

November 30, 2018

Brian Jankauskas, P.E.

New York State Department of Environmental Conservation

Division of Environmental Remediation (DER), Remedial Bureau A
625 Broadway, 12<sup>th</sup> Floor

Albany, NY 12233-7015

**Subject:** 2018 Groundwater and Surface Water Monitoring Report

**Pretreatment Plant Area** 

Former Ciba-Geigy Facility, Glens Falls, New York EPA ID NYD002069748 / NYSDEC Site No.: 557011

Dear Mr. Jankauskas:

On behalf of Hercules Incorporated (previously acquired by Ashland LLC) and Ciba-Geigy Corporation ("CIBA") (previously acquired by BASF Corporation), EHS Support LLC ("EHS Support") is submitting this Groundwater and Surface Water Monitoring Report (GSMR) for the Pretreatment Plant (PTP) area at the former Ciba-Geigy pigments manufacturing facility located at 89 Lower Warren Street in Queensbury Township, near Glens Falls, NY.

Groundwater and surface water monitoring was conducted at the PTP (also referred to herein as the Site) in June 2018 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). As subsequently approved by the NYSDEC in October 2017, free cyanide was removed from the groundwater analytical program.<sup>1</sup>

Sampling was performed at the locations illustrated on **Figure 1**, following the sampling program presented in **Table 1**. A summary of the sampling activities, laboratory analysis, and results from the monitoring event is presented below. **Figure 1** has been updated to reflect the removal of the aboveground storage tank (tank T-110), which was previously located between MW-OB18 and MW-OB19. Tank T-110 and the former Pretreatment Plant Building were demolished and removed from the Site in March 2018, prior to this sampling event. The *AST & Pretreatment Plant Decommissioning and Demolition Report* was submitted to the NYSDEC on October 19, 2018 and approved on October 25, 2018.

# Water Level Gauging

On June 11, 2018, 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).

<sup>&</sup>lt;sup>1</sup> Phone Conversation - Brian Jankauskas at NYSDEC and Arlene Lillie at EHS Support LLC. October 25, 2017.



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 southerly 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 0.01 feet observed in well MW-OB20, and a maximum water column of 5.54 feet observed in well MW-OB17. These measurements were consistent with historical gauging data. Groundwater elevations and potentiometric surface lines based on the June 2018 monitoring data are illustrated on **Figure 2**.

## Groundwater and Surface Water Sampling and Analysis

Groundwater and surface water sampling were conducted between June 11 and June 13, 2018. Five wells (identified in **Table 1**) were purged and sampled using low-flow sampling methods (i.e., a peristaltic pump) as detailed in the GSMP. MW-OB20 was not sampled because there was insufficient water present (i.e., 0.01 feet).

Wells MW-OB17, MW-OB21 and the two surface water locations were sampled on June 11. Wells MW-OB18 and MW-OB19 purged dry on June 11 and were allowed to recharge overnight. Grab samples were collected from these two wells the next morning. Well MW-OB23 purged dry on June 11. Low-flow sampling was reattempted on June 13, and a sample was collected for analysis. 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 log forms. Barometric pressure was also recorded on the field logs. Copies of the field logs are included in **Attachment 1**. Final field parameter readings (prior to sampling) are summarized in **Table 3**.

Groundwater samples were collected for laboratory analysis using a peristaltic pump and pumped directly into sampling containers provided by the laboratory. Surface water samples were collected as grab samples using clean, laboratory-supplied bottles. Sample water quality parameters were measured in the field (same parameters as those measured for groundwater) and recorded on the field logs (Attachment 1).

Laboratory analysis was conducted by TestAmerica and ALS Holland laboratories with applicable New York State Department of Health Environmental Laboratory Approval Program certification for the analyses performed. Clean sample bottles were supplied by the laboratories with preservative. 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 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\_20180611)
- One duplicate surface water sample (from SG-11 DUP02\_20180611)
- 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\_20180611)

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 duplicate 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

Data review and validation were performed by Amy Coats, an EHS Support chemist approved by the NYSDEC for data validation and generation of Data Usability Summary Reports (DUSRs) in accordance with DER-10 guidelines.<sup>2</sup> The laboratory data was evaluated according to the quality assurance / quality control (QA/QC) requirements of the NYSDEC Analytical Services Protocols. The matrix spike recovery for total cyanide was outside of the control limit; therefore, total cyanide results were assigned J qualifiers (i.e., estimated results). The analytical data were deemed usable and technically defensible.

As approved in February 2018 by the NYSDEC for groundwater monitoring at this Site, a Tier II Validation Report was prepared rather than a Tier IV DUSR (as had been prepared for previous sampling rounds). <sup>3</sup> A copy of the Tier II Validation Report is included in **Attachment 3**.

# Groundwater and Surface Water Analysis Results

The groundwater and surface water analytical results are provided in **Table 3**. Total cyanide concentrations were below the groundwater GA standard of 200 micrograms per liter ( $\mu$ g/L) except at MW-OB23 (2,000  $\mu$ g/L). Free cyanide was not detected in surface water.

<sup>&</sup>lt;sup>2</sup> DER-10/Technical Guidance for Site Investigation and Remediation. New York State Department of Environmental Conservation. May 3, 2010.

<sup>&</sup>lt;sup>3</sup> Phone Conversation - Brian Jankauskas at NYSDEC and Arlene Lillie at EHS Support LLC. February 13, 2018.



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 comparison of groundwater data to the GA standard is for reference, per DER-10 Guidelines. The GA standard was established for the protection of fresh groundwater use as a drinking water source. However, groundwater on-Site is not in use, and the use of groundwater for any purpose is precluded (pursuant to the Deed Notice filed with Warren County).

# Summary and Closing

The last remaining above-grade historical wastewater treatment structures (i.e., the former Pretreatment Plant Building and tank T-110) were demolished and removed from the Site in March 2018. This round of groundwater and surface water sampling was performed in June 2018; therefore, the data are indicative of post-demolition conditions.

The results demonstrate that cyanide concentrations in groundwater on-Site continue to be stable to declining. Furthermore, cyanide concentrations in groundwater above the GA standard are limited in extent (i.e., limited to MW-OB23 area), and concentrations downgradient from MW-OB23 are below the GA standard at the Site boundary (i.e., at MW-OB18). Free cyanide is not detected in surface water, and a Deed Notice is in place precluding the use of groundwater on the Site. On this basis, the residual cyanide in groundwater at the Site does not present a risk to human health or the environment.

As indicated in the last annual *Groundwater and Surface Water Monitoring Report* (submitted to the NYSDEC on November 29, 2017), now that the demolition is complete, the need for future groundwater and surface water sampling at the PTP Area is under evaluation.

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, please contact Cassie Reuter at (608) 558-6795 for discussion.

Sincerely,

Cassie R. Reuter EHS Support LLC

assie B. Renta

Wisconsin Professional Engineer No. E-39526

### **List of Tables:**

Table 1 – Sampling Event Analysis Schedule

Table 2 – Gauging and Purge Data Summary

Table 3 – Groundwater and Surface Water Analytical and Field Parameter Results

Table 4 – Laboratory Analytical Method Summary

Table 5 – Historical Total Cyanide Concentration Data (in mg/L)

Table 6 - Mann-Kendall Calculations - MW-OB23

## **List of Figures:**

Figure 1 – Pretreatment Plant Annual Event Monitoring Locations

Figure 2 – Groundwater Elevation Contour Overburden at Pretreatment Plant June 2018

Figures 3A-3G – Cyanide Concentrations in Groundwater versus Time

### **List of Attachments:**

Attachment 1 – Purge and Sample Logs

Attachment 2 – Laboratory Analytical Reports

Attachment 3 – Tier II Validation 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 2018

Annual Gauge Only	Annual Gauge & Sample	Field Parameters and Total Cyanide <sup>1</sup>	Free Cyanide <sup>2</sup>
	Overburde	en Wells	
	MW-OB17	1	
	MW-OB18	1	
	MW-OB19	1	
	MW-OB20 <sup>3</sup>	1	
	MW-OB21	1	
	MW-OB23	1	
IG-1			
IG-2			
P-1	V	Wells to be gauged o	only
P-11			
P-12			
	Surface Wate	er Samples	
	SG-7	1	1
	SG-11	1	1

- 1 Field parameters to include pH, temperature, dissolved oxygen, redox potential, electrical conductivity and turbidity
- 2 As approved by the NYSDEC in October 2017, free cyanide analysis was limited to surface water samples.
- 3 MW-OB20 had insuffucient water for sampling during the June 2018 monitoring event.



Table 2
Gauging and Purge Data Summary
Pretreatment Plant Annual Groundwater and Surface Water Sampling - June 2018

Well Name	Well Diam. (in)	Screen Interval (ft bgs)	6/11/18 Total Well Depth (ft btoc)	6/11/18 DTW (ft btoc)	TOC Elev (ft amsl)	6/11/18 GW Elevation (ft amsl)	6/11/18 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
OVERBURDI	EN MON	IITORING V	VELLS	•			7						•	
MW-OB17	2	5 - 11	13.55	8.01	289.91	281.90	5.54	10.18	150	8.00	8.15	0.15	3.00	Р
MW-OB18	2	4 - 9	12.51	9.51	287.69	278.18	3.00	11.46	100	10.41	10.96	0.6	1.75	Р
MW-OB19	2	5 - 10	9.35	8.32	287.82	279.50	1.03	8.86	100	8.34	8.76	0.42	0.26	Р
MW-OB20	2	4.5 - 8.5	10.18	10.17	290.36	280.19	0.01	ns	ns	ns	ns	ns	ns	ns
MW-OB21	2	4.5 - 14.5	16.62	13.15	284.03	270.88	3.47	14.89	150	13.12	15.77	2.7	2.25	Р
MW-OB23	2	3 - 6.5	8.23	6.67	287.05	280.38	1.56	7.20	100	6.08	6.83	0.75	1.68	Р
P-1	1	3 - 8	7.91	6.20	287.73	281.53	1.71	ns	ns	ns	ns	ns	ns	ns
P-11	1	6 - 11	12.82	8.71	290.37	281.66	4.11	ns	ns	ns	ns	ns	ns	ns
P-12	1	3 - 8	9.49	7.21	287.91	280.70	2.28	ns	ns	ns	ns	ns	ns	ns
IG-1	-	-	8.61	6.54	288.79	282.25	2.07	ns	ns	ns	ns	ns	ns	ns
IG-2	-	-	11.17	8.20	289.77	281.57	2.97	ns	ns	ns	ns	ns	ns	ns
SURFACE W	ATER LO	CATIONS												
SG-11	-	n/a		2.00	n/a	n/a		grab						
SG-7	-	n/a		1.75	n/a	n/a		grab						

"-" 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 2018

											_	
Well ID	Sample ID	Date	Temp	pН	Conductivity	DO	Turbidity	ORP	Cyanio (tota		Cyan (Fre	
Wen ib	Sumple 15	Dute	(degC)	(s.u.)	(mS/cm)	(mg/l)	(NTU)	(mV)	(tota (μg/l		(FIE	•
	. 0 . 12. 5 1 1 (6.1)		(==8=)	(+/	()	(6) ./	(	(/		_		_
	r Quality Standard (GA) <sup>1</sup>	07/22/45	40.26	6.07	0.40	2.40	42.7	444	200		n/a	
MW-OB17	MW-OB17_20150723	07/23/15	18.36	6.97	0.49	3.18	12.7	111	182		_	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-OB17	MW-OB17_20180611	06/11/18	17.48	7.82	0.195	5.68	0.0	225	87	J	2	- UJ
MW-0B18*	MW-OB18_20150723	07/23/15	16.46	7.12	1.10	6.12	0.5	155	102		_	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-OB18*	MW-OB18_20180612	06/12/18	15.72	6.78	0.584	4.33	21.3	255	110	J	-	-
MW-OB19*	MW-OB19_20150724	07/24/15	14.45	6.86	0.358	0.91	81	-29	182		2	UJ
MW-0B19*	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-0B19*	MW-OB19_20170620	06/20/17	19.26	7.24	0.276	2.84	0.0	-72	250	J	2	U
MW-0B19*	MW-OB19_20180612	06/12/18	15.48	9.37	0.349	5.71	0.3	269	180	J	-	-
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-OB21	MW-OB21_20180611	06/11/18	19.88	7.16	0.292	5.89	0.0	96	140	J	-	-
MW-OB21	DUP01_20180611	06/11/18	-	-	-	-	-	-	110	J	-	-
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	
MW-OB23	MW-OB23_20180613	06/13/18	15.15	6.23	0.674	0.68	0.6	23	2000		-	-
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
Blank	EB_20180611	06/11/18	n/a	n/a	n/a	n/a	n/a	n/a	10	UJ	1.2	U
											5.2 A(A	) / 22
Surface Wate	er Quality Standards <sup>1</sup>								9000 H	(FC)	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-7**	SG-7_20180611	06/11/18	22.77	8.82	0.136	7.62	0.3	95	10	UJ	1.2	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
SG-11	SG-11 20180611	06/11/18	22.9	9.05	0.100	8.57	0.2	100	3.2	J	1.2	U
SG-11	DUP02 20180611	06/11/18	-	-	-	-	-		10	UJ	1.2	U
	02_2020011	30/11/10		<u> </u>	I.	<b>!</b>		<b>!</b>	- 10	1 33		

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

**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)

 $\mu g/L$  - 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



<sup>\*\*</sup> Sample not collected in 2016; stream was dry

Table 4
Laboratory Analytical Method Summary
Pretreatment Plant Annual Groundwater and Surface Water Sampling - June 2018

