poor ☐

Well Condition Comments: N/A

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1740 mL
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	0mL

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: Geo 4052 Pump Size: ¼ x ⅜ Depth of Pump Intake: 10.98

Evacuation Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐

Water Quality Meter (type/Serial Number): N/A

Sampling Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☑

Final Depth to Water (prior to turning off pump): 9.85

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

FIELD PARAMETER READINGS:

Time	
Rate (ml/min)	
Depth to Water (ft. TOC)	
Temperature (°C)	
pH	
Conductivity (mS/cm)	
Dissolved Oxygen (mg/L)	
Turbidity (NTU)	
ORP (mV)	

Observations (water color, clarity, etc.):

Clear water

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

SAMPLE INFORMATION

Sample List:

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

Sample ID: MW-OB18_20170621

Start Time: 7:55

End Time: 7:58

MS/MSD: Yes ☐ No ☑

Duplicate: Yes ☐ No ☑

Total Bottles: 2

Sampled By: JD

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
± 0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Paul Girafalco

Weather: 84° Mostly Cloudy

Well ID: MW-OB19

Date: 6/19/17

Time In: 1132

Time Out: 1256

		6/19/17
Depth to Water (from TOC):	(feet)	8.28 /
Depth to Water(From TOC) With Pump in place:	(feet)	8.28 /
Total Depth (from TOC):	(feet)	9.38
Length of Water Column :	(feet)	1.10
Well Diameter:	(inches)	2

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	6.78.65 mL
Pumping Rate of Pump:	(mL/min)	150 mL
Total Volume Removed:	(mL or gal)	2,850 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

WELL INFORMATION

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

EVACUATION INFORMATION

Pump ID: Geo pump 4068 Pump Size: 1/4x3/8 tubing Depth of Pump Intake: 8.85

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

Water Quality Meter (type/Serial Number): Horiba U-52 L3SURJC6

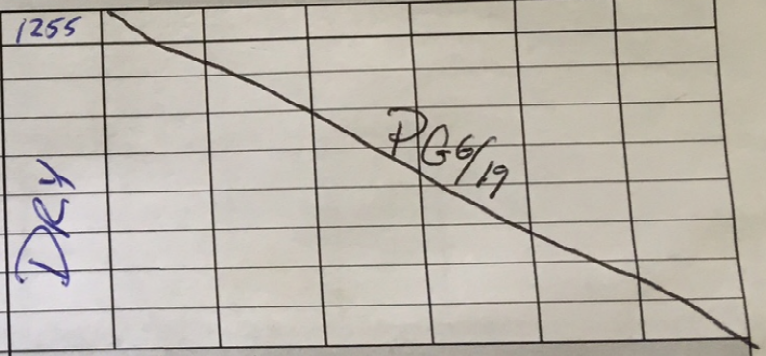
Sampling Method:	Bailer ☐	Peristaltic ☒	Grab	Bladder ☐ Other ☐
Did well go dry?	Yes ☒	No ☐		

Final Depth to Water (prior to turning off pump): 9.38 / 8.28 on 6/20/17.

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

FIELD PARAMETER READINGS:

Time	1236	1238	1240	1242	1244	1246	1251	1255
Rate (ml/min)	300	150	150	150	150	150	150	
Depth to Water (ft. TOC)	8.56	8.65	8.77	8.85	8.90	8.95	9.05	
Temperature (°C)	23.79	23.92	23.21	22.41	21.50	21.00	19.26	
pH	7.46	7.29	7.21	7.19	7.20	7.20	7.24	
Conductivity (mS/cm)	0.256	0.261	0.266	0.271	0.273	0.272	0.276	
Dissolved Oxygen (mg/L)	4.24	4.66	4.26	3.97	3.85	3.68	2.84	
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ORP (mV)	103	-42	-65	-71	-74	-75	-72	



SAMPLE INFORMATION

Sample List:

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

Sample ID: MW-OB19_20170620

Start Time: 729

End Time: 734

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 2

Sampled By: PG

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

Observations (water color, clarity, etc.):

went dry will go back later to try and sample

Water color - clear

Grabbed sample on 6/20/17 after well recharged

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

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
± 0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Paul Girafalco | Well ID: MW-0B19

Weather: 84° Mostly Cloudy | Date: 6/20/17

Time In: 726 | Time Out: 735

		6/20/17
Depth to Water (from TOC):	(feet)	7.97
Depth to Water(From TOC) With Pump in place:	(feet)	7.96
Total Depth (from TOC):	(feet)	9.38 from 6/19
Length of Water Column :	(feet)	1.41
Well Diameter:	(inches)	2

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	869.9 mL
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

WELL INFORMATION

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

EVACUATION INFORMATION

Pump ID: Geo pump 4065 | Pump Size: 1/4 x 3/8 | Depth of Pump Intake: 8.85

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

Water Quality Meter (type/Serial Number): NA

Sampling Method:	Bailer ☐	Peristaltic ☒ Grab	Bladder ☐	Other ☐
Did well go dry?	Yes ☒ on 6/19	No ☐		

Final Depth to Water (prior to turning off pump): 8.28 on 6/20

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

FIELD PARAMETER READINGS:

Time	729
Rate (ml/min)	
Depth to Water (ft. TOC)	
Temperature (°C)	
pH	
Conductivity (mS/cm)	
Dissolved Oxygen (mg/L)	
Turbidity (NTU)	
ORP (mV)	Grab Sample

Paul Girafalco 6/20/17

Observations (water color, clarity, etc.):

Water color - Clear

Grab Sample on 6/20/17 after well recharged

SAMPLE INFORMATION

Sample List:

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

Sample ID: MW-0B19_20170620

Start Time: 729

End Time: 734

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Total Bottles: 2

Sampled By: PG

Duplicate ID:

Sample Time:

Total Bottles:

Sampled By:

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

PG 6/20/17

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

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
±0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Paul Girafalco
Weather: 84° Mostly Cloudy
Well ID: MW-03B19
Date: 6/19/17
Time In: 1132
Time Out: 1256

WELL INFORMATION

Depth to Water (from TOC):	(feet)	8.28
Depth to Water(From TOC) With Pump in place:	(feet)	8.28
Total Depth (from TOC):	(feet)	9.38
Length of Water Column :	(feet)	1.10
Well Diameter:	(inches)	2

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

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	6.78:65 mL
Pumping Rate of Pump:	(mL/min)	150 mL
Total Volume Removed:	(mL or gal)	2,850 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: Geo pump 4068 Pump Size: 1/4x3/8 tubing Depth of Pump Intake: 8.85
Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐
Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐
Water Quality Meter (type/Serial Number): Horiba U-52 L3SURJC6
Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐
Did well go dry? Yes ☒ No ☐
Final Depth to Water (prior to turning off pump): 9.38
Barometric Pressure (At time of sampling) in mm/Hg:

FIELD PARAMETER READINGS:

Time	1236	1238	1240	1242	1244	1246	1251	1255						
Rate (ml/min)	300	150	150	150	150	150	150							
Depth to Water (ft. TOC)	8.56	8.65	8.77	8.85	8.90	8.95	9.05							
Temperature (°C)	23.74	23.92	23.21	22.41	21.50	21.00	19.26							
pH	7.46	7.29	7.21	7.19	7.20	7.20	7.24	✓						
Conductivity (mS/cm)	0.256	0.261	0.266	0.271	0.273	0.272	0.276	✓						
Dissolved Oxygen (mg/L)	4.24	4.66	4.20	3.97	3.85	3.68	2.84	✓						
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
ORP (mV)	103	-42	-65	-71	-74	-75	-72							

Observations (water color, clarity, etc.):
went dry will go back later to try and sample

SAMPLE INFORMATION

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

Sample ID:
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:

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

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
± 0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Joe Dallmeyer, Well ID: MW-0820

Weather: 80°, cloudy Date: 06/19/2017

Time In: 11:55 Time Out: 12:45

WELL INFORMATION

Depth to Water (from TOC):	(feet)	9.80	Well Type:	Flushmount ☐	Stick-Up ☑
Depth to Water(From TOC) With Pump in place:	(feet)	9.78	Well Locked:	Yes ☑	No ☐
Total Depth (from TOC):	(feet)	10.19	Measuring Point Marked:	Yes ☑	No ☐
Length of Water Column :	(feet)	0.39	Well Condition:	Good ☑	Poor ☐
Well Diameter:	(inches)	2	Well Condition Comments:	N/A	

WELL WATER INFORMATION

Volume of Water in Well:	(ml or gal)	240.6 ml
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(ml or gal)	4000 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	2,471.80	4" diam. well

EVACUATION INFORMATION

Pump ID: 4052 Geo Pump Size: 1/4 x 3/8 Depth of Pump Intake: 10.18

Evacuation Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐

Water Quality Meter (type/Serial Number): Horiba U-52 15490PTYW

Sampling Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☑

Final Depth to Water (prior to turning off pump): 9.83 ft

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

FIELD PARAMETER READINGS:

Time	11:58	12:00	12:02	12:04	12:06	12:08	12:13	12:18	12:23	12:28	12:33			
Rate (ml/min)	200	150	150	100	100	100	100	100	100	100	100			
Depth to Water (ft. TOC)	9.84	9.82	9.82	9.81	9.81	9.82	9.81	9.82	9.82	9.82	9.84			
Temperature (°C)	18.54	17.15	17.33	17.78	18.17	18.24	18.42	17.90	19.98	20.60	20.97			
pH	6.40	6.44	7.06	7.13	7.18	7.22	7.28	7.32	7.35	7.37	7.38			
Conductivity (mS/cm)	0.610	0.611	0.623	0.637	0.656	0.677	0.728	0.760	0.755	0.756	0.764			
Dissolved Oxygen (mg/L)	8.58	6.87	6.37	6.19	6.10	6.07	5.85	5.86	5.15	4.96	5.00			
Turbidity (NTU)	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
ORP (mV)	147	125	125	127	130	131	136	142	143	143	142			

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: MW-0820-20170619 Duplicate ID:

Start Time: 12:33 Sample Time:

End Time: 12:34 Total Bottles:

MS/MSD: Yes ☐ No ☒ Sampled By:

Duplicate: Yes ☐ No ☒

Total Bottles: 2

Sampled By: JD

MS/MSD ID:

Sample Time:

Total Bottles:

Sampled By:

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

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
± 0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Paul Girgalco
Weather: Cloudy 80°
Well ID: MW-0B21
Date: 6/20/17
Time In: 820
Time Out: 913

		6/19	6/20
Depth to Water (from TOC):	(feet)	13.90	12.46
Depth to Water(From TOC) With Pump in place:	(feet)	12.44	
Total Depth (from TOC):	(feet)	16.62	
Length of Water Column :	(feet)	4.16	
Well Diameter:	(inches)	2	

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)	2,566.5mL
Pumping Rate of Pump:	(mL/min)	150mL
Total Volume Removed:	(mL or gal)	6,325mL

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: Geopump 406E Pump Size: 1/4 x 3/8 Depth of Pump Intake: 14.54

Evacuation Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐
Tubing Used:	Teflon ☐	Polyethylene ☒	N/A ☐	
Water Quality Meter (type/Serial Number):	Horiba U52 SY98PTYW			
Sampling Method:	Bailer ☐	Peristaltic ☒ Grab	Bladder ☐	Other ☐
Did well go dry?	Yes ☐	No ☒		

Final Depth to Water (prior to turning off pump): 13.87

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

FIELD PARAMETER READINGS:

Time	824	826	828	830	832	834	839	844	849	854	859
Rate (ml/min)	200	175	150	150	150	150	150	125	125	100	100
Depth to Water (ft. TOC)	12.71	12.83	12.96	13.02	13.14	13.29	13.53	13.77	14.03	14.23	14.31
Temperature (°C)	15.38	14.B	13.45	13.21	13.17	13.05	12.74	12.78	12.71	12.81	12.81
pH	6.53	6.82	6.97	7.00	7.01	6.98	6.97	6.99	7.00	7.00	7.00
Conductivity (mS/cm)	0.485	0.486	0.482	0.472	0.447	0.421	0.444	0.464	0.476	0.481	0.487
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
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORP (mV)	123	107	101	103	104	123	121	84	63	60	62

PG 6/20/17

SAMPLE INFORMATION

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

Sample ID: MW-0B21-20170620
Start Time: 900
End Time: 904
MS/MSD: Yes ☒ No ☐
Duplicate: Yes ☒ No ☐
Total Bottles: 2
Sampled By: PG

Duplicate ID: DUP-L20170620
Sample Time: 910
Total Bottles: 2
Sampled By: PG

MS/MSD ID: MW-0B21-20170620
Sample Time: 905
Total Bottles: 2
Sampled By: PG

Observations (water color, clarity, etc.):

6/19/17 - set up pump, stopped before purge due to lightning

Water - Clear

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

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
±0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Joseph Dallmeyer
Weather: 70°, cloudy
Well ID: MW-OB23
Date: 06/20/2017
Time In: 8:36 Time Out: 9:26

WELL INFORMATION

Depth to Water (from TOC):	(feet)	5.86 (6/19) / 5.44 (6/20)
Depth to Water(From TOC) With Pump in place:	(feet)	5.46
Total Depth (from TOC):	(feet)	8.23
Length of Water Column :	(feet)	2.79
Well Diameter:	(inches)	2

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

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	1721 mL
Pumping Rate of Pump:	(mL/min)	100
Total Volume Removed:	(mL or gal)	3200 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: GRO 4052 Pump Size: ¼ X 3/8 Depth of Pump Intake: 7.05
Evacuation Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐
Tubing Used: Teflon ☐ Polyethylene ☑ N/A ☐
Water Quality Meter (type/Serial Number): Horiba U-52 L35JURJCG
Sampling Method: Bailer ☐ Peristaltic ☑ Bladder ☐ Other ☐
Did well go dry? Yes ☐ No ☑
Final Depth to Water (prior to turning off pump): ~~5.88~~ 5.61
Barometric Pressure (At time of sampling) in mm/Hg:

FIELD PARAMETER READINGS:

Time	8:38	8:40	8:42	8:44	8:46	8:48	8:53	8:58	9:03	9:08
Rate (ml/min)	150	150	100	100	100	100	100	100	100	100
Depth to Water (ft. TOC)	5.59	~~14.88~~	5.57	5.58	5.59	5.58	5.59	5.59	5.59	5.60
Temperature (°C)	15.03	14.88	15.22	15.44	15.53	15.55	15.45	15.55	15.52	15.61
pH	7.31	7.17	7.15	7.14	7.14	7.14	7.14	7.14	7.14	7.14
Conductivity (mS/cm)	0.659	0.659	0.656	0.653	0.651	0.648	0.646	0.642	0.638	0.638
Dissolved Oxygen (mg/L)	0.00	0.00	0.00	0.28	0.63	0.87	1.06	1.05	1.10	1.00
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORP (mV)	-21	-27	-29	-32	-32	-34	-35	-38	-36	-34

JD 06/20/2017

Observations (water color, clarity, etc.): clear water

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

SAMPLE INFORMATION

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

Sample ID: MW-OB23-20170620
Start Time: 9:10
End Time: 9:13
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 2
Sampled By: JD

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

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

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
± 0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel:	Garett Crowe's	Well ID:	SG-7
Weather:	Sunny 70's	Date:	~~6/21~~ 6/20/2017
		Time In:	~~800~~ 810
		Time Out:	810

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 ~~2.5 feet~~ (GC) 1.25'	Measuring Point Marked:	Yes ☐	No ☐
Length of Water Column :	(feet)		Well Condition:	Good ☐	Poor ☐
Well Diameter:	(inches)	NA	Well Condition Comments:		

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	
Pumping Rate of Pump:	(mL/min)	
Total Volume Removed:	(mL or 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:	NA	Depth of Pump Intake:	NA
Evacuation Method:	Bailer ☒	Peristaltic ☐	Bladder ☐	Other ☐	
Tubing Used:	Teflon ☐	Polyethylene ☐	N/A ☒		
Water Quality Meter (type/Serial Number):	CP725269				
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	810
Rate (ml/min)	—
Depth to Water (ft. TOC)	—
Temperature (°C)	19.36
pH	6.44
Conductivity (mS/cm)	0.898
Dissolved Oxygen (mg/L)	5.43
Turbidity (NTU)	3.7
ORP (mV)	174

Observations (water color, clarity, etc.):

Grab sample

SAMPLE INFORMATION

Sample List:

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

Sample ID:	SG-7_20170620
Start Time:	800
End Time:	810
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:	

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

UNIT STABILITY

pH	DO/Turb.	Cond	ORP
± 0.1	± 10%	± 3%	± 10 mV

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event

Sampling Personnel: Garrett Crow

Weather: 70's Sunny

Well ID: SG-11

Date: 6/20/2017

Time In: 815

Time Out: 8:40

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)	NA
Length of Water Column :	(feet)	2.3
Well Diameter:	(inches)	NA

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)	
Pumping Rate of Pump:	(mL/min)	
Total Volume Removed:	(mL or 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: NA Depth of Pump Intake: NA

Evacuation Method: Bailer ☒ Peristaltic ☐ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☐

Water Quality Meter (type/Serial Number): CP725269

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	815														
Rate (ml/min)	—														
Depth to Water (ft. TOC)	—														
Temperature (°C)	20.17														
pH	7.01														
Conductivity (mS/cm)	0.41	6.0													
Dissolved Oxygen (mg/L)	~~0.01~~	5.31													
Turbidity (NTU)	0.0														
ORP (mV)	144														

SAMPLE INFORMATION

Sample List:

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

Sample ID: SG-11_20170620

Start Time: 815

End Time: 840

MS/MSD: Yes ☒ No ☐

Duplicate: Yes ☒ No ☐

Total Bottles: 2

Sampled By: GC

Duplicate ID: DUP2_20170620

Sample Time: ~~815~~ CC 840

Total Bottles: 2

Sampled By: GC

MS/MSD ID: SG-11_20170620

Sample Time: 840

Total Bottles: 2

Sampled By: GC

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%	± 3%	± 10 mV

Ashland - Glens Falls, NY
Daily Calibrations

Date: 6/19/17 Quarter/Year: 2nd 2017

Personnel: Garrett Crowe

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	8:20	Staff: Garrett Crowe	
Model:	U-52		Successful?
Meter Serial #:	5490 PTYW		
pH	4.01		✓
Conductivitiy	4.49		✓
Turbiduty	0.0		✓
DO	8.08		
Temperature			N/A