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 Am	erica			
Total Cyanide	SW846 9012B	Water	10	Plastic bottle	250	1	NaOH to pH>12, Cool, < 6 deg. C.	14 Days
	•			ALS Hol	land			
Free Cyanide	e OIA-1677 Wate		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 2018

SAMPLE		GROUND	WATER - TO	TAL CYANIE	DE CONCENT	RATIONS			SURFA	CE WATER	- TOTAL CY	ANIDE CONCENT	RATIONS	
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	0.036 < 0.000005		-
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	1	0.36	0.036	1.6	0.077	-	-	-	ı	-	-
Sep-07	0.34	0.2	1	0.056	0.29	0.04	2.1	0.18	-	-	-	ı	-	-
Sep-08	0.63	-	0.28	0.04	0.28	0.01	4	0.14	-	-	-	1	-	-
Dec-08	0.14	-	0.17	0.05	0.3	ND		0.06	-	-	-	1	-	-
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
Jun-18	0.087 J	0.110 J	0.180 J	NS	0.140 J	-	2.0	-	-	-	-	<0.010 J	-	0.0032 J

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



#### **GSI MANN-KENDALL TOOLKIT** for Constituent Trend Analysis Job ID: C16262 2019 400 Evaluation Date: 11-Nov-18 Facility Name: Glens Falls - Pretreatment Plant Constituent: Total Cyanide Conducted By: Leah Krause Concentration Units: mg/L Sampling Point ID: MW-OB23 TOTAL CYANIDE CONCENTRATION (mg/L) 21-Mar-97 26-Sep-97 1.6 17-Sep-98 1.9 18-Mar-99 16-Mar-00 8 21-Sep-00 3-Apr-01 10 2-Aug-02 11 17-May-04 12 14-Jan-05 13 5-Jul-05 14 23-Jan-06 1.1 15 1.6 16 20-Sep-07 17 17-Sep-08 18 0.98 4-Dec-09 19 2-Jun-10 20 7-Dec-10 21 21-Dec-11 0.91 18-Dec-12 1.9 23 16-Dec-13 1.1 24 0.69 17-Dec-14 25 23-Jul-15 26 1-Jul-16 27 20-Jun-17 28 13-Jun-18 Coefficient of Variation: Mann-Kendall Statistic (S) Confidence Factor Concentration Trend: Prob. Decreasing 10 MW-OB23 Concentration (mg/L) MW-OB23 01/41 10/54 06/68 02/82 07/09 03/23 11/36 **Sampling Date**

#### Notes:

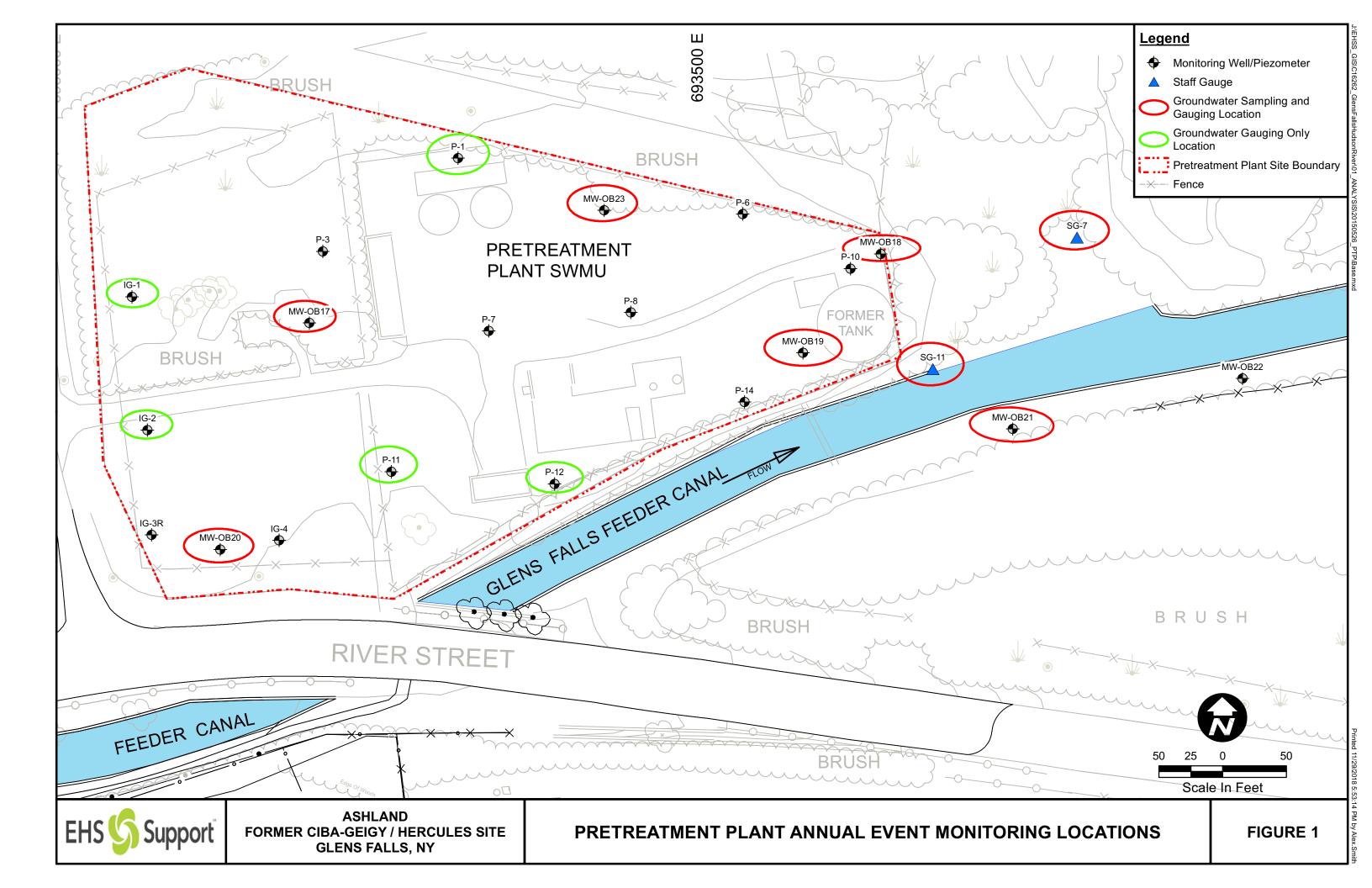
- 1. At least four independent sampling events per well are required for calculating the trend. Methodology is valid for 4 to 40 samples.
- Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing;
   ≥ 90% = Probably Increasing or Probably Decreasing;
   < 90% and S>0 = No Trend;
   < 90%, S≤0, and COV ≥ 1 = No Trend;</li>
   < 90% and COV < 1 = Stable.</li>
- 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.
- 4. July 2006 result (0.04 mg/L) was considered an outlier and excluded from the data set.

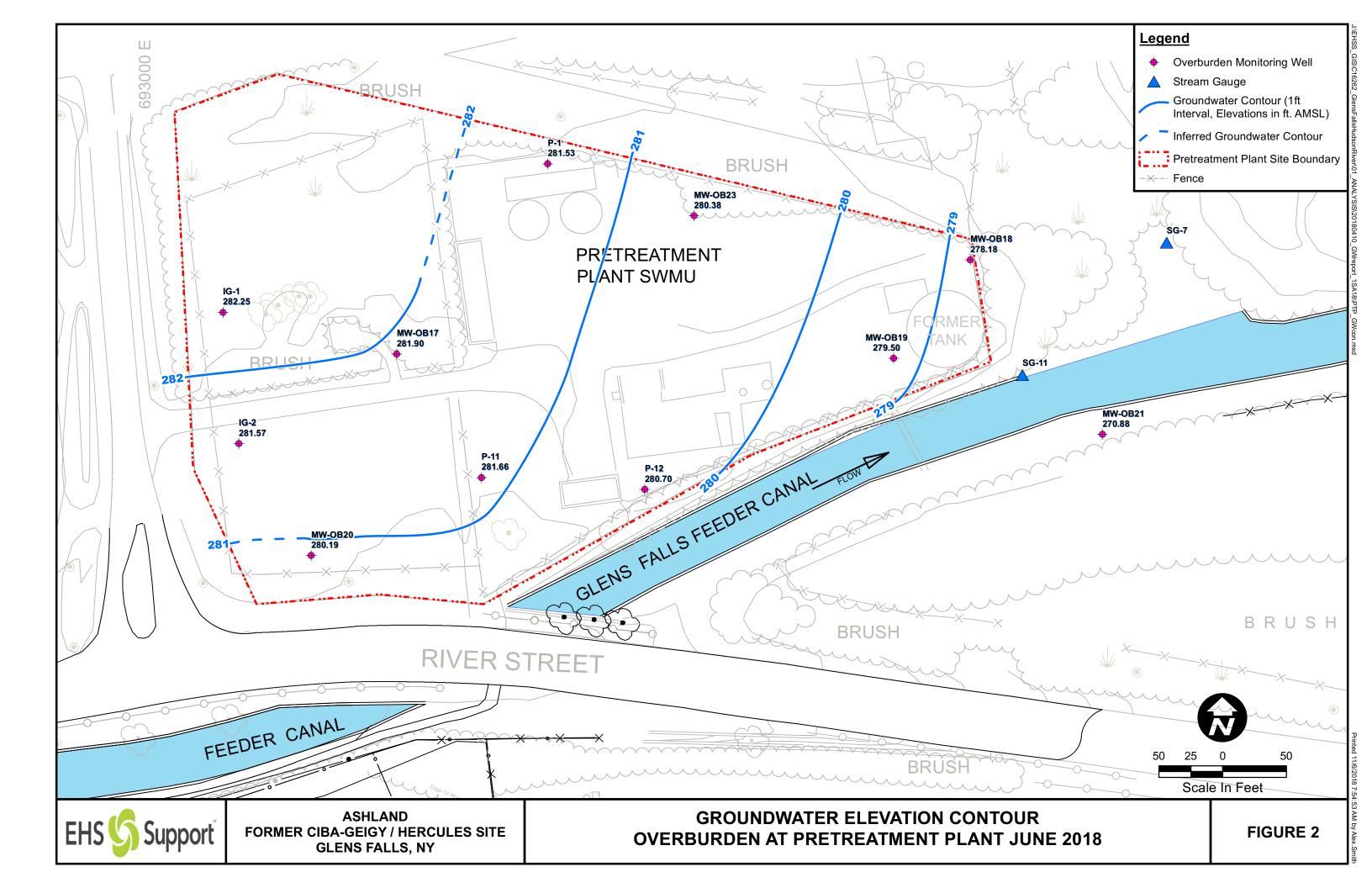
DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com



# **FIGURES**

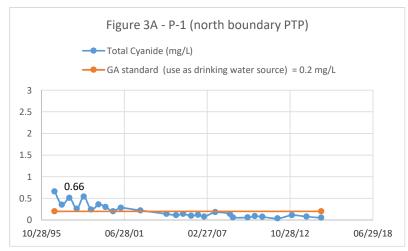


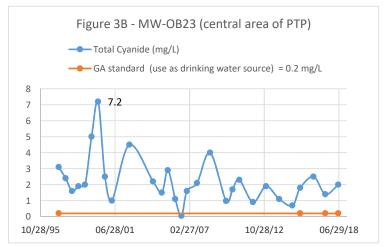


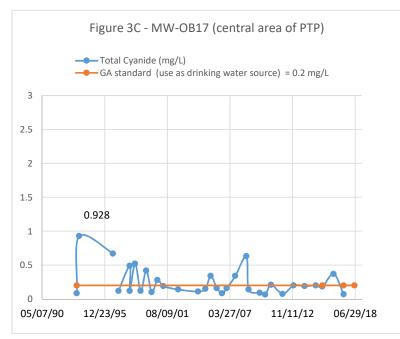
Figures 3A - 3D

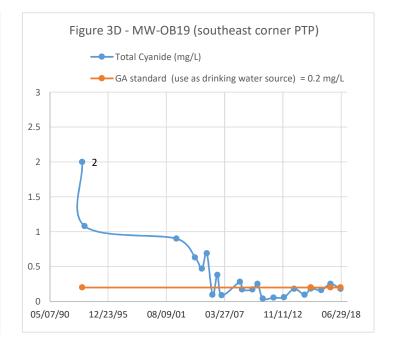
Cyanide Concentrations in Groundwater versus Time (mg/L)

Pretreatment Plant Annual Groundwater & Surface Water Sampling - June 2018

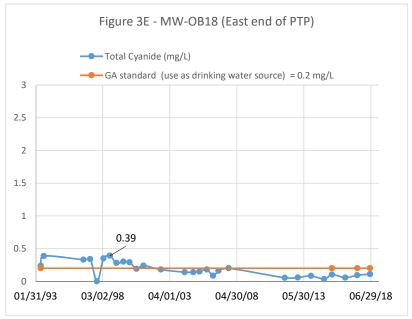


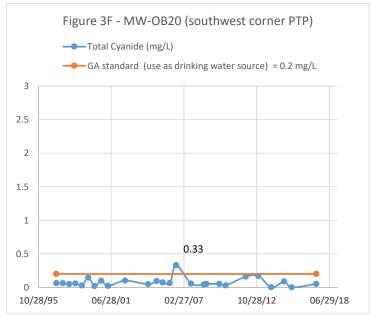


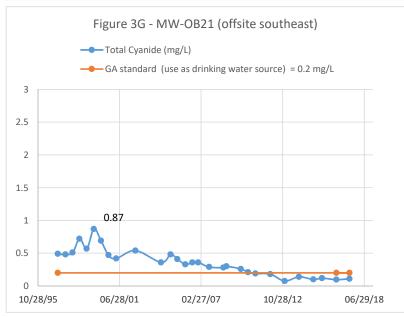




Figures 3E - 3G
Cyanide Concentrations in Groundwater versus Time (mg/L)
Pretreatment Plant Annual Groundwater & Surface Water Sampling - June 2018







Note: Values indicated on each graph respresent historical maximum detections.



# Attachment 1 – Purge and Sample Logs

Water Level I Ashland - Gle		nts			Date Personnel:	Quarter/Year: 2018 Quarter/Year: 2018	16. Geoffreys.
Well Name	Install Depth (ft bgs)	Well Screen Length	Time	DTW (ft btoc)	Total Depth (ft btoc)	Comments	
WP-CC-12	21.2	5	1059	DRY	1971		
SG-12	NA	N/A	1300	18.60	N/A		
REMEDIATIO	N SYSTEM	vertenike		en kittikken.	Statis et militarite peli		
Sump A	~31.5	N/A	093	28.62	31.5%		
Sump B	~29.2	N/A	418	2286	AU dr		
EW-B5	51.8	15.8	1415	31.18	53.81		
Estatuaryana.	Military and the	selfatti igropose		F	RE-TREATMEN	IT PLANT	
IG-1	NA	NIA	0852	6.54	8.61	1°, no-span	
IG-2	NA	NA	0855	8.20	11.17	14 0.	
MW-OB17	11.0	160	USSE	8.01	13.55	21	
MW-OB18	9.0	5.0	0925	9.51	12.51	2"	
MW-OB19	10.0	5.0	0930	8,32	9.35	20	
MW-OB20	8.5	4,0	0900	10.17	10.18	1877,	
MW-OB21	14.5	0,01	U152	15:15	14.62		
MW-OR23	6.5	11 10	19917	1.12	0.23	200	

| NW-0B23 | 6.5 | 14.0 | 6.70 | 7.4 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5

				Quart	eriy Ground	ıwater & St	irrace wate	r Sampling	Event					
Sampling Personnel: 600 F	Frev 5	· · · · · · · · · · · · · · · · · · ·					Well	I ID:	MW-OB19					
Date: ( /   /   /	7	/ 1					Original Ins	stall Depth:	10.0	feet				
Weather: Junny	1						Screen	Length:	5	feet				
Time In: 120			Time Out:	1245			Well Di	ameter:	2	inches				
						WELL INFO	RMATION							
Depth to Water (from TOC):	(feet)	7.37	)			Well Type:		Flushmount		Stick-Up	X			
Depth to Water(From TOC) With Pump in place:	(feet)	7				Well Locked:		Yes	X	No				
Total Depth (from TOC):	(feet)	9.33				Measuring Poin	t Marked:	Yes	$\square$	No				
Length of Water Column :	(feet)	103				Well Condition:		Good	. — (	Poor				
						Well Condition	Comments:	600d	- />					
WELL WATER INFORMATION		100				EVACUATION IN	NFORMATION					ali di Pale	and the second of the	
Volume of Water in Well:	(mL or gal)	. 167	3			Pump ID:	00 mn 5/	N#:405	Pump Size:		Depth of Pump	Intake: 8.	84	
Pumping Rate of Pump:	(mL/min)	125				Evacuation Method:	Bailer		Peristaltic	$\boxtimes$	Bladder	- 🔲	Other	
Total Volume Removed:	(mL or gal)	1.0	Deallon			Tubing Used:	Teflon		Polyethylene	<b>A</b>	N/A			
Volume Measurements	(gal)	(ml)	( Tubing/Well Siz	re			Meter (type/Serial	Number):	terita	0-5	λ .	VMD9	UBVH	
Tubing Volume per foot	0.003	11.36	1/4" ID tubing			Sampling Method:	Bailer		Peristaltic	$\boxtimes$	Bladder		Other	
Well Volume per foot	0.041	155.18	1" diam. well			Did well go drv?	Yes	$\square$	No					
	0.163	616.95	2" diam. well			Final Depth to \	Water (prior to tur	ning off pump):	09.15					
	0.653	2,471.60	4" diam. well			Barometric Pres	ssure (At time of s	ampling) in mm/	Hg:					
<del></del>				Comerphi	n/	FIELD PARAME	TER READINGS:							
Time	1215	1220	1222	1224	1226	1228								
Rate (ml/min)		15 OMAIN	150	125	125	125								
Depth to Water (ft. TOC)	8.32	8,90	8.99	9.12	9.15	09.15								
Temperature (°C)		22.92	21.87	21.03	19.72	19.72								
рН		7.90	7.97	8.00	x.05	x.07								
Conductivity (mS/cm)		0.239	0,242	0.244	0254	0.250								
Dissolved Oxygen (mg/L)		0,59	D.44	0.42	0.69	0.77								
Turbidity (NTU)		0.0	0.0	0.1	0.0	0.0								
ORP (mV)		-58	-64	-65	-41	-23								
SAMPLE INFORMATION								Observations (w	ı ater color, clarit	,, etc.):				
Sample List:		Sample ID:	1		Duplicate ID	:			7	100				
Diss. Chromium & Vanadium	<b>_</b>	Start Time:		ς	Sample Time			l O	car we	±101				
Diss. Hexavalent Chromium	_ _	End Time:	$-\Lambda I$	)	Total Bottles			Well	lear we went D	KY				
Total Cyanide	ą	MS/MSD:	Yes 🔲	No 🏻	Sampled By								11	
Free Cyanide	à	Duplicate:	Yes 🔲	No 🔀	MIS/MISD ID	:		Free Cyanide Sul	lfide Test Strip:	Positive (Black	/ Negative (No	change) D/	'A	
Total Dissolved Solids	ם	Total Bottles:		<u> </u>	Sample Time				UNIT S	<b>FABILITY</b>		-		
Hardness	Hardness Sampled By: Total Bottles					:		pН	DO	Turb.	Cond	ORP		
VOCs (Dichlorobenzenes)	VOCs (Dichlorobenzenes) Sampled						\	± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV	Page	_of\

Ashland Glens Falls, NY

**Quarterly Groundwater & Surface Water Sampling Event** Paul Girafaico Well ID: Sampling Personnel: MW-OB19 Original Install Depth: 10.0 feet 5 Screen Length: feet 820 231 Well Diameter: Time Out: 2 inches Time In: WELL INFORMATION Flushmount Depth to Water (from TOC): (feet) Well Type: Stick-Up Depth to Water(From TOC) With 8.34 (feet) Well Locked: Yes Pump in place: Total Depth (from TOC): Measuring Point Marked: Yes  $\mathbf{X}$ (feet) 6.99 Length of Water Column: Well Condition: (feet) Good Poor Well Condition Comments: WELL WATER INFORMATION EVACUATION INFORMATION 4057 4 Depth of Pump Intake: 8.36 4052 600 Duma Volume of Water in Well: (mL or gal) 1000 16 Pump ID: Pump Size: Evacuation 100 Peristaltic 😾 Bladder Pumping Rate of Pump: (mL/min) Bailer Other Method: Polyethylene 📈 Total Volume Removed: (m) or gal) 1006 Tubing Used: Teflon N/A Water Quality Meter (type/Serial Number): Henb - 052 UMD948VH Tubing/Well Size **Volume Measurements** (ml) (gal) Peristaltic Bailer Other 1/4" ID tubing **Tubing Volume per foot** 0.003 11.36 Method: Did well go Yes No 🕢 Well Volume per foot 155.18 1" diam. well 0.041 8.76 616.95 2" diam. well Final Depth to Water (prior to turning off pump) 0.163 760.608 0.653 2,471.60 4" diam. well Barometric Pressure (At time of sampling) in mm/Hg: FIELD PARAMETER READINGS: 830 100 Rate (ml/min) Depth to Water (ft. TOC) 8.74 15 48 Temperature (°C) 9.37 Conductivity (mS/cm) 5.71 Dissolved Oxygen (mg/L) Turbidity (NTU) ORP (mV) SAMPLE INFORMATION Observations (water color, clarity, etc.): Sample ID: 196-0819\_20180612 Quplicate ID: Grab sample - dry on 6/14/18 Sample List: Diss. Chromium & Vanadium Start Time: Sample Those Diss. Hexavalent Chromium Total Bottles: Total Cyanide MS/MSD: Yes No 🔀 Sampled By: No 🔀 Free Cyanide Duplicate: Yes MS/MSD ID: Positive (Black) / Negative (No change) Free Cyanide Sulfide Test Strip: UNIT STABILITY Total Dissolved Solids Sample Time PG Total Bottles: ORP Hardness Sampled By: DO Turb. Cond ± 10 mV Sampled By: ± 0.1 ± 10%, <10NTU ± 3% VOCs (Dichlorobenzenes)

Ashland Glens Falls, NY
Groundwater & Surface Wester

Sampling Personnel:	utelyn	Foste		Quarterly Grou	ndwater & Su	rface Water Sampli	ng Event					
Date: 6/19/1	67	regic				Well ID:	MW-OB18					
Weather: Sunny	0					Original Install Depth:	9.0	feet		-		
Time In: 1041			Time Out:			Screen Length:	5	feet				
			Time Out: 157	*		Well Diameter:	2	inches				
Depth to Water (from TOC):	(feet)	d	रा 💮		WELL INFO	RMATION						vasta viikilija vasta ka
Depth to Water(From TOC) Wi Pump in place:	th (feet)	9.	9 1		Well Type:	Flushmou	nt 🗍	Stick-Up	M			
Total Depth (from TOC):	(feet)	12.5	1		Well Locked:	Υ	es 👿	No				
Length of Water Column :	(feet)		<b>1</b> 60		Measuring Point	Marked: Y	es 🔯	No				
		3.	00		Well Condition:	Goo		Poor				
WELL WATER INFORMATION					Well Condition Co	mments: 600cl						
Volume of Water in Well:	(mL pr gal)	1071	9 gal -		EVACUATION INF	DRMATION						
Pumping Rate of Pump:	(mL/min)	1 V. FT	1 gal			Pump S/N# 40	Pump Size: 14.T	NV360N		OF	<del></del>	
Total Volume Removed:	(mL or gal)	1136			Evacuation Method:	Bailer 🔲	110	K)	Depth of Pump Inta	ike:	0	
Volume Measurement		41.73			Tubing Used:	Teflon	Polyethylene	R	N/A	<del>-</del>	Other	
Tubing Volume per foo		(ml)	Tubing/Well Size		Water Quality Met	er (type/Serial Number):	rika W	-<2 O	# 238V	10000	79-	
Well Volume per foot		11.36	1/4" ID tubing		Method	Bailer	Peristaltic	Ž ~	Bladder	1 1 9		
ven volume per 1001		155.18	1" diam. well		Did well go drv?	Yes	No	=	Diddee		Other	
	0.163	616.95	2" diam. well		Final Depth to Wat	er (prior to turning off pump):	12,41					
	0.653	2,471.60	4" diam. well		Barometric Pressur	e (At time of sampling) in mm.						
ime	IDSD	INC-7	ling/J ling	115 757	FIELD PARAMETER	READINGS:	•					Jack College College
Rate (ml/min)	1<0	KN	150 150	U IUSX	ЩООЦ	105 1110	1115	11201	1125111	20	11122	1
Depth to Water (ft. TOC)	0<1	100	1031 150	150	150	50 150	150	50 1	50 1"	40	445	-
emperature (°C)	16 450	10.22	10.20 10.8	810.77	10.87	105 1145	11701	2.03	241			
Н	10.70	18.10	18.80 186	218.65	18.7111	7.84 17910	12:12	21001	2/12	7		
	t.12	7.10	7:0S 7:0	47.03	703 =	718 317	3731	1.02	7.70			
onductivity (mS/cm)	0.343	0.325	0377 033	A 033X	DZUDA	255 0 200	7.10	7. 25	t. LL			
ssolved Oxygen (mg/L)	0.93	7.60	450010	1/200	3 3 X 7	333 N. 2. C.	D210 1	). 54	2.532	Washington of the Control of the Con		
rbidity (NTU)	D.S	0.0	ODIT	700	0.20 7	UT 18.US	10.12 5	>481	1.28	New York Control of the Control of t	ode or other particular particula	
RP (mV)	1100	12/	2011 22-	2 52	U.S.	.+ 3.5	63 3	3.4 3	3.0			
MPLE INFORMATION	1444	1710	-V11223	214251	228 2	27 223	56 4	54 1	001	and the same of th		-
mple List:		Sample ID:	116	Doplicate ID:		Observations (wa	ter color, clarity, etc	.):				Septimination
Diss. Chromium & Vanadium	- 1	Start Time:	115	Sample Time:		128	on b	11/18	Wen	F 10	00	
Diss. Hexavalent Chromium	- 1	End Time:	100	Total Bottles:	-		1	(		`		
Total Cyanide		MS/MSD: Y	es No 🛣	Sampled By:								
Free Cyanide		Duplicate: Y	1	Ms/MSD ID:								
Total Dissolved Solids		Total Bottles:	1167	Sample Time:		Free Cyanide Sulfid		sitive (Black) / Ne	gative (No change)	11	/R	
Hardness		Sampled By:		Total Bottles:			UNIT STABILI	TY				
VOCs (Dichlorobenzenes)			• 4	Sampled By:		pH		Turb.	Cond (	ORP		
						± 0.1	± 10% ± 10	%, <10NTU	±3% ±1	.0 mV	Page 📗 o	. 1