Time	8:24	Staff: Garrett Crowe	
Model:	U-52		Successful?
Meter Serial #:	6N72 5269		
pH	3.96		X
Conductivitiy	4.49		X
Turbiduty	0.0		X
DO	8.24		X
Temperature	—		N/A

Time	8:21	Staff: Paul Girofalco	
Model:	U-52		Successful?
Meter Serial #:	L380RJCG		
pH	4.01		✓
Conductivitiy	4.50		✓
Turbiduty	0.0		✓
DO	8.25		✓
Temperature			N/A

Auto cal C692328 Exp 11/30/2017

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

Time	8:23	Staff: Garrett Crowe	
Model:	U-52		Successful?
Meter Serial #:	15X W280		
pH	3.92		✓
Conductivitiy	4.46		✓
Turbiduty	1.8		✓
DO	7.58		✓
Temperature			N/A

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

Ashland - Glens Falls, NY
Daily Calibrations

Date: 6/20/17 Quarter/Year: 2nd 2017

Personnel: Garrett Crowe

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	708	Staff: Garrett Crowe	
Model:	U-52		Successful?
Meter Serial #:	549QPTYW		
pH	3.99		✓
Conductivitiy	4.49		✓
Turbiduty	0.0		✓
DO	8.53		✓
Temperature	~~A~~ 22.90		N/A

Time	7:11	Staff: Garrett Crowe	
Model:	U-52		Successful?
Meter Serial #:	L35URJSG		
pH	4.00		✓
Conductivitiy	4.49		✓
Turbiduty	0.8		✓
DO	8.77		✓
Temperature	~~22~~ 22.87		N/A

Time	7:13	Staff: Garrett Crowe	
Model:	U-52		Successful?
Meter Serial #:	X45XW26D		
pH	4.01		✓
Conductivitiy	4.44		✓
Turbiduty	0.3		✓
DO	8.96		✓
Temperature	22.81		N/A

Time	7:15	Staff: Garrett Crowe	
Model:	U-52		Successful?
Meter Serial #:	CP7252G9		
pH	4.0		✓
Conductivitiy	4.46		✓
Turbiduty	0.0		✓
DO	8.75		✓
Temperature	22.68		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

Ashland - Glens Falls, NY
Daily Calibrations

Date: 6/21/2017 Quarter/Year: Q2/2017

Personnel: Paul Girafalco

Auto Cal Solution C58531 Exp 6/30/2018

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 735	735	Staff: Paul Girafalco	
Model:	Horiba U52		Successful?
Meter Serial #:	GP7282G9		
pH	3.96		✓
Conductivitiy	4.47		✓
Turbiduty	0.0		✓
DO	8.79		✓
Temperature			N/A

Time	745	Staff: Paul Girafalco	
Model:	Horiba U52		Successful?
Meter Serial #:	SY90PTYW		
pH	3.99		✓
Conductivitiy	4.52		✓
Turbiduty	0.2		✓
DO	9.00		✓
Temperature	—		N/A

Time	756	Staff: Paul Girafalco	
Model:	Horiba U52		Successful?
Meter Serial #:	X15X W2L D		
pH	4.04		✓
Conductivitiy	4.48		✓
Turbiduty	0.0		✓
DO	8.77		✓
Temperature	—		N/A

Time	753	Staff: Paul Girafalco	
Model:	Horiba U52		Successful?
Meter Serial #:	L3SURJCG		
pH	4.00		✓
Conductivitiy	4.53		✓
Turbiduty	0.0		✓
DO	9.10		✓
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

Ashland - Glens Falls, NY

Sample Team Members: Katie Angel, Garrett Crowe, Paul Girafalco, Dan Baron, Joe Dalmuyo

QA/QC Tracking Sheet

Date	Time	Sample ID	Sample Type	Comments (i.e. Pump ID, or Parent Sample)
6/19/17	0910	EB-20170619	EB	peri pump # 4052 collected before sampling MW-0B20
6/20/17	0915	EB-20170620	EB	bladder pump # 14313, collected before AW-B18
6/20/17	0710	DUP1-20170620	DUP	taken at MW-0B21
6/20/17	0840	DUP2-20170620	DUP	taken at SG-11
6/20/17	0910	MW-0B21-20170620	MS/MSD	
6/20/17	0840	SG-11-20170620	MS/MSD	
6/20/17	1030	DUP3-20170620	DUP	taken at MW-36D
6/20/17	1057	AW-B18-20170620	MS/MSD	
6/21/17	0925	EB-20170621	EB	bladder pump # 14312, collect after AW-A15 (sampled 6/20) collected before AW-B20
6/21/17	1043	DUP-20170621	DUP	taken at EW-B5
6/22/17	0955	AW-B11-20170622	MS/MSD	
6/22/17	1230	EB-20170622	EB	peri pump # 4052, collected after MW-0B31, collected before MW-0B32
6/22/17	1135	SW-03-20170622	MS/MSD	
6/22/17	1135	DUP-20170622	DUP	dup collected at SW-03

Sample Types:

EB - Equipment blank Record wells sampled directly before and after blank collection and equipment blank collected from

DUP - Duplicate sample. Record sample location where duplicate collected

MS/MSD - Matrix spike, Record sample location where collected

Other - record details of sample and where and why collected

ATTACHMENT 2
Laboratory Analytical Reports

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: 480-119835-1
Client Project/Site: Hercules Glens Falls O&M 2017

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
6/23/2017 4:08:12 PM

Eddie Barnett, Project Manager I
(912)354-7858
eddie.barnett@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-119835-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
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.
F1	MS and/or MSD Recovery is outside acceptance limits.

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: 480-119835-1

Laboratory: TestAmerica Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls O&M 2017

Report Number: 480-119835-1

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 06/21/2017; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0º C and 1.1º C.

TOTAL CYANIDE

Samples EB_20170619 (480-119835-1), MW-OB17_20170619 (480-119835-2), MW-OB20_20170619 (480-119835-3), MW-OB19_20170620 (480-119835-4), SG-7_20170620 (480-119835-5), MW-OB23_20170620 (480-119835-6), MW-OB21_20170620 (480-119835-7), DUP1_20170620 (480-119835-8), SG-11_20170620 (480-119835-9) and DUP2_20170620 (480-119835-10) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 06/23/2017.

Cyanide, Total recovered high for the MS of sample MW-OB21_20170620 MS (480-119835-7) in batch 680-485351. Cyanide, Total recovered high for the MSD of sample MW-OB21_20170620 MSD (480-119835-7) in batch 680-485351. Refer to the QC report for details.

Samples MW-OB19_20170620 (480-119835-4)[5X] and MW-OB23_20170620 (480-119835-6)[100X] 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 O&M 2017

TestAmerica Job ID: 480-119835-1

Client Sample ID: EB_20170619 — Lab Sample ID: 480-119835-1

No Detections.

Client Sample ID: MW-OB17_20170619 — Lab Sample ID: 480-119835-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.070		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: MW-OB20_20170619 — Lab Sample ID: 480-119835-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.051		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: MW-OB19_20170620 — Lab Sample ID: 480-119835-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.25		0.050	0.013	mg/L	5		9012B	Total/NA

Client Sample ID: SG-7_20170620 — Lab Sample ID: 480-119835-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.0079	J	0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: MW-OB23_20170620 — Lab Sample ID: 480-119835-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	1.4		1.0	0.25	mg/L	100		9012B	Total/NA

Client Sample ID: MW-OB21_20170620 — Lab Sample ID: 480-119835-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.085	F1	0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: DUP1_20170620 — Lab Sample ID: 480-119835-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.11		0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: SG-11_20170620 — Lab Sample ID: 480-119835-9

No Detections.

Client Sample ID: DUP2_20170620 — Lab Sample ID: 480-119835-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: EB_20170619
Lab Sample ID: 480-119835-1
Date Collected: 06/19/17 09:10
Matrix: Water
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/23/17 06:30	06/23/17 11:48	1

Client Sample ID: MW-OB17_20170619
Lab Sample ID: 480-119835-2
Date Collected: 06/19/17 11:51
Matrix: Water
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.070		0.010	0.0025	mg/L		06/23/17 06:30	06/23/17 11:50	1

Client Sample ID: MW-OB20_20170619
Lab Sample ID: 480-119835-3
Date Collected: 06/19/17 12:33
Matrix: Water
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.051		0.010	0.0025	mg/L		06/23/17 06:30	06/23/17 11:51	1

Client Sample ID: MW-OB19_20170620
Lab Sample ID: 480-119835-4
Date Collected: 06/20/17 07:29
Matrix: Water
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.25		0.050	0.013	mg/L		06/23/17 06:30	06/23/17 12:14	5

Client Sample ID: SG-7_20170620
Lab Sample ID: 480-119835-5
Date Collected: 06/20/17 08:10
Matrix: Water
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0079	J	0.010	0.0025	mg/L		06/23/17 06:30	06/23/17 11:53	1

Client Sample ID: MW-OB23_20170620
Lab Sample ID: 480-119835-6
Date Collected: 06/20/17 09:13
Matrix: Water
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	1.4		1.0	0.25	mg/L		06/23/17 06:30	06/23/17 12:16	100

Client Sample ID: MW-OB21_20170620
Lab Sample ID: 480-119835-7
Date Collected: 06/20/17 09:00
Matrix: Water
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.085	F1	0.010	0.0025	mg/L		06/23/17 06:30	06/23/17 11:55	1

Client Sample Results

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-119835-1

Client Sample ID: DUP1_20170620

Lab Sample ID: 480-119835-8
Matrix: Water
Date Collected: 06/20/17 00:00
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.11		0.010	0.0025	mg/L		06/23/17 06:30	06/23/17 12:00	1

Client Sample ID: SG-11_20170620

Lab Sample ID: 480-119835-9
Matrix: Water
Date Collected: 06/20/17 08:40
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/23/17 06:30	06/23/17 12:02	1

Client Sample ID: DUP2_20170620

Lab Sample ID: 480-119835-10
Matrix: Water
Date Collected: 06/20/17 00:00
Date Received: 06/21/17 01:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/23/17 06:30	06/23/17 12:05	1

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 680-485229/1-A
Matrix: Water
Analysis Batch: 485351

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 485229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/23/17 06:30	06/23/17 11:42	1

Lab Sample ID: LCS 680-485229/2-A
Matrix: Water
Analysis Batch: 485351

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 485229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0524		mg/L		105	85 - 115

Lab Sample ID: 480-119835-7 MS
Matrix: Water
Analysis Batch: 485351

Client Sample ID: MW-OB21_20170620
Prep Type: Total/NA
Prep Batch: 485229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.085	F1	0.0500	0.144	F1	mg/L		117	85 - 115

Lab Sample ID: 480-119835-7 MSD
Matrix: Water
Analysis Batch: 485351

Client Sample ID: MW-OB21_20170620
Prep Type: Total/NA
Prep Batch: 485229

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.085	F1	0.0500	0.150	F1	mg/L		130	85 - 115	4	20

Lab Sample ID: 480-119835-9 MS
Matrix: Water
Analysis Batch: 485351

Client Sample ID: SG-11_20170620
Prep Type: Total/NA
Prep Batch: 485229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.010	U	0.0500	0.0530		mg/L		106	85 - 115

Lab Sample ID: 480-119835-9 MSD
Matrix: Water
Analysis Batch: 485351

Client Sample ID: SG-11_20170620
Prep Type: Total/NA
Prep Batch: 485229

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.010	U	0.0500	0.0541		mg/L		108	85 - 115	2	20

QC Association Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-119835-1

General Chemistry

Prep Batch: 485229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-119835-1	EB_20170619	Total/NA	Water	9012B	
480-119835-2	MW-OB17_20170619	Total/NA	Water	9012B	
480-119835-3	MW-OB20_20170619	Total/NA	Water	9012B	
480-119835-4	MW-OB19_20170620	Total/NA	Water	9012B	
480-119835-5	SG-7_20170620	Total/NA	Water	9012B	
480-119835-6	MW-OB23_20170620	Total/NA	Water	9012B	
480-119835-7	MW-OB21_20170620	Total/NA	Water	9012B	
480-119835-8	DUP1_20170620	Total/NA	Water	9012B	
480-119835-9	SG-11_20170620	Total/NA	Water	9012B	
480-119835-10	DUP2_20170620	Total/NA	Water	9012B	
MB 680-485229/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-485229/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-119835-7 MS	MW-OB21_20170620	Total/NA	Water	9012B	
480-119835-7 MSD	MW-OB21_20170620	Total/NA	Water	9012B	
480-119835-9 MS	SG-11_20170620	Total/NA	Water	9012B	
480-119835-9 MSD	SG-11_20170620	Total/NA	Water	9012B	

Analysis Batch: 485351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-119835-1	EB_20170619	Total/NA	Water	9012B	485229
480-119835-2	MW-OB17_20170619	Total/NA	Water	9012B	485229
480-119835-3	MW-OB20_20170619	Total/NA	Water	9012B	485229
480-119835-4	MW-OB19_20170620	Total/NA	Water	9012B	485229
480-119835-5	SG-7_20170620	Total/NA	Water	9012B	485229
480-119835-6	MW-OB23_20170620	Total/NA	Water	9012B	485229
480-119835-7	MW-OB21_20170620	Total/NA	Water	9012B	485229
480-119835-8	DUP1_20170620	Total/NA	Water	9012B	485229
480-119835-9	SG-11_20170620	Total/NA	Water	9012B	485229
480-119835-10	DUP2_20170620	Total/NA	Water	9012B	485229
MB 680-485229/1-A	Method Blank	Total/NA	Water	9012B	485229
LCS 680-485229/2-A	Lab Control Sample	Total/NA	Water	9012B	485229
480-119835-7 MS	MW-OB21_20170620	Total/NA	Water	9012B	485229
480-119835-7 MSD	MW-OB21_20170620	Total/NA	Water	9012B	485229
480-119835-9 MS	SG-11_20170620	Total/NA	Water	9012B	485229
480-119835-9 MSD	SG-11_20170620	Total/NA	Water	9012B	485229

Lab Chronicle

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-119835-1

Client Sample ID: EB_20170619
Date Collected: 06/19/17 09:10
Date Received: 06/21/17 01:45

Lab Sample ID: 480-119835-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	485351	06/23/17 11:48	DAM	TAL SAV

Client Sample ID: MW-OB17_20170619
Date Collected: 06/19/17 11:51
Date Received: 06/21/17 01:45

Lab Sample ID: 480-119835-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	485351	06/23/17 11:50	DAM	TAL SAV

Client Sample ID: MW-OB20_20170619
Date Collected: 06/19/17 12:33
Date Received: 06/21/17 01:45

Lab Sample ID: 480-119835-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	485351	06/23/17 11:51	DAM	TAL SAV

Client Sample ID: MW-OB19_20170620
Date Collected: 06/20/17 07:29
Date Received: 06/21/17 01:45

Lab Sample ID: 480-119835-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		5	485351	06/23/17 12:14	DAM	TAL SAV

Client Sample ID: SG-7_20170620
Date Collected: 06/20/17 08:10
Date Received: 06/21/17 01:45

Lab Sample ID: 480-119835-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	485351	06/23/17 11:53	DAM	TAL SAV

Client Sample ID: MW-OB23_20170620
Date Collected: 06/20/17 09:13
Date Received: 06/21/17 01:45

Lab Sample ID: 480-119835-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		100	485351	06/23/17 12:16	DAM	TAL SAV

Lab Chronicle

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-119835-1

Client Sample ID: MW-OB21_20170620

Lab Sample ID: 480-119835-7

Date Collected: 06/20/17 09:00
Matrix: Water
Date Received: 06/21/17 01:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	485351	06/23/17 11:55	DAM	TAL SAV

Client Sample ID: DUP1_20170620

Lab Sample ID: 480-119835-8

Date Collected: 06/20/17 00:00
Matrix: Water
Date Received: 06/21/17 01:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	485351	06/23/17 12:00	DAM	TAL SAV

Client Sample ID: SG-11_20170620

Lab Sample ID: 480-119835-9

Date Collected: 06/20/17 08:40
Matrix: Water
Date Received: 06/21/17 01:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	485351	06/23/17 12:02	DAM	TAL SAV

Client Sample ID: DUP2_20170620

Lab Sample ID: 480-119835-10

Date Collected: 06/20/17 00:00
Matrix: Water
Date Received: 06/21/17 01:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			485229	06/23/17 06:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	485351	06/23/17 12:05	DAM	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-119835-1

Laboratory: TestAmerica Buffalo

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
Arkansas DEQ	State Program	6	88-0686	07-06-17 *
California	State Program	9	1169CA	09-30-17
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-17 *
Georgia	State Program	4	10026 (NY)	03-31-18
Georgia	State Program	4	956	03-31-18
Illinois	NELAP	5	200003	09-30-17
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-18
Kentucky (DW)	State Program	4	90029	12-31-17
Kentucky (UST)	State Program	4	30	03-31-18
Kentucky (WW)	State Program	4	90029	12-31-17
Louisiana	NELAP	6	02031	06-30-17 *
Maine	State Program	1	NY00044	12-04-18
Maryland	State Program	3	294	03-31-18
Massachusetts	State Program	1	M-NY044	06-30-17 *
Michigan	State Program	5	9937	04-01-09 *
Minnesota	NELAP	5	036-999-337	12-31-17
New Hampshire	NELAP	1	2337	11-17-17
New Jersey	NELAP	2	NY455	06-30-17 *
New York	NELAP	2	10026	03-31-18
North Dakota	State Program	8	R-176	03-31-18
Oklahoma	State Program	6	9421	08-31-17
Oregon	NELAP	10	NY200003	06-09-18
Pennsylvania	NELAP	3	68-00281	07-31-17 *
Rhode Island	State Program	1	LAO00328	12-30-17
Tennessee	State Program	4	TN02970	03-31-18
Texas	NELAP	6	T104704412-15-6	07-31-17 *
USDA	Federal		P330-11-00386	11-26-17
Virginia	NELAP	3	460185	09-14-17
Washington	State Program	10	C784	02-10-18
Wisconsin	State Program	5	998310390	08-31-17

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	06-30-17 *
Alaska (UST)	State Program	10	UST-104	11-05-17
Arizona	State Program	9	AZ808	12-14-17
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-17 *
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-17 *
Florida	NELAP	4	E87052	06-30-17 *
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	N/A	06-30-17 *
Georgia	State Program	4	803	06-30-17 *
Guam	State Program	9	15-005r	04-16-17 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Ashland LLC
TestAmerica Job ID: 480-119835-1
Project/Site: Hercules Glens Falls O&M 2017