				Quarter	y Groundwa	ter & Surfac	e Water Sampling	g Event					
Sampling Personnel:	V 60	July D					Well ID:	MW-OB18					
Date: (2) 12/-14	7						Original Install Depth:	9.0	feet				
Weather: 750 6	DONN	/					Screen Length:	5	feet				
Time In: 836			Time Out:				Well Diameter:	2	inches				
		Wil.	16/	12		WELL INFORMAT	<u>ION</u>						
Depth to Water (from TOC):	(feet)	9.51	16	44	Wel	II Type:	Flushmour	nt 🔲	Stick-Up	凶			
Depth to Water(From TOC) With Pump in place:	(feet)		16.4		Wel	II Locked:	Ye	es 🔯	No				
Total Depth (from TOC):	(feet)	16	LSI		Mea	asuring Point Mark	red: Ye	es 🔇	No				
Length of Water Column :	(feet)	1	λ. <i>(</i> ()		Wel	Il Condition:	Goo		Poor				
			71-10-		Wel	Il Condition Comm	ents: Loc	s el					
WELL WATER INFORMATION					EVA	CUATION INFORM							
Volume of Water in Well:	(mL or gal)	<del>100</del> €	34	ial	Pun	10 ID: 406	& Led Pumo	Pump Size:	15"	Depth of Pump I	ntake:	6	
Pumping Rate of Pump:	(ml/min)	100	(	1		cuation thod:	Bailer	Peristaltic	Z	Bladder		Other	
Total Volume Removed:	(mk or gal)		RAB			ing Used:	Teflon	Polyethylene	N	N/A			
Volume Measurements	(gal)	(ml)	Tubing/Well Size		Wat	ter Quality Meter (	type/Serial Number):	534116	MOV	Her	160 1	152	
Tubing Volume per foot	0.003	11.36	1/4" ID tubing		Sam	npling thod:	Bailer	Peristaltic	K	Bladder		Other	
Well Volume per foot		155.18	1" diam. well		Did drvi	well go	Yes	No	DA .				
tran rolling par root	0.163	616.95	2" diam. well				prior to turning off pump)	1096					
	0.653	2,471.60	4" diam. well				At time of sampling) in mr	/Ha	760.8	49			
	0.033	2,471.00	4 diani, wen			LD PARAMETER RE		1/116.	700,0				
Time	845	-											
Rate (ml/min)	100												
Depth to Water (ft. TOC)	1671												
Temperature (°C)	15.73												
	13.10		+										
рН	6.10										-		
Conductivity (mS/cm)	0.54												
Dissolved Oxygen (mg/L)	7.33												
Turbidity (NTU)	21.3				*								
ORP (mV)	वेजज												
SAMPLE INFORMATION	9			100	-	<u></u>	Observations (	water color, clarit	y, etc.);		I	1	
Sample List:		Sample ID	100-00	184018	Diplicate ID:								
Diss. Chromium & Vanadium		Start Time		-	Sample Time:								
Diss. Hexavalent Chromium		End Time	0843		Total Bottles:								
Total Cyanide	<b>⊠</b>	MS/MSD	Yes	No 🔣	Sampled By:						a A	71	
Free Cyanide	a	Duplicate		No 😱	MS/MSD ID:		Free Cyanide S	ulfide Test Strip:	Positive (Black	) / Negative (No o	change) 👠	11	
Total Dissolved Solids		Total Bottles	:: <b>j</b>	-	Sample Time:		·		TABILITY				
Hardness		Sampled By	Mr		Total Bottles:		рН	DO	Turb.	Cond	ORP	á	1
VOCs (Dichlorobenzenes)			* -		Sampled By:		± 0,1	± 10%	± 10%, <10NTU	± 3%	± 10 mV	Page	_of

				Quarte	rly Ground	water & Su	rface Wate	r Sampling	Event					
Sampling Personnel: Kate	lyn Fos	ter					Wel	II ID:	MW-OB21					
Date: 6/11/18	/						Original In	stall Depth:	14.5	feet				
Weather: Sunny							Screen	Length:	10	feet				
Time In: 1216			Time Out: 12	54			Well Di	iameter:	2	inches				
		1.00 mg (1.15)				WELL INFO	RMATION							
Depth to Water (from TOC):	(feet)	13.15	1			Well Type:		Flushmount		Stick-Up	$\boxtimes$			
Depth to Water(From TOC) With Pump in place:	(feet)	13.12	7			Well Locked:		Yes	Ø	No				
Total Depth (from TOC):	(feet)	16.62				Measuring Point	Marked:	Yes	8	No				
Length of Water Column :	(feet)	3.47	,			Well Condition:		Good	œ/	Poor				
						Well Condition	Comments:	bood						
WELL WATER INFORMATION						EVACUATION IN	FORMATION							
Volume of Water in Well:	(mL or gal)	0.57				Pump ID: 4	D68 G	-Ofumb	Pump Size: 14	DX3/80D	Depth of Pump	ntake: 14	. 89	
Pumping Rate of Pump:	(mL/min)	150				Evacuation Method:	Bailer		Peristaltio		Bladder		Other	
Total Volume Removed:	(mL or gal)	2.25				Tubing Used:	Teflon		Polyethylene	<b>A</b>	N/A			
Volume Measurements	(gal)	(ml)	Tubing/Well Size			Water Quality N	leter (type/Seria	l Number):	-52,3	# S38	N998	T		
Tubing Volume per foot	0.003	11.36	1/4" ID tubing			Sampling Method:	Bailer		Peristaltio	X	Bladder		Other	
Well Volume per foot	0.041	155.18	1" diam. well			Did well go drv?	Yes		No	<b>X</b>				
	0.163	616.95	2" diam. well				Vater (prior to tu	rning off pump):	15.7=	}				
	0.653	2,471.60	4" diam. well			Barometric Pres	sure (At time of s	sampling) in mm/	'Hg:	758 . 59	iz			
					e Paradare (Laber	FIELD PARAMET	ER READINGS:						, ,	
Time	1222	1224	1224	228	1230	1232	1237	1242	1247		a a	Constitution		
Rate (ml/min)	150	150	150	150	150	150	150	150	150					APE CONTRACTOR
Depth to Water (ft. TOC)	1312	1374	13.88	14.02	14.18	14:32	14.80	15.02	1541	vijilinas vijagos	VA TOTAL CONTRACTOR OF THE PARTY OF THE PART			Ni Statement
Temperature (°C)	21.16	20.75	20.532	20.36	20.25	20.17	1999	1992	19.88			Special		Total Section
pH	735	779	777	774	274	777	720	719	7.110	ar tiligi e (epinasia)				
Conductivity (mS/cm) 22	TASO	2010	0202	D792	D790	0290	1201	1000	D 262	man of the state o		100		
Dissolved Oxygen (mg/L)	1 10	10.03	10.07	10010	191	1. 010	(3)	1.00	C 00			the section of the se		
	<u>6.50</u>	10.8	6.02	4.00	3:11	0.00	5.7	0.00	2.2		2,144			
Turbidity (NTU)	100	11.0	11.4	5.7	2.7	1.3	0.1	0.0	0.0			Total Section 1		
ORP (mV)	49	45	L5'L-1	42	73	80	189	40	196					
SAMPLE INFORMATION			- 1 (1/2 a	01			25 (7 15 1 1 1	Observations (w	ater color, clarit	y, etc.);	- 1			
Sample List:	_	Sample ID:	MW-082	-201800	Duplicate ID:	5 mm and 57%	<u> 201817 (1817</u>							
Diss. Chromium & Vanadium		Start Time:	1200		Sample Time:	4256	TOP							
Diss. Hexavalent Chromium		End Time:	1254		Total Bottles:	1								
Total Cyanide		MS/MSD: Duplicate:	_	lo 🔲	Sampled By:	K+ 170.	11 2 niez			AA				
Total Dissolved Solids		Total Bottles:	<b>*</b>	~ 🖳	MS/MSD ID: Sample Time:		21-20180	firee Cyanide Su		Positive (Black)	/ Negative (No	change)		
Hardness		Sampled By:	7		Total Bottles:	1200		pН	DO	Turb.	Cond	ORP		
VOCs (Dichlorobenzenes)	_	Jampies Dy.	4+		Sampled By:			± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV	Page	of

Sampling Personnel:	Hrev S	)		Quarte	erry Ground	iwater & St		er Sampling ell ID:	MW-OB17					-
Date: 6/11/18	artich o	4					-	nstall Depth:	11.0	feet				
Weather: Sunny							Scree	n Length:	60	feet				
Time In: 1020			Time Out:	125			Well D	Diameter:	2	inches				
						WELL INFO	DRMATION							
Depth to Water (from TOC):	(feet)	8,01				Well Type:		Flushmount	· 🕦	Stick-Up	ব			
Depth to Water(From TOC) With Pump in place:	(feet)	8.00	)			Well Locked:	w	Yes	<u> </u>	No				
Total Depth (from TOC):	(feet)	13.5	5			Measuring Poin	nt Marked:	Yes		No			~	
Length of Water Column :	(feet)	5 51	4			Well Condition		Good		Poor				
		3,00	<del></del>			Well Condition	Comments:	6000	<u> </u>					
WELL WATER INFORMATION						EVACUATION II	NFORMATION							
Volume of Water in Well:	(mL or gal)	.90		<		Pump ID: 9/	N#.405	2 Geogram	Pump Size: M	EN x3/80	Depth of Pump	Intake: 1 C	118	
Pumping Rate of Pump:	(mL/min)		onl/m			Evacuation Method:	Baile		Peristaltic		Bladde		Other	
Total Volume Removed:	(mL or gal)	3.09	al			Tubing Used:	Teflo	n 🔲	Polyethylene	X	N/	Α 🔲		
Volume Measurements	(gal)	(ml)	Tubing/Well Size			Water Quality I	Meter (type/Seri	al Number): 🖁 🕫	ribu V	-52	UMD	148 VH		
Tubing Volume per foot	0.003	11.36	1/4" ID tubing			Sampling Method:	Baile		Peristaltic	X D	Bladde	er 📋	Other	-
Well Volume per foot	0.041	155.18	1" diam. well			Did well go drv?	Ye	s 🔲	No	$\dot{\mathbf{X}}$				
	0.163	616.95	2" diam. well				Water (prior to t	urning off pump):	10(68)	8.15	-			
	0.653	2,471.60	4" diam. well			Barometric Pre	ssure (At time of	sampling) in mm	/Hg:	75	8.773			
				68		FIELD PARAME	TER READINGS:							
Time	1030	1040	1042	19.1044	1046	1048	1050	1055	100	1105	(110			
Rate (ml/min)		150ml/m	(150ml/m	in 150 myou	(50	(50	(50	120	150	150	150			
Depth to Water (ft. TOC)	8.00	8.10	5.12	8.13	8.14	8.14	8.14	8.14	8.15	6.15	8.16			
Temperature (°C)		20.11	1942	1886	1811	17,85	1796	1787	17.81	17.82	17.60	K		
pH		7.70	7.72	7.80	7.85	7.85	7.84	7.84	7 82	7.82	7.82	Ŧ		
Conductivity (mS/cm)		0.190	0.193	0 194	0.197	891,0	0.198	1).197	0.196	0.196	0.195	pin,		
Dissolved Oxygen (mg/L)		180	7.79	7.80	7.50	7.18	7.04	6.78	6.28	5.96	5.68			
Turbidity (NTU)		16.14	15.0	0.8	0.9	mis à	4.7	0.4	0.2	0.1	0.0			
ORP (mV)		222	221	218	218	219	219	221	222	223	225			
SAMPLE INFORMATION		1 113	001	2.10	1019				water color, clarity		1223	1		
Sample List:		Sample ID:	MUDRIT	20180611	- Duplicate ID	:		Clear	A CONTRACTOR OF THE PARTY OF TH	<u> </u>				
Diss. Chromium & Vanadium		Start Time:	1111	-651115	Sample Time									
Diss. Hexavalent Chromium		End Time:	بسليا	5651118	Total Bottles	:								
Total Cyanide	<b>2</b> )	MS/MSD:	Yes 🔲	No 🔀	Sampled By:			Ī						
Free Cyanide	o i	Duplicate:	Yes 🔲	No 🕅	MS/MSD ID	:		Free Cyanide Su	ilfide Test Strip:	Positive (Black	() / Negative (No	change)	W/A	
Total Dissolved Solids		Total Bottles:			Sample Time					TABILITY			_	
Hardness		Sampled By:	G	3	Total Bottles			pН	DO	Turb.	Cond	ORP		b
VOCs (Dichlorobenzenes)					Sampled By:			± 0.1	± 10%	± 10%, <10NTU	± 3%	± 10 mV	Page _	of_