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
Hawaii	State Program	9	N/A	06-30-17 *
Illinois	NELAP	5	200022	11-30-17
Indiana	State Program	5	N/A	06-30-17 *
Iowa	State Program	7	353	06-30-17 *
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-17 *
Kentucky (WW)	State Program	4	90084	12-31-17
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-17 *
Louisiana (DW)	NELAP	6	LA160019	12-31-17
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-17 *
Michigan	State Program	5	9925	06-30-17 *
Mississippi	State Program	4	N/A	06-30-17 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-17 *
New Jersey	NELAP	2	GA769	06-30-17 *
New Mexico	State Program	6	N/A	06-30-17 *
New York	NELAP	2	10842	03-31-18
North Carolina (DW)	State Program	4	13701	07-31-17 *
North Carolina (WW/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-17
Pennsylvania	NELAP	3	68-00474	06-30-17 *
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-17 *
Tennessee	State Program	4	TN02961	06-30-17 *
Texas	NELAP	6	T104704185-16-9	11-30-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		SAV 3-04	06-14-20 *
Virginia	NELAP	3	460161	06-14-17 *
Washington	State Program	10	C805	06-10-17 *
West Virginia (DW)	State Program	3	9950C	12-31-17
Wisconsin	State Program	5	999819810	08-31-17
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-119835-1

Method	Method Description	Protocol	Laboratory
9012B	Cyanide, Total andor Amenable	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 SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-119835-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-119835-1	EB_20170619	Water	06/19/17 09:10	06/21/17 01:45
480-119835-2	MW-OB17_20170619	Water	06/19/17 11:51	06/21/17 01:45
480-119835-3	MW-OB20_20170619	Water	06/19/17 12:33	06/21/17 01:45
480-119835-4	MW-OB19_20170620	Water	06/20/17 07:29	06/21/17 01:45
480-119835-5	SG-7_20170620	Water	06/20/17 08:10	06/21/17 01:45
480-119835-6	MW-OB23_20170620	Water	06/20/17 09:13	06/21/17 01:45
480-119835-7	MW-OB21_20170620	Water	06/20/17 09:00	06/21/17 01:45
480-119835-8	DUP1_20170620	Water	06/20/17 00:00	06/21/17 01:45
480-119835-9	SG-11_20170620	Water	06/20/17 08:40	06/21/17 01:45
480-119835-10	DUP2_20170620	Water	06/20/17 00:00	06/21/17 01:45

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

480501-Albany

Chain of Custody Record

TestAmerica

480-119835 COC

Client Information	Sampler: Katie Angel	Lab PM: Barnett, Eddie T	Carr:
Client Contact: Mr. Jim Vondracek	Phone: 518-859-4626	E-Mail: eddie.barnett@testamericainc.com	
Company: Ashland LLC			
Address: 5200 Blazer Parkway DS-4	Due Date Requested:		
City: Dublin	TAT Requested (days): Standard		
State, Zip: OH, 43017			
Phone: 614-790-6146(Tel)	PO #: 257496		
Email: jevondracek@ashland.com cassie.fenter@tas-support.com	WO #:		
Project Name: Hercules Glens Falls O&M 2017	Project #: 68000956		
Site: Ashland Glens Falls	SSOW#:		

COC No: 680-84346-34238.1
Page: Page 1 of
Job #:

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=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent (Field Filtered)	6020A - Dissolved Chromium and Vanadium (Field Filtered)	2540C_Calcd - Total Dissolved Solids (Field Filtered)	2340C - Hardness as calcium carbonate	8260C - (MOD) TCL list OLM04.2	Total Number of containers	Special Instructions/Note:
Preservation Code:						B	N	D	N	D	A		
EB_20170619	6/19/17	0910	G	Water	N	X						1	EB_20170619 run as equipment blank
MW-0B17_20170619	6/19/17	1151	G	Water	N	X						1	
MW-0B20_20170619	6/19/17	1233	G	Water	N	X						1	
MW-0B19_20170620	6/20/17	0729	G	Water	N	X						1	Extra bottles to be run for MS/MSD
SG-7_20170620	6/20/17	0810	G	Water	N	X						1	
MW-0B23_20170620	6/20/17	0913	G	Water	N	X						1	
MW-0B21_20170620	6/20/17	0900	G	Water	N	X						2	
DUP1_20170620	6/20/17	—	G	Water	N	X						1	
SG-11_20170620	6/20/17	0840	G	Water	N	X						2	MS/MSD-yes
DUP2_20170620	6/20/17	—	G	Water	N	X						1	
				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: 6/20/17 15:40	Company: Antea Group	Received by:	Date/Time: 6/20/17 1542	Company: Antea Group
Relinquished by:	Date/Time: 6/20/17 16:50	Company: Antea Group	Received by:	Date/Time: 6-20-17 1650	Company: TA
Relinquished by:	Date/Time: 6-20-17 1800	Company: TA	Received by:	Date/Time: 6/21/17 0145	Company: TAS

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.0 c / 1.1 c

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: 480-35621.1
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):		Job #: 480-119835-1
Address: 5102 LaRoche Avenue, ,	Due Date Requested: 7/3/2017	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 #:			Other:
Email:	WO #:			
Project Name: Hercules Glens Falls O&M 2017	Project #: 68000956			
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_20170619 (480-119835-1)	6/19/17	09:10 Eastern		Water			X	1	
MW-OB17_20170619 (480-119835-2)	6/19/17	11:51 Eastern		Water			X	1	
MW-OB20_20170619 (480-119835-3)	6/19/17	12:33 Eastern		Water			X	1	
MW-OB19_20170620 (480-119835-4)	6/20/17	07:29 Eastern		Water			X	1	
SG-7_20170620 (480-119835-5)	6/20/17	08:10 Eastern		Water			X	1	
MW-OB23_20170620 (480-119835-6)	6/20/17	09:13 Eastern		Water			X	1	
MW-OB21_20170620 (480-119835-7)	6/20/17	09:00 Eastern		Water			X	1	
MW-OB21_20170620 (480-119835-7MS)	6/20/17	09:00 Eastern	MS	Water			X	1	MS/MSD SHARED CONTAINER
MW-OB21_20170620 (480-119835-7MSD)	6/20/17	09:00 Eastern	MSD	Water			X	1	MS/MSD SHARED CONTAINER

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
1	[signature]	6/21/17 1600	TAB	[signature]	6/22/17 0945	TASAV
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

(0.7CC+05)1.2

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6/23/2017

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: 480-35621.2
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):		Job #: 480-119835-1
Address: 5102 LaRoche Avenue, ,	Due Date Requested: 7/3/2017			
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 2017	Project #: 68000956			
Site:	SSOW#:			

Analysis Requested

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:						
DUP1_20170620 (480-119835-8)	6/20/17	Eastern		Water			X	1	
SG-11_20170620 (480-119835-9)	6/20/17	08:40 Eastern		Water			X	1	
SG-11_20170620 (480-119835-9MS)	6/20/17	08:40 Eastern	MS	Water			X	1	MS/MSD SHARED CONTAINER
SG-11_20170620 (480-119835-9MSD)	6/20/17	08:40 Eastern	MSD	Water			X	1	MS/MSD SHARED CONTAINER
DUP2_20170620 (480-119835-10)	6/20/17	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. 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	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	6/21/17 1600	TAL	[signature]	6/21/17 0945	TAL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	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:

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-119835-1

Login Number: 119835
List Number: 2
Creator: Williams, Christopher S

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.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-119835-1

Login Number: 119835
List Number: 3
Creator: Edwards, Jessica R

List Source: TestAmerica Savannah
List Creation: 06/22/17 11:26 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

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: 480-120020-1
Client Project/Site: Hercules Glens Falls O&M 2017

For:
Ashland LLC
5200 Blazer Parkway
DS-4
Dublin, Ohio 43017

Attn: Mr. Jim Vondracek

Authorized for release by:
7/5/2017 3:08:41 PM

Eddie Barnett, Project Manager I
(912)354-7858
eddie.barnett@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-120020-1

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: 480-120020-1

Laboratory: TestAmerica Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls O&M 2017

Report Number: 480-120020-1

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 06/23/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 0.8º C.

TOTAL CYANIDE

Sample MW-OB18_20170621 (480-120020-1) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 07/05/2017.

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 O&M 2017

TestAmerica Job ID: 480-120020-1

Client Sample ID: MW-OB18_20170621

Lab Sample ID: 480-120020-1

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

This Detection Summary does not include radiochemical test results.