				Quart	erly Ground	dwater & Sı	urface Wate	r Sampling	Event					
Sampling Personnel: Pa	ul Gira	ifal co	9				Wel	II ID:	SG-11	SG-11				
Date: 6/11/18							Original In	stall Depth:	N/A	feet				
Weather: Sunny							Screen	Length:	N/A	feet				
Time In: PG	1458		Time Out:	508			Well Di	iameter:	N/A	inches				
				900 000 000 000	100000000000000000000000000000000000000	WELL INFO	ORMATION							
Depth to Water (from TOC):	(feet)	NP	+			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)	2+	7			Measuring Poin	nt Marked:	Yes		No				
Length of Water Column :	(feet)	24	+			Well Condition:	:	Good		Poor				
						Well Condition	Comments:	Local	- PG					
WELL WATER INFORMATION						EVACUATION IN	NFORMATION							
Volume of Water in Well:	(mL or gal)	NF	<b>A</b>			Pump ID:	NA		Pump Size:	NA	Depth of Pump	Intake: NA		
Pumping Rate of Pump:	(mL/min)	NA				Evacuation Method:	Bailer	M	Peristalt		Bladde		Other	
Total Volume Removed:	(mL or gal)	NA	<u> </u>			Tubing Used:	Teflon		Polyethyler			' 🗵		
Volume Measurements	Volume Measurements (gal) (ml) Tubing/Well Size						Meter (type/Seria	l Number):	MD94	SVH	Horib	a U52		
Tubing Volume per foot	Tubing Volume per foot 0.003 11.36 1/4" ID tubing						Bailer	N N	Peristalt	<u> </u>	Bladde	г 🗌	Other	
Well Volume per foot	0.041	155.18	1" diam. well			Did well go drv?	Yes			10 🔀				
	0.163	616.95	2" diam. well			Final Depth to \	Water (prior to tu	rning off pump):	22+					
	0.653	2,471.60	4" diam. well				ssure (At time of s	sampling) in mm/	/Hg:	758.27	3			
	Live			T	T	FIELD PARAME	TER READINGS:			T	Γ	T		
Time	1459				ļ									
Rate (ml/min)	NA													
Depth to Water (ft. TOC)	NA													
Temperature (°C)	22.9													
рН	9,05													
Conductivity (mS/cm)	0,100													
Dissolved Oxygen (mg/L)	8.57													
Turbidity (NTU)	0.2													
ORP (mV)	100													
SAMPLE INFORMATION	1100					1		Observations (w	/ater color, clar	ity etc.):		<u> </u>		$\rightarrow$
Sample List:		Sample ID	: 56-11-20	186611	Duplicate ID	DUPO2 -	30180611			/Grab Si	cmpk.			
1	ple List:  Sample ID: 56-11-2018661  Duplicate  Start Time: 1500  Sample Til							Non		10120				
Diss. Hexavalent Chromium	Diss. Hexavalent Chromium End Time: 1504 Total Bottl													
Total Cyanide	Total Cyanide Ms/MsD: Yes Ms No Sampled B					: PG								
Free Cyanide	Free Cyanide Duplicate: Yes No MS/MSD					56-11-201	186611	Free Cyanide Sul	lfide Test Strip:	Positive (Black	Negative No	change)		
Total Dissolved Solids	Total Dissolved Solids Total Bottles: Sample Tim					1500				STABILITY				
Hardness	: <b></b>	Sampled By	PG		Total Bottles	: 2		рН	DO	Turb.	Cond	ORP	1	
VOCs (Dichlorobenzenes)					Sampled By	: PG		± 0,1	± 10%	± 10%, <10NTU	± 3%	± 10 mV	Page	_of

	d Gira			Quar	terly Ground	dwater & Su	rface Wate	r Sampling	Event				
Sampling Personnel:				Well ID:					s				
Date: 6/11/18				Original In	stali Depth:	N/A	feet						
Weather: Sunny							Screen	Length:	N/A	feet			
Time In: 1440 Time Out: 1448							Well Di	ameter:	N/A	inches			
						WELL INFO	RMATION						
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)	1.75				Measuring Poin	t Marked:	100	TI.	No			
Length of Water Column :	(feet)	1.75				Well Condition:		Good		Poor			
						Well Condition	Comments:	2					
WELL WATER INFORMATION						EVACUATION IN	FORMATION	,					
Volume of Water in Well:	(mL or gal)	NA				Pump ID:	U	+	Pump Size:	MA D	epth of Pump Intake:	NA	
Pumping Rate of Pump:	(mL/min)	NA				Evacuation Method:	Bailer	Ø	Peristaltic		Bladder	Other	-60
Total Volume Removed:	(mL or gal)	NX				Tubing Used:	Teflon		Polyethylene		N/A 🔯		
Volume Measurements	(gal)	(ml)	Tubing/Well Si	ze			Neter (type/Seria	l Number):	MD948	VH HO	11 ba U-52		
Tubing Volume per foot	0.003	11.36	1/4" ID tubing			Sampling Method:	Bailer	$\searrow$	Peristaltic		Bladder	Other	
Well Volume per foot	0.041	155.18	1" diam. well			Did well go drv?	Yes		No	ব			
	0.163	616.95	2" diam. well			1	Vater (prior to tu	rning off pump):	NH				
	0.653	2,471.60	4" diam. well			Barometric Pres	sure (At time of	sampling) in mm/	Hg:	754.117	,		
	T					FIELD PARAMET	TER READINGS:						
Time	1442												
Rate (ml/min)	AG												
Depth to Water (ft. TOC)	My												
Temperature (°C)	22.77												
pH	5.82												
Conductivity (mS/cm)	0.136												
Dissolved Oxygen (mg/L)	7.62												
Turbidity (NTU)	0.3												1
***************************************	95												
ORP (mV)	75	leggeneral by No. December 200 at 1881 c		Alletonia anticoloria accomo al france			S1000000000000000000000000000000000000		A 0000000000				
SAMPLE INFORMATION		Camala ID	56-7-3	higa u	Duplicate ID			Observations (w	ater color, clarit	y, etc.):			
Sample List:	. 🗀		1445	01.0611	Sample Time			Not	-				
		Total Bottles			100	, ,	well						
Total Cyanide		MS/MSD:		No 📉	Sampled By:			(26	ab 6	ample	7		
Free Cyanide		Duplicate:		No X	MS/MSD ID			Free Cyanide Sul			The second secon		
Total Dissolved Solids	_	Total Bottles:	<u> </u>	**	Sample Time			riee Cyanide Sul		TABILITY	Negative (No change)		<del></del>
Hardness	_	Sampled By:	Đċ.		Total Bottles			pH	DO	Turb.	Cond ORF	<b>)</b>	
VOCs (Dichlorobenzenes)		,			Sampled By:			± 0.1	± 10%	± 10%. <10NTU	±3% ±10 r	4	of

				Quarte	rly Ground	water & Su	rface Wate	r Sampling	Event								
Sampling Personnel: Katel	vn Fost	e/					Wel	l ID:	MW-OB23								
Date: 6/11/18	7						Original In	stall Depth:	6.5	feet							
Weather: 5 401 V							Screen	Length:	4.0	feet							
Time In: 1413		Well Di	ameter:	2	inches												
		100000000000000000000000000000000000000	B 8			WELL INFO	RMATION				and the reserved was						
Depth to Water (from TOC):	(feet)	6.67				Well Type: Flushmount Stick-Up											
Depth to Water(From TOC) With Pump in place:	(feet)	6.4	5			Well Locked: Yes No No											
Total Depth (from TOC):	(feet)	8.2	3			Measuring Point Marked: Yes No											
Length of Water Column :	(feet)	+62	KF1.50	· >		Well Condition: Good Poor											
		_				Well Condition (	comments:	<del>)</del> " (00	d		And the second s						
WELL WATER INFORMATION						EVACUATION INFORMATION											
Volume of Water in Well:	(mL or gal)	0	,26gal	on 5		Pump ID: GOO Pump SN # 4068 Pump Size: 410 x380 Depth of Pump Intake: 7.45											
Pumping Rate of Pump:	(mL/min)	1	000			Evacuation Method:	Bailer		Peristaltic	Ø	Bladder		Other				
Total Volume Removed:	(mL or gal)		8			Tubing Used:	Teflon		Polyethylene	<u> </u>	N/A						
Volume Measurements	(gal)	(ml)	Tubing/Well Size			Water Quality M	leter (type/Seria	l Number):	oriba v	<u>-sa s</u>	is 38N9	987					
Tubing Volume per foot	0.003	11.36 1/4" ID tubing				Sampling Bailer Peristaltic Bladder Other Method:											
Well Volume per foot	0.041	155.18	1" diam. well			Did well go dry?											
	0.163	616.95	2" diam. well			Final Depth to V	/ater (prior to tu	rning off pump):	8.21								
	0.653	2,471.60	4" diam. well			Barometric Pres		sampling) in mm	/Hg:								
	La.	. A			LUSE	FIELD PARAMET		11127	Luun	Nulla	ra	144.67	Licon	(10.3			
Time	1417	1419	1421	1423	1425	1427	1432	1437	1442	1447	1452	1457	1502	1507			
Rate (ml/min)	100	100	100	100	100	100	100	100	100	100	100	100	100	100			
Depth to Water (ft. TOC)	6.45	6.46	6.45	6.51	6.55	6.66	6.91	7.00	7.16	7.20	7.52	7.46	7.75	7.82			
Temperature (°C)	17.71	17.67	17.34	17.26	17.19	17.07	16.68	16,52	16.48	16.45	16.33	16.16	16.36	16.47			
рН	7.07	7.05	7.02	7.00	6.99	6.98	6.95	6.96	6.88	7.06	6.92	6.92	6.98	7.02			
Conductivity (mS/cm)	0.474	0.470	0.471	0.467	0.472	0.475	0.464	0.465	0,466	0.456	0.457	0.463	0.461	0.461			
Dissolved Oxygen (mg/L)	007	0.04	0.00	0.04	0.04	0.05	0.00	0.36	0.50	0.71	1.17	1.05	2.56	3.39			
Turbidity (NTU)	5.5	5.4	3.3	2.6	2.7	3.6	7.6	6.5	6.5	8.4	16.3	29.9	40,3	19.3			
ORP (mV)	190	-107	- 106	-109	-108	-164	- 87	-78	-64	-60	-52	-51	~33°	-21			
SAMPLE INFORMATION								Observations (	water color, clarit	y, etc.):							
					Deplicate ID	:		1/35		. sent	DRY						
Diss. Chromium & Vanadium		Start Time: Sample Time					1635 well went										
Diss. Hexavalent Chromium		End Time: Total Bottle:						Not Sampled									
Total Cyanide		MS/MSD: Yes No Sar			Sampled By:		$\rightarrow$	1 NO 1 Dawhier,									
Free Cyanide	· 🗆	Duplicate:	Yes .	No 🔯	MS/MSD ID	:	2	Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)									
Total Dissolved Solids		Total Bottles:		<u> </u>	Sample Time	_	UNIT STABILITY						<b>a</b>				
Hardness		Sampled By:	_ <i>I</i> V	J	Total Bottles			рĤ	DO	Turb.	Cond	ORP	Page	.3			
VOCs (Dichlorobenzenes)		I			Sampled By	:		±0.1 ±10% ±10%,<10NTU ±3% ±10 mV Pa						of			

				Quarte	erly Ground	lwater & S	urface Wate	r Sampling									
Sampling Personnel:	yn Fost	26				l ID:	MW-0P2	3									
Date: 6/1//8	1						Original In	stall Depth:	6.5	feet							
Weather: Sunny							Screen	Length:	4.0	feet							
Time In: 1413			Time Out:	645			Well D	iameter:	2	inches							
						WELL INF	ORMATION										
Depth to Water (from TOC):	(feet)	6.0	67			Well Type: Flushmount Stick-Up											
Depth to Water(From TOC) With Pump in place:	(feet)	6.	45			Well Locked:											
Total Depth (from TOC):	(feet)	8-	3			Measuring Point Marked: Yes No											
Length of Water Column :	(feet)	1.6	2KF 1	.56		Well Condition: Good Poor											
		,,,,				Well Condition	n Comments:	2" 600	ed								
WELL WATER INFORMATION						EVACUATION	INFORMATION		14000								
Volume of Water in Well:	(mL or gal)	0.3	26 9,010	79		Pump ID: Goo pamp 5/N# 4018 Pump Size: 4DD x 780 Depth of Pump Intake: 7.45 (7.950)											
Pumping Rate of Pump:	(mL/min)	160		•		Evacuation Method:	Bailer		Peristaltic	ΣĄ	Bladder		Other	``	•		
Total Volume Removed:	(mL or gai)	8				Tubing Used:	Teflor		Polyethylene		N/A	<u>'——</u>					
Volume Measurements	(gal)	(ml)	Tubing/Well Siz	e			Meter (type/Seria	l Number):	eriba U	-52 S	538N°	198T					
Tubing Volume per foot	0.003	11.36	1/4" ID tubing			Sampling Method:	Baile	· 🗆 .	Peristaltic		Bladder	· 🗆	Other				
Well Volume per foot	0.041	155.18	1" diam. well			Did well go dry?	Yes	<b>&gt;</b>		BIC	•						
	0.163	616.95	2" diam. well			Final Depth to	Water (prior to tu	rning off pump):	8.21			NAVI - Junior					
	0.653	2,471.60	4" diam. well				essure (At time of	sampling) in mm,	/Hg:								
			1.58		11200	A CONTRACTOR OF THE PARTY OF TH	ETER READINGS:	1110	J	1	ns margadi senti			egent of the con-			
Time	1612	15/7	1522	1527	1532	1537	1547	1547	1552	1567	1005	1607	1613	1617			
Rate (ml/min)	100	X	100	100	100	*	100	100	100	100	100	#	100	100			
Depth to Water (ft. TOC)	7.80	r and a second	7.25	7.44	7.62		7.58	7.70	7.94	4.03	8.07		7.75				
Temperature (°C)	16.52		17.63	17.48	17.38		1623	15.93	15.67	15.42	15.43		16.93	1700			
рН	7.01		7.10	7.05	7.04		7.12	7.04	7.09	7.04	7.05	100	7.11	7.09			
Conductivity (mS/cm)	0.459		0.449	0.448	0.444		0.448	0.453	0,456	0.451	0.449		0,452	0.440			
Dissolved Oxygen (mg/L)	3.36		2.77	6.50	6.33		U.21	6.98	6.56	6,23	5.92		3.43	7.21			
			. 1	192		+ + -	130	391	25.1	24.0				732			
Turbidity (NTU)	24.7		N6.1	11.7	83.6						25.6	-	88.0				
ORP (mV)	-15		-36	-9	1-14		-2	-4	-30	-20	1-18		5.0	21			
SAMPLE INFORMATION	100				D.A.Vst. ID				water color, clarit		-L.	-					
Sample List: Sample ID:		<u> </u>	Duplicate ID Sample Time			A Pause to Clean horiba											
Diss. Chromium & Vanadium  Diss. Hexavalent Chromium	_	Start Time	$-\Lambda$	<del>)</del>	Total Bottles			1635 well went DRY									
Total Cyanide	<del>_</del> ,	MS/MSI		No 🌂	Sampled By			- Not Sample									
Free Cyanide	₹	Duplicate	_	No A	MS/MSD ID			Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)									
Total Dissolved Solids	_	Total Bottle		ς	Sample Time	_		riee Cyanide Su		TABILITY	v// Megative (NO	change)	1100				
Hardness	_	Sampled By	<del>- /\ \</del>	) -	Total Bottle			pH	DO	Turb.	Cond	ORP					
VOCs (Dichlorobenzenes)			*		Sampled By	:	/	± 0.1									