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-120020-1

Client Sample ID: MW-OB18_20170621
Date Collected: 06/21/17 07:55
Date Received: 06/23/17 01:45

Lab Sample ID: 480-120020-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.093		0.010	0.0025	mg/L		07/05/17 07:00	07/05/17 11:33	1

QC Sample Results

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-120020-1

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 680-486585/1-A
Matrix: Water
Analysis Batch: 486696

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 486585

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		07/05/17 07:00	07/05/17 11:10	1

Lab Sample ID: LCS 680-486585/2-A
Matrix: Water
Analysis Batch: 486696

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 486585

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0509		mg/L		102	85 - 115

QC Association Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-120020-1

General Chemistry

Prep Batch: 486585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120020-1	MW-OB18_20170621	Total/NA	Water	9012B	
MB 680-486585/1-A	Method Blank	Total/NA	Water	9012B	
LCS 680-486585/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 486696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-120020-1	MW-OB18_20170621	Total/NA	Water	9012B	486585
MB 680-486585/1-A	Method Blank	Total/NA	Water	9012B	486585
LCS 680-486585/2-A	Lab Control Sample	Total/NA	Water	9012B	486585

Lab Chronicle

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-120020-1

Client Sample ID: MW-OB18_20170621
Date Collected: 06/21/17 07:55
Date Received: 06/23/17 01:45

Lab Sample ID: 480-120020-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			486585	07/05/17 07:00	DAM	TAL SAV
Total/NA	Analysis	9012B		1	486696	07/05/17 11:33	DAM	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-120020-1

Laboratory: TestAmerica Buffalo

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
Arkansas DEQ	State Program	6	88-0686	07-06-17 *
California	State Program	9	1169CA	09-30-17
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-17 *
Georgia	State Program	4	10026 (NY)	03-31-18
Georgia	State Program	4	956	03-31-18
Illinois	NELAP	5	200003	09-30-17
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-18
Kentucky (DW)	State Program	4	90029	12-31-17
Kentucky (UST)	State Program	4	30	03-31-18
Kentucky (WW)	State Program	4	90029	12-31-17
Louisiana	NELAP	6	02031	06-30-18
Maine	State Program	1	NY00044	12-04-18
Maryland	State Program	3	294	03-31-18
Massachusetts	State Program	1	M-NY044	06-30-17 *
Michigan	State Program	5	9937	04-01-09 *
Minnesota	NELAP	5	036-999-337	12-31-17
New Hampshire	NELAP	1	2337	11-17-17
New Jersey	NELAP	2	NY455	06-30-18
New York	NELAP	2	10026	03-31-18
North Dakota	State Program	8	R-176	03-31-18
Oklahoma	State Program	6	9421	08-31-17
Oregon	NELAP	10	NY200003	06-09-18
Pennsylvania	NELAP	3	68-00281	07-31-17 *
Rhode Island	State Program	1	LAO00328	12-30-17
Tennessee	State Program	4	TN02970	03-31-18
Texas	NELAP	6	T104704412-15-6	07-31-17 *
USDA	Federal		P330-11-00386	11-26-17
Virginia	NELAP	3	460185	09-14-17
Washington	State Program	10	C784	02-10-18
Wisconsin	State Program	5	998310390	08-31-17

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	07-31-17 *
Alaska	State Program	10		06-30-18
Alaska (UST)	State Program	10	UST-104	11-05-17
Arizona	State Program	9	AZ808	12-14-17
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-17 *
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-17 *
Florida	NELAP	4	E87052	06-30-18
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	N/A	06-30-17 *
Georgia	State Program	4	803	06-30-17 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Client: Ashland LLC
TestAmerica Job ID: 480-120020-1
Project/Site: Hercules Glens Falls O&M 2017

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
Guam	State Program	9	15-005r	04-16-17 *
Hawaii	State Program	9	N/A	06-30-17 *
Illinois	NELAP	5	200022	11-30-17
Indiana	State Program	5	N/A	06-30-17 *
Iowa	State Program	7	353	06-30-17 *
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-17 *
Kentucky (WW)	State Program	4	90084	12-31-17
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-17 *
Louisiana (DW)	NELAP	6	LA160019	12-31-17
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-18
Michigan	State Program	5	9925	06-30-17 *
Mississippi	State Program	4	N/A	06-30-17 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-17 *
New Jersey	NELAP	2	GA769	06-30-17 *
New Mexico	State Program	6	N/A	06-30-17 *
New York	NELAP	2	10842	03-31-18
North Carolina (DW)	State Program	4	13701	07-31-17 *
North Carolina (WW/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-17 *
Pennsylvania	NELAP	3	68-00474	06-30-17 *
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-17 *
Tennessee	State Program	4	TN02961	06-30-17 *
Texas	NELAP	6	T104704185-16-9	11-30-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		SAV 3-04	06-14-20 *
Virginia	NELAP	3	460161	06-14-17 *
Washington	State Program	10	C805	06-10-17 *
West Virginia (DW)	State Program	3	9950C	12-31-17
Wisconsin	State Program	5	999819810	08-31-17 *
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-120020-1

Method	Method Description	Protocol	Laboratory
9012B	Cyanide, Total andor Amenable	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 SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Ashland LLC
Project/Site: Hercules Glens Falls O&M 2017

TestAmerica Job ID: 480-120020-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-120020-1	MW-OB18_20170621	Water	06/21/17 07:55	06/23/17 01:45

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

480501-Albany

Chain of Custody Record

TestAmerica

480-120020 COC

Client Information	Sampler: Katie Angel	Lab PM: Barnett, Eddie T	COC No: 680-84346-34238.6
Client Contact: Mr. Jim Vondracek	Phone: 518-859-4626	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): Standard		
State, Zip: OH, 43017			
Phone: 614-790-6146(Tel)	PO #: 257496		
Email: jevondracek@ashland.com cassie.reuter@shg-support.com	WO #:		
Project Name: Hercules Glens Falls O&M 2017	Project #: 68000956		
Site: Ashland Glens Falls	SSOW#:		

Analysis Requested

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	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)	9012B - Cyanide, Total	7196A - Chromium, hexavalent	6020A - Dissolved Chromium	2540C_Calcd - Total Dissolved Solids	2340C - Hardness as calcium carbonate	8260C - (MOD) TCL list OLM04.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	B	N	D	N	D	A	X	
MW-OB18_20170621	6/21/17	0755	G	Water	N	N	X						1	
				Water										
				Water										
				Water										
				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: 0.8c

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/22/17 1517	Antea Group		6/22/17 1517	Antea Group
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	06/22/17 1634	Antea Group		6-22-17 1634	TA
Relinquished by: Tim Knollmyer	Date/Time: 6-22-17 1800	Company TA	Received by:	Date/Time: 6-23-17 0145	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

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7/5/2017

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: 480-35686.1
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):		Job #: 480-120020-1
Address: 5102 LaRoche Avenue,	Due Date Requested: 7/6/2017	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 #:			Other:
Email:	WO #:			
Project Name: Hercules Glens Falls O&M 2017	Project #: 68000956			
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/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-OB18_20170621 (480-120020-1)	6/21/17	07:55 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]	6/23/17 1600	TAB	[signature]	6/24/17 0910	TALA
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:
		2.2 (CF) -5) 3.8

7/5/2017

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-120020-1

Login Number: 120020
List Number: 2
Creator: Williams, Christopher S

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.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ashland LLC

Job Number: 480-120020-1

Login Number: 120020
List Number: 3
Creator: Edwards, Jessica R

List Source: TestAmerica Savannah
List Creation: 06/24/17 11:03 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	

06-Jul-2017

Cassie Reuter
EHS Support LLC
316 Grandview Ave
Argyle, WI 53504

Re: **Ashland Glens Falls, NY** Work Order: **17061495**

Dear Cassie,

ALS Environmental received 11 samples on 24-Jun-2017 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental 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 13.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager

Certificate No: MN 998501

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group, USA

Date: 06-Jul-17

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: **17061495**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
17061495-01	EB_20170619	Water		06/19/17 09:10	06/24/17 10:00	☐
17061495-02	MW-OB17_20170619	Water		06/19/17 11:51	06/24/17 10:00	☐
17061495-03	MW-OB20_20170619	Water		06/19/17 12:33	06/24/17 10:00	☐
17061495-04	MW-OB19_20170620	Water		06/20/17 07:29	06/24/17 10:00	☐
17061495-05	SG-7_20170620	Water		06/20/17 08:10	06/24/17 10:00	☐
17061495-06	SG-11_20170620	Water		06/20/17 08:40	06/24/17 10:00	☐
17061495-07	MW-OB21_20170620	Water		06/20/17 09:00	06/24/17 10:00	☐
17061495-08	MW-OB23_20170620	Water		06/20/17 09:13	06/24/17 10:00	☐
17061495-09	DUP1_20170620	Water		06/20/17	06/24/17 10:00	☐
17061495-10	DUP2_20170620	Water		06/20/17	06/24/17 10:00	☐
17061495-11	MW-OB18_20170621	Water		06/21/17 07:55	06/24/17 10:00	☐

ALS Group, USA

Date: 06-Jul-17

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
WorkOrder: **17061495**

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
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: 06-Jul-17

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 17061495

Case Narrative

Samples for the above noted Work Order were received on 06/24/17. 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.