Ashland Glens Falls, NY Quarterly Groundwater & Surface Water Sa

Sampling Personnel:	-elyn Fo	ster			and the state of t	nawater & St	uriace water Samplii								
Date: 6/11/18	-1711	) / LI					Well ID:	MW-06	73						
Weather: 5uny							Original Install Depth:	6.5	feet						
Time In: 1413			Time Out:	1645			Screen Length:	4.0	feet						
				1677			Well Diameter:	12	inches						
Depth to Water (from TOC):	(feet)	T 7 7	7			WELL INFO	DRMATION				granding of the second				
Depth to Water(From TOC) Wit		6.4	, <u>(</u>			Well Type: Flushmount Stick-Up									
Pump in place: Total Depth (from TOC):	(feet)	6.9	2KF 8.2	3		Well Locked: Yes X									
Length of Water Column :	(feet)	1	560			Measuring Point	t Marked: Y	es 🔀		No 🔲					
			90			Well Condition: Good Poor									
WELL WATER INFORMATION						Well Condition C	& U	<del>56</del> 8							
Volume of Water in Well:	(mL or gal)	0.5	7. C-			EVACUATION IN						Traffer II (p. =			
Pumping Rate of Pump:	(mL/min)	100				Pump ID: Lie pump S/N # 4068 Pump Size: 1/10 x 3/500 Depth of Pump Intake: 7.45									
Total Volume Removed:	(mL or gal)	100	,			Method:	Bailer	Perista		Blad		Other			
Volume Measurements	(gal)	(mi)	Tubing/Well Si			Tubing Used:	Teflon	Polyethyle	ne 🗡		V/A				
Tubing Volume per foot		11.36	1/4" ID tubing	ze		Water Quality M Sampling	eter (type/Serial Number):		U-52	55381	J998T				
Well Volume per foot		155.18	1" diam. well			Method: Did well go	Bailer	Peristal	tic 🔯	Blade	der	Other			
·	0.163	616.95	2" diam. well			drv?	Yes 🔀		No U						
	0.653	2,471.60	4" diam. well			ı	ater (prior to turning off pump)								
			7 Gigin. Well			Barometric Pressi FIELD PARAMETE	ure (At time of sampling) in mm	/Hg:	•						
Time	バコス	1627	1632						T	T					
Rate (ml/min)	160	100	100						-		-				
Depth to Water (ft. TOC)	9.02	8.02	821						+	ļ					
Temperature (°C)	1702	16.94	16.82												
рН	7.09	7.09	7.10												
Conductivity (mS/cm)	0.441	0.432													
Dissolved Oxygen (mg/L)	4.16		0.430												
Furbidity (NTU)	4	6.98	6.88												
	27.2	19.9	134												
ORP (mV)	71	31	20										$\Rightarrow$		
AMPLE INFORMATION							Observations (w	ater color, clarit	ty, etc.);						
Sample List: Sample ID:			Duplicate ID:												
Diss. Chromium & Vanadium  Diss. Hexavalent Chromium  Total Cyanide \[ \frac{V}{V} \]		Start Time:	-N-	)	Sample Time:		1673	1635 well went dry							
		End Time: Total Bottles:													
Free Cyanide		MS/MSD: Duplicate:		No 🔯	Sampled By:										
Total Dissolved Solids	-	Total Bottles:	7/1	NS (784)	MS/MSD ID:		Free Cyanide Sulf	Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change)							
Hardness	_	Sampled By:	- 12	J	Sample Time:  Total Bottles:	$\rightarrow$		UNIT STABILITY							
VOCs (Dichlorobenzenes)	- 1		-		Sampled By:		pH	DO	Turb.	Cond	ORP	~			
					запіріва ву:		± 0,1	± 10%	± 10%, <10NTU	± 3%	± 10 mV	Page 3 of	3		

Ashland Glens Falls, NY

**Quarterly Groundwater & Surface Water Sampling Event** Paul Girafalco MW.OB23 Sampling Personnel: Well ID: 6/13/18 Original Install Depth: 6,5 feet Date: Sunny 70's Screen Length: feet Weather: 738 400 a Well Diameter: Time Out: inches Time In: 6/13 WELL INFORMATION Well Type: Stick-Up  $\forall$ Flushmount Depth to Water (from TOC): (feet) 6,10 Depth to Water(From TOC) With 6.08 X (feet) Well Locked: Yes No Pump in place: 8.23 Measuring Point Marked: X No Total Depth (from TOC): (feet) 2.13 X Well Condition: Good Poor Length of Water Column: (feet) Well Condition Comments: WELL WATER INFORMATION **EVACUATION INFORMATION** 1,314 4068 Pump Size: 1/4 x 3/8 (m)L or gal) Volume of Water in Well: Pump ID: GCO Purp 7,26 Depth of Pump Intake: Evacuation 100 Peristaltic 🔀 Bailer Bladder Other Pumping Rate of Pump: (mL/min) Method: Polyethylene X N/A Total Volume Removed: (mL or gal) C.363.6 Tubing Used: Teflon Water Quality Meter (type/Serial Number): Horiba USA DMD948VH Tubing/Well Size **Volume Measurements** (gal) Sampling Other Peristaltic 🖊 Bailer Bladder 1/4" ID tubing Tubing Volume per foot 0.003 11.36 Method: No 📈 Did well go dry? Yes 155.18 1" diam. well Well Volume per foot 0.041 6.83 Final Depth to Water (prior to turning off pump): 2" diam. well 0.163 616.95 753.704 Barometric Pressure (At time of sampling) in mm/Hg: 4" diam. well 0.653 2,471.60 **FIELD PARAMETER READINGS:** 832 837 749 817 822 827 747 751 753 755 757 802 367 812 Time 100 160 125 125 100 100 100 100 100 125 125 125 100 Rate (ml/min) 125 6.63 6.85 6.66 6.68 6.74 6,45 6.46 6.47 6.57 6.59 6.61 6.72 Depth to Water (ft, TOC) 6.51 6.55 15.30 19.39 16.30 15.88 15,33 15.37 15.61 15.54 15,48 15.50 Temperature (°C) 15,48 15,47 15,47 6.84 5.55 6.05 5.80 5.82 5.64 5.75 5.81 6.12 6.20 5,72 5,62 5.68 5,79 0.677 6,688 0.708 0,693 0.693 0.681 0.678 Conductivity (mS/cm) 0.709 0.696 0.694 0,690 0.690 0,688 0.701 5,27 2,67 0.84 0.15 3.72 2.93 0.86 Dissolved Oxygen (mg/L) 3.30 2,83 2,41 1.92 172 1,52 1.57 0.9 0,9 0.7 0.8 1,3 0.9 0.8 Turbidity (NTU) 0.8 0.9 0.9 0,6 0.6 0.7 0.6 261 293 100 186 11 281 264 147 196 188 161 ORP (mV) Observations (water color, clarity, etc.): SAMPLE INFORMATION Sample ID: MW-0B23\_20180613 Duplicate ID: Sample List: cleur Diss. Chromium & Vanadium Start Time: Sample Time: 856 Total Bottles: Diss. Hexavalent Chromium End Time: Total Cyanide MS/MSD: Yes No 🔀 Sampled By: Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) No 🗷 MS/MSD ID: Free Cyanide Duplicate: Yes UNIT STABILITY Total Dissolved Solids Sample Time Total Bottles: Total Bottles: ORP Hardness Sampled By: pН Page 1 of a VOCs (Dichlorobenzenes) Sampled By: ± 10%, <10NTU ± 3% ± 10 mV

Ashland Glens Falls, NY

**Quarterly Groundwater & Surface Water Sampling Event** Sampling Personnel: Poul Gicafalco Well ID: MW-OB23 6/13/18 6.5 Original Install Depth: feet 705 Weather: Sunny Screen Length: 4 feet 738 Time In: 857 Well Diameter: Time Out: inches WELL INFORMATION 6/11 6/13 Depth to Water (from TOC): Well Type: (feet) 6.67 6.10 Flushmount Stick-Up Depth to Water(From TOC) With (feet) 6.08 Well Locked: Yes No Pump in place: 8.23 Total Depth (from TOC): (feet) Measuring Point Marked: × Yes No 2.13 Length of Water Column : Z (feet) Well Condition: Good Poor Well Condition Comments: WELL WATER INFORMATION EVACUATION INFORMATION 1,314 7.20 Pump Size: 1/4 1/8 (misor gal) 4668 Volume of Water in Well: Pump ID: Depth of Pump Intake: Evacuation 100 Pumping Rate of Pump: Peristaltic 📝 (mL/min) Bailer Bladder Other Method: C.363,6 (mL)or gal) N/A Total Volume Removed: Polyethylene 🔀 Tubing Used: Teflon UM0 948 VH Heriby USD Volume Measurements Tubing/Well Size (gal) (ml) Water Quality Meter (type/Serial Number): Sampling Peristaltic 📝 Bailer Bladder Other 1/4" ID tubing Tubing Volume per foot 0.003 11.36 Method: No 🔏 Did well go dry? Yes Well Volume per foot 0.041 155.18 1" diam. well 6.83 0.163 616.95 2" diam. well Final Depth to Water (prior to turning off pump): 753.704 0.653 2,471.60 4" diam. well Barometric Pressure (At time of sampling) in mm/Hg: FIELD PARAMETER READINGS: 852 842 Time 847 Rate (ml/min) 100 100 100 6.79 4.71 6,82 Depth to Water (ft. TOC) 15.15 Temperature (°C) 15,23 15.17 6.19 6.19 6.23 0.676 Conductivity (mS/cm) 0.675 0.674 0.67 Dissolved Oxygen (mg/L) 0.68 0.68 0.6 Turbidity (NTU) 0.7 0.6 25 ORP (mV) 23 SAMPLE INFORMATION Observations (water color, clarity, etc.): Sample ID: MW-0823\_2018 Duplicate ID: Sample List: Diss. Chromium & Vanadium Start Time: Diss. Hexavalent Chromium **End Time:** Total Bottles Total Cyanide No 🔀 MS/MSD: Yes Sampled By: Free Cyanide Duplicate: Yes MS/MSD ID: Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) 🔌 🛝 Total Dissolved Solids UNIT STABILITY **Total Bottles:** Sample Time: PG Hardness Sampled By: Total Bottles: pН Turb. Cond Page 2 of 2 Sampled By: VOCs (Dichlorobenzenes) ±0.1 ± 10%, <10NTU



Attachment 2 – Laboratory Analytical Reports



27-Jun-2018

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

Re: Ashland Glens Falls, NY Work Order: 18061180

Dear Cassie,

ALS Environmental received 10 samples on 19-Jun-2018 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

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

ADDRESS: 3352 128th Avenue, Holland, MI, USA PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish

Senior Project Manager

### **Report of Laboratory Analysis**

Certificate No: MN 998501

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 🚴

ALS Group, USA

Date: 27-Jun-18

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

Work Order: 18061180

# **Work Order Sample Summary**

Lab Samp ID Client Sample ID	<u>Matrix</u>	Tag Number	<b>Collection Date</b>	Date Received	Hold
18061180-01 DUP02_20180611	Water		06/11/18	06/19/18 09:30	
18061180-02 DUP02_20180612	Water		06/12/18	06/19/18 09:30	
18061180-03 SG-11_20180611	Water		06/11/18 15:00	06/19/18 09:30	
18061180-04 SW-04_20180612	Water		06/12/18 14:55	06/19/18 09:30	
18061180-05 SW-03_20180612	Water		06/12/18 13:00	06/19/18 09:30	
18061180-06 SW-02_20180612	Water		06/12/18 11:20	06/19/18 09:30	
18061180-07 SW-01_20180612	Water		06/12/18 10:10	06/19/18 09:30	
18061180-08 EB20180611	Water		06/11/18 09:05	06/19/18 09:30	
18061180-09 EB20180612	Water		06/12/18 10:37	06/19/18 09:30	
18061180-10 SG-7_20180611	Water		06/11/18 14:45	06/19/18 09:30	

**ALS Group, USA** Date: 27-Jun-18

**Client:** EHS Support LLC **QUALIFIERS,** Ashland Glens Falls, NY **Project: ACRONYMS, UNITS** 

WorkOrder: 18061180

WorkOrder:	18061180
Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
О	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S U	Spike Recovery outside laboratory control limits
X	Analyzed but not detected above the MDL  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

#### **Units Reported** Description

SW

Micrograms per Liter  $\mu g \! / \! L$ 

SW-846 Update III

### **ALS Group, USA**

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

**Work Order:** 18061180

**Case Narrative** 

Samples for the above noted Work Order were received on 06/19/18. 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.