ALS Group, USA

Date: *06-Jul-17*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY

Work Order: 17061495

Lab ID: 17061495-01A
Client Sample ID: EB_20170619
Collection Date: 06/19/17 9:10:00 AM
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	06/27/17 03:15 PM

Lab ID: 17061495-02A
Client Sample ID: MW-OB17_20170619
Collection Date: 06/19/17 11:51:00 AM
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	06/27/17 03:15 PM

Lab ID: 17061495-03A
Client Sample ID: MW-OB20_20170619
Collection Date: 06/19/17 12:33:00 PM
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	06/27/17 03:15 PM

Lab ID: 17061495-04A
Client Sample ID: MW-OB19_20170620
Collection Date: 06/20/17 7:29:00 AM
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	06/27/17 03:15 PM

Lab ID: 17061495-05A
Client Sample ID: SG-7_20170620
Collection Date: 06/20/17 8:10:00 AM
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	06/27/17 03:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: EHS Support LLC **Work Order:** 17061495
Project: Ashland Glens Falls, NY

Lab ID: 17061495-06A **Collection Date:** 06/20/17 8:40:00 AM
Client Sample ID: SG-11_20170620 **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	06/27/17 03:15 PM

Lab ID: 17061495-07A **Collection Date:** 06/20/17 9:00:00 AM
Client Sample ID: MW-OB21_20170620 **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	06/30/17 01:00 PM

Lab ID: 17061495-08A **Collection Date:** 06/20/17 9:13:00 AM
Client Sample ID: MW-OB23_20170620 **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	**8.4**		**2.0**	**µg/L**	1	06/27/17 03:15 PM

Lab ID: 17061495-09A **Collection Date:** 06/20/17
Client Sample ID: DUP1_20170620 **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	06/27/17 03:15 PM

Lab ID: 17061495-10A **Collection Date:** 06/20/17
Client Sample ID: DUP2_20170620 **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	06/27/17 03:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *06-Jul-17*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY

Work Order: 17061495

Lab ID: 17061495-11A
Client Sample ID: MW-OB18_20170621

Collection Date: 06/21/17 7:55:00 AM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	**3.2**		**2.0**	**µg/L**	1	06/30/17 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 06-Jul-17

Client: EHS Support LLC

QC BATCH REPORT

Work Order: 17061495

Project: Ashland Glens Falls, NY

Batch ID: **R214735** Instrument ID **FS3100** Method: **OIA 1677**

MBLK	Sample ID: **MB-R214735-R214735**				Units: **µg/L**			Analysis Date: **06/27/17 03:15 PM**			
Client ID:	Run ID: **FS3100_170627C**			SeqNo: **4503754**		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-R214735-R214735**				Units: **µg/L**			Analysis Date: **06/27/17 03:15 PM**			
Client ID:	Run ID: **FS3100_170627C**			SeqNo: **4503755**		Prep Date:		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	49.97	2.0	50	0	99.9	82-132	0			

MS	Sample ID: **17061495-06AMS**				Units: **µg/L**			Analysis Date: **06/27/17 03:15 PM**			
Client ID: **SG-11_20170620**	Run ID: **FS3100_170627C**			SeqNo: **4503763**		Prep Date:		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	55.69	2.0	50	0.59	110	82-130	0			

MSD	Sample ID: **17061495-06AMSD**				Units: **µg/L**			Analysis Date: **06/27/17 03:15 PM**			
Client ID: **SG-11_20170620**	Run ID: **FS3100_170627C**			SeqNo: **4503764**		Prep Date:		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	56.09	2.0	50	0.59	111	82-130	55.69	0.716	11	

The following samples were analyzed in this batch:

17061495-01A	17061495-02A	17061495-03A
17061495-04A	17061495-05A	17061495-06A
17061495-08A	17061495-09A	17061495-10A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EHS Support LLC
Work Order: 17061495
Project: Ashland Glens Falls, NY

QC BATCH REPORT

Batch ID: **R215026** Instrument ID **FS3100** Method: **OIA 1677**

MBLK Sample ID: **MB-R215026-R215026** Units: **µg/L** Analysis Date: **06/30/17 01:00 PM**
Client ID: Run ID: **FS3100_170630B** SeqNo: **4511447** 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-R215026-R215026** Units: **µg/L** Analysis Date: **06/30/17 01:00 PM**
Client ID: Run ID: **FS3100_170630B** SeqNo: **4511448** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	48.48	2.0	50	0	97	82-132	0			

MS Sample ID: **17061495-07AMS** Units: **µg/L** Analysis Date: **06/30/17 01:00 PM**
Client ID: **MW-OB21_20170620** Run ID: **FS3100_170630B** SeqNo: **4511450** 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	0.95	103	82-130	0			

MSD Sample ID: **17061495-07AMSD** Units: **µg/L** Analysis Date: **06/30/17 01:00 PM**
Client ID: **MW-OB21_20170620** Run ID: **FS3100_170630B** SeqNo: **4511451** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	54.19	2.0	50	0.95	106	82-130	52.38	3.4	11	

The following samples were analyzed in this batch:

17061495-07A	17061495-11A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

COC ID: 43866

ALS Project Manager: TJS | ALS Work Order #: 1706149S

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Ashland Glens Falls	A	Free Cyanide
Work Order		Project Number		B	
Company Name	EHS Support LLC	Bill To Company	EHS Support LLC	C	
Send Report To	Cassie Reuter	Invoice Attn	Accounts Payable	D	
Address	316 Grandview Ave	Address	316 Grandview Ave	E	
				F	
City/State/Zip	Argyle, WI 53504	City/State/Zip	Argyle, WI 53504	G	
Phone	(608) 851-0626	Phone	(608) 851-0626	H	
Fax		Fax		I	
e-Mail Address	cassie.reuter@ehs-support.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	EB_20170619	6/19/17	0910	W	NaOH	1	X										
2	MW-0B17_20170619	6/19/17	1151	W	NaOH	1	X										
3	MW-0B20_20170619	6/19/17	1233	W	NaOH	1	X										
4	MW-0B19_20170620	6/20/17	0729	Water	NaOH	1	X										
5	SG-7_20170620	6/20/17	0810	water	NaOH	1	X										
6	SG-11_20170620	6/20/17	0840	water	NaOH	2	X										
7	MW-0B21_20170620	6/20/17	0900	water	NaOH	2	X										
8	MW-0B23_20170620	6/20/17	0913	water	NaOH	1	X										
9	DUP1_20170620	6/20/17	-	water	NaOH	1	X										
10	DUP2_20170620	6/20/17	-	water	NaOH	1	X										

Sampler(s) Please Print & Sign: Katie Angel

Shipment Method:

Turnaround Time in Business Days (BD): ☐ One BD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD ☐ Other Standard

Results Due Date:

Relinquished by: Date: 6/23/17 Time: 1415 Received by:

Relinquished by: Date: 6/23/17 Time: 17:00 Received by (Laboratory): 6/24/17 1000

Logged by (Laboratory): DES Date: 6/26/17 Time: 0900 Checked by (Laboratory): TJS

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

Notes: Run extra bottle for MS/MSD

Cooler ID	Cooler Temp
SR2	4.6°C
pH	

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

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.

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

COC ID: 43864

ALS Project Manager: TBS | ALS Work Order #: D0614 95

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Ashland Glens Falls	A	Free Cyanide
Work Order		Project Number		B	
Company Name	EHS Support LLC	Bill To Company	EHS Support LLC	C	
Send Report To	Cassie Reuter	Invoice Attn	Accounts Payable	D	
Address	316 Grandview Ave	Address	316 Grandview Ave	E	
				F	
City/State/Zip	Argyle, WI 53504	City/State/Zip	Argyle, WI 53504	G	
Phone	(608) 851-0626	Phone	(608) 851-0626	H	
Fax		Fax		I	
e-Mail Address	cassie.reuter@ehs-support.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-OB18-20170621	6/21/17	7:55	water	NaOH	1	X										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Katie Angel

Shipment Method:

Turnaround Time in Business Days (BD): ☒ 10 BD ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD ☐ Other

Results Due Date:

Relinquished by:	Date: 6/23/17	Time: 1415	Received by:	
Relinquished by:	Date: 6/23/17	Time: 17:00	Received by (Laboratory):	6/24/17 1000
Logged by (Laboratory): DES	Date: 6/26/17	Time: 0900	Checked by (Laboratory): TBS	

Notes:

Cooler ID	Cooler Temp
SR2	4.6°
pH7	

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

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.

ORIGIN ID:SCHA
SHIPPING
ALS ENVIRONMENTAL
23:A WALKER WAY
SECTION 2
ALBANY, NY 12205
UNITED STATES US

SHIP DATE: 23JUN17
ACTWGT: 25.60 LB
CAD: 526495/CAFE3012
DIMS: 16x16x15 IN

BILL RECIPIENT

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
3352 128TH AVENUE

HOLLAND MI 49424

(616) 399-6070 REF:

INV:
PO:
DEPT:

FedEx Express

2 of 2
MPS# 6470 8310 1147
Mstr# 6470 8310 1136

SATURDAY 12:00P
PRIORITY OVERNIGHT

0263 0201

XO HLMA

49424
MI-US GRR

SDR

FedEx Saturday Delivery

151987 REV 7/08 RRD

ALS Group, USA

Sample Receipt Checklist

Client Name: **EHS SUPPORT-ARGYLE** Date/Time Received: **24-Jun-17 10:00**

Work Order: **17061495** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 26-Jun-17 (Date) Reviewed by: Tom Bramish (eSignature) 26-Jun-17 (Date)

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):	4.6/4.6 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/26/2017 9:07:17 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:

ATTACHMENT 3
Data Usability Summary Report

HERCULES

Data Usability Summary Report
Groundwater and Surface Water Monitoring – June 2017
Pretreatment Plant Area
Former Ciba Geigy Facility
Queensbury, New York

Prepared by:

EHS Support
consider it done

July 2017

TABLE OF CONTENTS

1.0 DATA USABILITY ASSESSMENT

This report presents the results of validation of analytical data associated with aqueous samples collected in June 2017 from the Pretreatment Plant Area at the former Ciba Geigy facility in Queensbury, New York. Laboratory data packages for were provided to EHS Support LLC by ALS Environmental and TestAmerica Laboratories. The data were reviewed by Amy Coats, an EHS Support Project Chemist approved by the New York State Department of Environmental Conservation (NYSDEC) for data validation and generation of DUSRs in accordance with NYSDEC guidelines.

These Data Usability Summary Reports (DUSRs) were prepared for the laboratory reports listed in the table below. Details of the data review and usability summary for each set of validated data are presented in Sections 2 through 4 of this report.

DUSR Data Set	Laboratory Report	Analysis:	Analysis Performed by:
1	480-119835	General Chemistry	TestAmerica Laboratories, Inc., Buffalo, New York
2	480-120020	General Chemistry	TestAmerica Laboratories, Inc., Buffalo, New York
3	17061495	General Chemistry	ALS Environmental in Holland, MI

Samples were analyzed according to United States Environmental Protection Agency (USEPA) SW-846 Method 9012B and USEPA Method OIA 1677.

The data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Organic, 2008 and 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 Quality Control (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:

Validation Qualifiers

U The analyte was analyzed for, but was not detected above the reported quantitation limit.

UJ The analyte was analyzed for, 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.

Overall Data Evaluation and Usability

Data included in this data set were found to be usable in present form. Details regarding specific QC variances, impacts to associated data, and qualifiers applied to results are discussed in the following section of this report.

2.0 DUSR DATA SET 1

PRE-TREATMENT PLANT

Former Ciba Geigy Facility
Queensbury, New York

Sample Delivery Group (SDG): 480-119835
Analyses: General chemistry
Analyses performed by: TestAmerica, Savannah, Georgia
EHS Validation Report Number: 076
Review Level: DUSR
Report Date: June 28, 2017

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 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	Client Sample ID	Sample Matrix	Sample Collection Date	Cyanide Analysis
480-119835	480-119835-1	EB_20170619	Water	6/19/2017	X
480-119835	480-119835-2	MW-OB17_20170619	Water	6/19/2017	X
480-119835	480-119835-3	MW-OB20_20170619	Water	6/19/2017	X
480-119835	480-119835-4	MW-OB19_20170620	Water	6/20/2017	X
480-119835	480-119835-5	SG-7_20170620	Water	6/20/2017	X
480-119835	480-119835-6	MW-OB23_20170620	Water	6/20/2017	X
480-119835	480-119835-7	MW-OB21_20170620	Water	6/20/2017	X
480-119835	480-119835-8	DUP1_20170620	Water	6/20/2017	X
480-119835	480-119835-9	SG-11_20170620	Water	6/20/2017	X
480-119835	480-119835-10	DUP2_20170620	Water	6/20/2017	X

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:

Validation Qualifiers

U The analyte was analyzed for, 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 analyzed for, 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.

SAMPLE CUSTODY AND RECEIPT

All samples were received in good condition and properly preserved. There is a small difference (2 minutes) between the relinquished time and the received time on one line of the chain of custody. It is assumed that custody was maintained and that this difference reflects a clerical issue rather than a sample custody issue.

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.

GENERAL CHEMISTRY ANALYSIS

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

Acceptance criteria were met.

Calibration

Acceptance criteria were met:

- All ICV and CCV recoveries were within control limits.
- Calibration curves exhibited acceptable correlation coefficients.

Blanks

Acceptance criteria were met. One equipment blank was included in this SDG.

Laboratory Control Sample (LCS)

Acceptance criteria were met.

Laboratory duplicate analysis

NA: No laboratory duplicate analysis was performed on a sample in this SDG.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis

MS/MSD analysis was performed on samples 480-119835-7 and 480-119835-9. Matrix spike analyses associated with recoveries outside control limits are listed in the following table.

Sample ID	Analyte	Recovery
480-119835-7	Cyanide	MSD 130%R

As a consequence of this excursion, qualifiers were applied, as per the table below, to all samples of the same matrix in this SDG.

Recovery	Sample result	Qualification
MS percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS percent recovery <30%	Non-detect	UJ if PDS %R ≥ 75%
		R if PDS not performed or PDS %R < 75%
	Detect	J
MS percent recovery >125%	Non-detect	No Action
	Detect	J

For cyanide and other inorganic analyses in which the samples do undergo batch digestion or batch distillation, batch qualifications are applied in accordance with the National Functional Guidelines (NFG) for Inorganic Data Review (January 2010). The NFG addresses the topic of sample QC leading to batch qualification, stating that when matrix spike analyses do not meet criteria, qualifiers are applied to all the samples of the same matrix.

Field duplicates

Acceptance criteria were met. Two field duplicate samples were submitted with this SDG. Criteria used to evaluate field duplicates are presented in the following table.

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

Additional notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

3.0 DUSR DATA SET 2

PRE-TREATMENT PLANT

Former Ciba Geigy Facility
Queensbury, New York

Sample Delivery Group (SDG): 480-120020
Analyses: General Chemistry
Analyses performed by: TestAmerica, Savannah, Georgia
EHS Validation Report Number: 090
Review Level: DUSR
Report Date: July 24, 2017

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 Method 9012B for cyanide. The sample included in this Sample Delivery Group (SDG), and in this data validation report, is presented in the table below.

SDG	Lab Sample ID	Client Sample ID	Sample Matrix	Sample Collection Date	Cyanide Analysis
480-120020	480-120020-1	MW-OB18_20170621	Water	6/21/2017	X

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 if 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:

Validation Qualifiers

U The analyte was analyzed for, 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 analyzed for, 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.

SAMPLE CUSTODY AND RECEIPT

All samples were received in good condition and properly preserved. The chain of custody was properly completed.

ASSESSMENT SUMMARY AND DATA USABILITY

In this SDG, no QC (Quality Control) excursions were encountered that would lead to qualification or rejection of data. Overall QC associated with results reported in this SDG is considered acceptable. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

GENERAL CHEMISTRY ANALYSIS

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

Acceptance criteria were met.

Calibration

Acceptance criteria were met:

- All ICV and CCV recoveries were within control limits.
- Calibration curves exhibited acceptable correlation coefficients.

Blanks

Acceptance criteria were met.

Laboratory Control Sample (LCS)

Acceptance criteria were met.

Laboratory duplicate analysis

NA: No laboratory duplicate analysis was performed on a sample in this SDG.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis

NA: No matrix spike analysis was performed on a sample in this SDG.

Field duplicates

NA: No field duplicate sample was submitted with a sample in this SDG.

Additional notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

4.0 DUSR DATA SET 3

PRE-TREATMENT PLANT

Former Ciba Geigy Facility
Queensbury, New York

Sample Delivery Group (SDG): 17061495
Analysis: General Chemistry
Analyses performed by: ALS Environmental, Holland, Michigan
EHS Validation Report Number: 125
Review Level: DUSR
Report Date: July 23, 2017

SAMPLE SUMMARY

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Method OIA 1677. Samples included in this Sample Delivery Group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Client Sample ID	Sample Matrix	Sample Collection Date	Free Cyanide Analysis
17061495	17061495-01A	EB_20170619	Water	6/19/2017	X
17061495	17061495-02A	MW-OB17_20170619	Water	6/19/2017	X
17061495	17061495-03A	MW-OB20_20170619	Water	6/19/2017	X
17061495	17061495-04A	MW-OB19_20170620	Water	6/20/2017	X
17061495	17061495-05A	SG-7_20170620	Water	6/20/2017	X
17061495	17061495-06A	SG-11_20170620	Water	6/20/2017	X
17061495	17061495-07A	MW-OB21_20170620	Water	6/20/2017	X
17061495	17061495-08A	MW-OB23_20170620	Water	6/20/2017	X
17061495	17061495-09A	DUP1_20170620	Water	6/20/2017	X
17061495	17061495-10A	DUP2_20170620	Water	6/20/2017	X
17061495	17061495-11A	MW-OB18_20170621	Water	6/21/2017	X

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:

Validation Qualifiers

U The analyte was analyzed for, 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 analyzed for, 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.

SAMPLE CUSTODY AND RECEIPT

All samples were received in good condition and properly preserved. The chain of custody was properly completed.

ASSESSMENT SUMMARY AND DATA USABILITY

In this data set, no QC (Quality Control) excursions encountered led to qualification or rejection of data. Overall QC associated with results reported in this SDG is considered acceptable. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

GENERAL CHEMISTRY ANALYSIS

Preservation and holding times

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

Acceptance criteria were met.

Calibration

Acceptance criteria were met:

- All ICV and CCV recoveries were within control limits.
- Calibration curves exhibited acceptable correlation coefficients.

Blanks

Acceptance criteria were met.

Laboratory Control Sample (LCS)

All criteria were met.

Laboratory duplicate analysis

NA: No laboratory duplicate analysis was performed on a sample in this data set.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis

Acceptance criteria were met. MS/MSD analyses were performed on samples 17061495-06 and 17061495-07.

Field duplicates

Acceptance criteria were met. Two field duplicate samples were submitted with this data set; no detections were reported for any parent or duplicate samples.

Additional notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support