#### Wet Chemistry:

No deviations or anomalies were noted.

	EHS Support LLC Ashland Glens Falls, NY	r					Work Or	der: 18061180
Lab ID: Client Sample ID	18061180-01A : DUP02_20180611				Co	ollection Date: Matrix:	06/11/18 WATER	
Analyses		Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
CYANIDE, FREE Cyanide, Free		ND		OIA 167 2.0	<b>77</b> μg/L	1		Analyst: <b>MB</b> 06/22/18 01:00 PM
Lab ID: Client Sample ID	18061180-02A : DUP02_20180612				Co	ollection Date: Matrix:	06/12/18 WATER	
Analyses		Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
CYANIDE, FREE Cyanide, Free		ND		OIA 167 2.0	<b>77</b> μg/L	1		Analyst: <b>MB</b> 06/22/18 01:00 PM
Lab ID: Client Sample ID	18061180-03A : SG-11_20180611				Co	ollection Date: Matrix:	06/11/18 WATER	3:00:00 PM
Analyses		Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
CYANIDE, FREE Cyanide, Free		ND		OIA 167 2.0	<b>77</b> μg/L	1		Analyst: <b>MB</b> 06/22/18 01:00 PM
Lab ID: Client Sample ID	18061180-04A : SW-04_20180612				Co	ollection Date: Matrix:	06/12/18 WATER	2:55:00 PM
Analyses		Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
CYANIDE, FREE Cyanide, Free		ND		OIA 167 2.0	<b>77</b> μg/L	1		Analyst: <b>MB</b> 06/22/18 01:00 PM
Lab ID: Client Sample ID	18061180-05A : SW-03_20180612				Co	ollection Date: Matrix:	06/12/18 WATER	1:00:00 PM
Analyses		Result	Qual	Report Limit	Units	Dilution Factor		Date Analyzed
CYANIDE, FREE Cyanide, Free		ND		OIA 167 2.0	<b>77</b> μg/L	1		Analyst: <b>MB</b> 06/22/18 01:00 PM

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

Client:	EHS Support LLC	<b>Work Order:</b> 18061180
D • 4	A -1-1 1 C1 E -11 - NIX	

**Project:** Ashland Glens Falls, NY

**Lab ID:** 18061180-06A **Collection Date:** 06/12/18 11:20:00 AM

Client Sample ID: SW-02\_20180612 Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE Cyanide, Free	ND		OIA 16	<b>77</b> μg/L	1	Analyst: <b>MB</b> 06/22/18 01:00 PM

**Lab ID:** 18061180-07A **Collection Date:** 06/12/18 10:10:00 AM

Client Sample ID: SW-01\_20180612 Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			OIA 167	77		Analyst: MB
Cyanide, Free	ND		2.0	μg/L	1	06/22/18 01:00 PM

**Lab ID:** 18061180-08A **Collection Date:** 06/11/18 9:05:00 AM

Client Sample ID: EB20180611 Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			OIA 16	77		Analyst: MB
Cvanide, Free	ND		2.0	ua/L	1	06/22/18 01:00 PM

**Lab ID:** 18061180-09A **Collection Date:** 06/12/18 10:37:00 AM

Client Sample ID: EB20180612 Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			OIA 167	77		Analyst: <b>MB</b>
Cyanide, Free	ND		2.0	μg/L	1	06/22/18 01:00 PM

**Lab ID:** 18061180-10A **Collection Date:** 06/11/18 2:45:00 PM

Client Sample ID: SG-7\_20180611 Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE Cyanide, Free	ND		OIA 167 2.0	<b>77</b> μg/L	1	Analyst: <b>MB</b> 06/22/18 01:00 PM

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

Client: EHS Support LLC

**Work Order:** 18061180

**Project:** Ashland Glens Falls, NY

## QC BATCH REPORT

Date: 27-Jun-18

Batch ID: <b>R238706</b>	Instrument ID FS3	100		Metho	d: <b>OIA 16</b>	77						
MBLK	Sample ID: MB-R23870	6-R238706	1			Uni	its: µg/L	•	Anal	ysis Date: 0	6/22/18 01	1:00 PM
Client ID:		Run ID:		SeqN	No: <b>510</b>	8338	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-R2387	06-R23870	6			Uni	its: µg/L		Anal	ysis Date: 0	6/22/18 01	1:00 PM
Client ID:				_180622B			No: <b>510</b>		Prep Date:	,	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free		50.48	2.0	50		0	101	82-132		0		
MS	Sample ID: <b>18061180-0</b>	3AMS				Uni	its: µg/L		Anal	ysis Date: 0	6/22/18 01	1:00 PN
Client ID: SG-11_20	·		FS3100	_180622B			No: <b>510</b>		Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free		44.2	2.0	50	-0.	11	88.6	82-130		0		
MS	Sample ID: <b>18061180-0</b>	5AMS				Uni	its: µg/L	_	Anal	ysis Date: 0	6/22/18 01	1:00 PN
lient ID: <b>SW-03_20180612</b>			FS3100	_180622B			No: <b>510</b>		Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free		48.99	2.0	50	0.2	25	97.5	82-130		0		
MSD	Sample ID: <b>18061180-0</b>	3AMSD				Uni	its: µg/L	_	Anal	ysis Date: 0	6/22/18 01	1:00 PN
Client ID: <b>SG-11_20</b>			FS3100	_180622B			No: <b>510</b>		Prep Date:	, o. o 2 a. o.	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free		46.48	2.0	50	-0.	11	93.2	82-130	44	.2 5.03	11	
MSD	Sample ID: <b>18061180-0</b>	5AMSD				Uni	its: µg/L		Anal	ysis Date: 0	6/22/18 01	I:00 PM
Client ID: SW-03_20			FS3100	_180622B			No: <b>510</b>		Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	(	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free		49.06	2.0	50	0.2	25	97.6	82-130	48.9	99 0.143	11	
	oles were analyzed in this	s batch:	01. 18 <sup>0</sup> 04. 18 <sup>0</sup> 07.	061180- A 061180- A 061180-	02 18 05 18	806118 2A 806118 5A 806118	30-	03 18 06	061180- A 061180-			

**Client:** EHS Support LLC

**Work Order:** 18061180

**Project:** Ashland Glens Falls, NY

QC BATCH REPORT

### ALS Environmental

3352 128th Ave, Holland, MI 49424

Phone: 616 399 6070 FAX: 616 399 6185

Shipping Number#		
PAGE	of	\

Project Name: Glens Falls, NY	Project Number:	GJEN!	FA181-6	400										A	malysi	e Requ	ested	900	
Site Project Manager: Cassie ReuterCompany: EHS Support LLC Email: Cassie.Reuter@ehs-support.com Phone: 608-851-0626					ers	(													
Project Manager (Billing): James Vondracek Company: Ashland Company/Address: Ashland Inc EHS&RC - DA5 Phone: 614-790-6146 5200 Blazer Parkway City, State, Zip: Dublin, OH 43017 Email: jevondracek@ashland.com				lumber of Containers	ree Cyanide (OIA-1677)														
Sample I.D.	Date	Time	LAB ID	Matrix	4	250 mL													REMARKS
DUP02_20180611	6/11/18		water	OW		X													Kun as DUP
Dupoz-20180612	6/12/18	~	Water	GWa		X													Kun as DUP
56-11-20180611	6/11/18	1500	Surcace Water	610GC	3	X													Mun extra both leas m s/msd
SW-04,20180617	6/12/18	1455		610 W		X													<b>T</b>
JW-03-2080612	6/12/18	1300		ENU	J	X													Run extra bottleagms/msd
5W-02-20180612	6/17/18	1120	V	610 CC	١	X													
5W-01_20180612	6/12/18	1010	Sunace	6tc/86	1	X													
EB-20180611	6/11/18	905		Stelland	1	X													Rojas Equitment blank
EB_20180612	6/12/18	1037		Water	1	8													Remos Equitment blank
56-1 20180C11	6/11/18	1445	Sukaa	6Ucter	1	X													<b>\</b>
* -														:					
TURNAROUND REQUIREMEN		l .	T REQUIREM						Comm	ents/S	pecial I	nstruct	ions:						
24 hr 48 hr	5 BD		I. Routine Rep			nd Met	hod Bla	nk											
X Standard (15 BD) Provide FAX Preliminary R	Results		(Surrogate, II. Results w/	-		MSD	98 Fea)												
Requested Report Date:	<b>Courts</b>		III. Results (w	-															
Invoice Information			Summarie	<b>s</b> )															
P.O.#	***************************************		IV. ASP-B																
Bill to:		<u></u>	V. CLP EDD?:																•
RELINQUISHED BY:  RECEIVED BY:							_	RELII	NQUIS	HEQ F	sy: /				RECE	IVED	BY	~	
Signature: Line Signature Bully CMC					14	we	k	Signati	ure:	1	A	1		1	Signati			-4-	h
Printed Name: Hihe Folund Printed Name: Br /AN71)				411	iak		Printec	Name	1	SINA	Ā Ā	We	ا کے	Printed	l Name	L	tur_	DIERENCA	
Firm: Auteu Gross Firm: A.J.							Firm:	1	41	5.	- /	1		Firm:			415		
Date/Time: 6-15-16 1	1525	Date/Time	915/18	<u>}</u>		<u>گ</u>	25	Date/T	ime:	الما	8/12	3_	60	Ø	Date/T	ime:	ulat	18 0	930
			7																

ORIGIN ID: SCHA SHIPPING ALS ENVIRONMENTAL 23 A WALKER WAY SECTION 2 ALBANY, NY 12205 ALBANY, NY 12205 BHIP DATE: 18.1018 ACTHET: 18.90 LB CAD: 528485/CAFE3111 DINS: 14x14x10 IN

BILL RECIPIENT

10 SAMPLE RECEIVING ALS ENVIRONMENTAL 3352 128TH AVENUE

# HOLLAND MI 49424

(818) 300-6070

APRIL



Feet 532 6470 8310 4308 TUE - 19 JUN 10:30A PRIORITY OVERNIGHT

(X HLMA

49424 MI-US GRR

1



CISTODY SEAL



## ALS Group, USA

Client Name: EHS SUPPORT-ARGYLE

### Sample Receipt Checklist

Date/Time Received:

19-Jun-18 09:30

Work Order:	<u>18061180</u>				Received by	y:	KRW	<u> </u>			
Checklist comp	oleted by <u>Keith Wierenga</u>	1	9-Jun-18 Date	-	Reviewed by:	Tom £					19-Jun-18
Matrices: Carrier name:	Water FedEx					g				l	
Shipping contain	iner/cooler in good condition?		Yes	✓	No 🗌	Not P	resent				
Custody seals i	intact on shipping container/coole	r?	Yes		No 🗌	Not P	resent	<b>✓</b>			
Custody seals i	intact on sample bottles?		Yes		No 🗌	Not P	resent	<b>~</b>			
Chain of custoo	dy present?		Yes	✓	No 🗌						
Chain of custoo	dy signed when relinquished and	eceived?	Yes	<b>✓</b>	No 🗌						
Chain of custoo	dy agrees with sample labels?		Yes	<b>✓</b>	No 🗌						
Samples in pro	per container/bottle?		Yes	<b>✓</b>	No 🗆						
Sample contain	ners intact?		Yes	<b>✓</b>	No 🗆						
Sufficient samp	ole volume for indicated test?		Yes	<b>✓</b>	No 🗆						
All samples rec	eived within holding time?		Yes	<b>✓</b>	No 🗆						
Container/Tem	p Blank temperature in compliand	e?	Yes	<b>~</b>	No 🗆						
Sample(s) rece	eived on ice? )/Thermometer(s):		Yes 4.0/4.0	<b>V</b>	No 🗆		SR2				
Cooler(s)/Kit(s)			4.0/4.0	<u>U</u>			<u>SIXZ</u>				
	ple(s) sent to storage:		6/19/20	18 1	:32:13 PM						
Water - VOA vi	als have zero headspace?		Yes		No _	No VOA v	rials subm	nitted	✓		
Water - pH acc	eptable upon receipt?		Yes	✓	No 🗌	N/A					
pH adjusted? pH adjusted by	:		Yes		No 🗹	N/A					
Login Notes:											
====	:=======	=====		_	====						====
Client Contacte	ed:	Date Contacted:			Person	Contacted	:				
Contacted By:		Regarding:									
Comments:											
CorrectiveActio	on:								91	RC Pa	ge 1 of 1
									Ji	a	90 101 1

2

3

5

7

9

11

13

14



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: 480-137307-1

Client Project/Site: Hercules Glens Falls 2Q18

Revision: 1

For:

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

Attn: Mr. Jim Vondracek

Addi Barrott

Authorized for release by: 8/7/2018 9:35:21 AM

Eddie Barnett, Project Manager I (912)250-0280

eddie.barnett@testamericainc.com

.....LINKS .....

Review your project results through
Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

## 2

# **Table of Contents**

Cover Page	1
Table of Contents	
Definitions/Glossary	3
	4
Detection Summary	6
Client Sample Results	8
Surrogate Summary	13
QC Sample Results	14
QC Association Summary	21
Lab Chronicle	24
Certification Summary	28
Method Summary	29
Sample Summary	30
Chain of Custody	31
Receipt Checklists	36

3

4

9

10

12

13

14

### **Definitions/Glossary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

#### **Qualifiers**

#### **GC/MS VOA**

Qualifier	Qualifier	Description

U Indicates the analyte was analyzed for but not detected.

#### **Metals**

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.
F2	MS/MSD RPD exceeds control limits

#### **General Chemistry**

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### **Glossary**

ND

PQL

QC

RER RL

RPD TEF

TEQ

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

Not Detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

**Practical Quantitation Limit** 

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

**Quality Control** 

3

Δ

5

6

7

10

4.0

12

14

#### **Case Narrative**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

Job ID: 480-137307-1

**Laboratory: TestAmerica Buffalo** 

**Narrative** 

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 2Q18

Report Number: 480-137307-1

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.

This report has been revised on 08/07/18 per client request to report laboratory samples MW-OB17\_20180611 (480-137307-1), MW-OB21\_20180611 (480-137307-2), MW-OB18\_20180612 (480-137307-8), and MW-OB19\_20180612 (480-137307-9) separately.

#### **RECEIPT**

The samples were received on 06/13/2018; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 0.8° C.

#### **VOLATILE ORGANIC COMPOUNDS**

Samples MW-36D\_20180612 (480-137307-10), DUP01\_20180612 (480-137307-11), TRIP BLANK (480-137307-19), EB\_20180612 (480-137307-20) and AW-B18\_20180612 (480-137307-21) were analyzed for Volatile Organic Compounds in accordance with EPA SW846 Method 8260C. The samples were analyzed on 06/19/2018 and 06/20/2018.

The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW-36D\_20180612 (480-137307-10), DUP01\_20180612 (480-137307-11), (480-137307-A-10 MS) and (480-137307-A-10 MSD). Elevated reporting limits (RLs) are provided.

The following samples were diluted due to the abundance of non-target analytes: AW-B18\_20180612 (480-137307-21), AW-B18\_20180612 (480-137307-21[MS]) and AW-B18\_20180612 (480-137307-21[MSD]). Elevated reporting limits (RLs) are provided.

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

#### **METALS (ICPMS) - DISSOLVED**

Samples AW-C2\_20180612 (480-137307-12), MW-26\_20180612 (480-137307-13), SW-01\_20180612 (480-137307-14), SW-02\_20180612 (480-137307-15), SW-03\_20180612 (480-137307-16), DUP02\_20180612 (480-137307-17), SW-04\_20180612 (480-137307-18), EB\_20180612 (480-137307-20) and AW-B18\_20180612 (480-137307-21) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared on 06/14/2018 and 06/28/2018 and analyzed on 06/23/2018 and 06/28/2018.

Dissolved Vanadium recovered high for the MSD of sample MW-26\_20180612MSD (480-137307-13) in batch 480-422306. Dissolved Chromium exceeded the RPD limit for the MSD of sample AW-B18\_20180612MSD (480-137307-21) in batch 480-421372. Refer to the QC report for details.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

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

#### **HARDNESS**

Samples SW-01\_20180612 (480-137307-14), SW-02\_20180612 (480-137307-15), SW-03\_20180612 (480-137307-16), DUP02\_20180612 (480-137307-17), SW-04\_20180612 (480-137307-18) and EB\_20180612 (480-137307-20) were analyzed for hardness in accordance with SM 2340C. The samples were analyzed on 06/25/2018.

TestAmerica Buffalo 8/7/2018 (Rev. 1)

#### **Case Narrative**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

Job ID: 480-137307-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

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

#### **TOTAL DISSOLVED SOLIDS**

Samples SW-01\_20180612 (480-137307-14), SW-02\_20180612 (480-137307-15), SW-03\_20180612 (480-137307-16), DUP02\_20180612 (480-137307-17), SW-04\_20180612 (480-137307-18) and EB\_20180612 (480-137307-20) were analyzed for total dissolved solids in accordance with SM 2540C. The samples were analyzed on 06/14/2018.

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

#### **TOTAL CYANIDE**

Samples DUP01\_20180611 (480-137307-3), DUP02\_20180611 (480-137307-4), SG-11\_20180611 (480-137307-5), SG-7\_20180611 (480-137307-6), EB\_20180611 (480-137307-7), AW-C2\_20180612 (480-137307-12), MW-26\_20180612 (480-137307-13), SW-01\_20180612 (480-137307-14), SW-02\_20180612 (480-137307-15), SW-03\_20180612 (480-137307-16), DUP02\_20180612 (480-137307-17), SW-04\_20180612 (480-137307-18), EB\_20180612 (480-137307-20) and AW-B18\_20180612 (480-137307-21) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 06/15/2018.

Cyanide, Total recovered low for LLCS 680-527920/3-A. Refer to the QC report for details.

Cyanide, Total recovered low for the MS of sample AW-B18\_20180612MS (480-137307-21) in batch 680-528013. Cyanide, Total recovered low for the MSD of sample AW-B18\_20180612MSD (480-137307-21) in batch 680-528013. Refer to the QC report for details.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Sample AW-B18\_20180612 (480-137307-21)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

9

4

5

7

8

10

4.0

13

14

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

 Client Sample ID: DUP01\_20180611
 Lab Sample ID: 480-137307-3

 Analyte
 Result
 Qualifier
 RL
 MDL
 Unit
 Dil Fac
 D
 Method
 Prep Type

 Cyanide, Total
 0.011
 0.010
 0.0025
 mg/L
 1
 9012B
 Total/NA

No Detections.

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.0032	J	0.010	0.0025	mg/L	1	_	9012B	Total/NA

Client Sample ID: SG-7\_20180611 Lab Sample ID: 480-137307-6

No Detections.

No Detections.

No Detections.

No Detections.

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium		1.5	0.36	ug/L	1	_	6020A	Dissolved
Dissolved Vanadium	3.9 J	4.0	1.2	ug/L	1		6020A	Dissolved
Cyanide, Total	0.025	0.010	0.0025	mg/L	1		9012B	Total/NA

Client Sample ID: MW-26 20180612 Lab Sample ID: 480-137307-13

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Dissolved Chromium	11	1.5	0.36 ug/L		6020A	Dissolved
Dissolved Vanadium	84	4.0	1.2 ug/L	1	6020A	Dissolved
Cyanide, Total	0.062	0.010	0.0025 mg/L	1	9012B	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	0.82	J	1.5	0.36	ug/L		_	6020A	Dissolved
Cyanide, Total	0.010		0.010	0.0025	mg/L	1		9012B	Total/NA
Hardness as calcium carbonate	40000		4000	1100	ug/L	1		SM 2340C	Total/NA
Total Dissolved Solids	130		10	4.0	mg/L	1		SM 2540C	Dissolved

This Detection Summary does not include radiochemical test results.

Project/Site: Hercules Glens Falls 2Q18

Client Sample ID: SW-02 20180612 (Continued)

TestAmerica Job ID: 480-137307-1

Lab Sample ID: 480-137307-15

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Dissolved Chromium	0.52 J	1.5	0.36 ug/L		6020A	Dissolved
Hardness as calcium carbonate	36000	4000	1100 ug/L	1	SM 2340C	Total/NA
Total Dissolved Solids	100	10	4.0 mg/L	1	SM 2540C	Dissolved

Client Sample ID: SW-03\_20180612 Lab Sample ID: 480-137307-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	32000		4000	1100	ug/L	1	_	SM 2340C	Total/NA
Total Dissolved Solids	100		10	4.0	mg/L	1		SM 2540C	Dissolved

Client Sample ID: DUP02\_20180612 Lab Sample ID: 480-137307-17

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Hardness as calcium carbonate	32000	4000	1100 ug/L	1 SM 2340C	Total/NA
Total Dissolved Solids	110	10	4.0 mg/L	1 SM 2540C	Dissolved

Client Sample ID: SW-04\_20180612 Lab Sample ID: 480-137307-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Chromium	0.37	J	1.5	0.36	ug/L		_	6020A	Dissolved
Hardness as calcium carbonate	32000		4000	1100	ug/L	1		SM 2340C	Total/NA
Total Dissolved Solids	110		10	4.0	mg/L	1		SM 2540C	Dissolved

#### Lab Sample ID: 480-137307-19 **Client Sample ID: TRIP BLANK**

No Detections.

Client Sample ID: EB 20180612 Lab Sample ID: 480-137307-20

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
Total Dissolved Solids	21	10	4.0 mg/L	1 SM 2540C	Dissolved

**Client Sample ID: AW-B18\_20180612** Lab Sample ID: 480-137307-21

Analyte	Result Qualifier	RL	MDL Unit	t Dil Fac	D Method	Prep Type
1,2-Dichlorobenzene	20	2.0	1.6 ug/L		8260C	Total/NA
1,4-Dichlorobenzene	2.1	2.0	1.7 ug/L	_ 2	8260C	Total/NA
Dissolved Chromium	0.61 JF2	1.5	0.36 ug/L	_ 1	6020A	Dissolved
Dissolved Vanadium	3.3 J	4.0	1.2 ug/L	_ 1	6020A	Dissolved
Cvanide, Total	0.34	0.10	0.025 mg/l	L 10	9012B	Total/NA

This Detection Summary does not include radiochemical test results.

6

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

Matrix: Water

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

Client Sample ID: DUP01 20180611 Lab Sample ID: 480-137307-3 Date Collected: 06/11/18 00:00 **Matrix: Water** 

Date Received: 06/13/18 01:15

**General Chemistry** RL **MDL** Unit Analyte Result Qualifier D Prepared Analyzed Dil Fac 0.010 0.0025 mg/L 06/15/18 05:30 06/15/18 11:00 Cyanide, Total 0.11

Client Sample ID: DUP02\_20180611 Lab Sample ID: 480-137307-4

Date Collected: 06/11/18 00:00

Date Received: 06/13/18 01:15

**General Chemistry** Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac Cyanide, Total 0.010 U 0.010 06/15/18 05:30 06/15/18 11:01 0.0025 mg/L

Lab Sample ID: 480-137307-5 Client Sample ID: SG-11 20180611

Date Collected: 06/11/18 15:00 Date Received: 06/13/18 01:15

**General Chemistry** Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Cyanide, Total 0.0032 J 0.010 0.0025 ma/L 06/15/18 05:30 06/15/18 11:04

Client Sample ID: SG-7\_20180611 Lab Sample ID: 480-137307-6

Date Collected: 06/11/18 14:45

Date Received: 06/13/18 01:15

**General Chemistry** Analyte Result Qualifier RL **MDL** Unit D Analyzed Dil Fac Prepared 0.010 06/15/18 05:30 06/15/18 11:07 Cyanide, Total 0.010 U 0.0025 mg/L

Lab Sample ID: 480-137307-7 Client Sample ID: EB 20180611

Date Collected: 06/11/18 09:05 Date Received: 06/13/18 01:15

**General Chemistry** Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Cyanide, Total 0.010 U 0.010 0.0025 mg/L 06/15/18 05:30 06/15/18 11:08

Client Sample ID: MW-36D\_20180612 Lab Sample ID: 480-137307-10

Date Collected: 06/12/18 10:22

Date Received: 06/13/18 01:15

Method: 8260C - Volatile Organic Compounds by GC/MS Result Qualifier Analyte RL**MDL** Unit D Prepared Analyzed Dil Fac 10 U 1,2-Dichlorobenzene 10 7.9 ug/L 06/19/18 04:23 10 1.3-Dichlorobenzene 10 U 10 06/19/18 04:23 10 7.8 ug/L 1,4-Dichlorobenzene 10 U 10 8.4 ug/L 06/19/18 04:23 10 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 88 80 - 120 06/19/18 04:23

10 1,2-Dichloroethane-d4 (Surr) 100 77 - 120 06/19/18 04:23 10 4-Bromofluorobenzene (Surr) 96 73 - 120 06/19/18 04:23 10 Dibromofluoromethane (Surr) 95 75 - 123 06/19/18 04:23 10

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

Client Sample ID: DUP01\_20180612

Lab Sample ID: 480-137307-11

Date Collected: 06/12/18 00:00 Date Received: 06/13/18 01:15

**Matrix: Water** 

**Matrix: Water** 

**Matrix: Water** 

<u>06/15/18 05:30</u> <u>06/15/18 11:13</u>

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	10	U	10	7.9	ug/L			06/19/18 04:47	10
1,3-Dichlorobenzene	10	U	10	7.8	ug/L			06/19/18 04:47	10
1,4-Dichlorobenzene	10	U	10	8.4	ug/L			06/19/18 04:47	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	83		80 - 120					06/19/18 04:47	10
1,2-Dichloroethane-d4 (Surr)	102		77 - 120					06/19/18 04:47	10
4-Bromofluorobenzene (Surr)	92		73 - 120					06/19/18 04:47	10
Dibromofluoromethane (Surr)	94		75 - 123					06/19/18 04:47	10

Client Sample ID: AW-C2\_20180612 Lab Sample ID: 480-137307-12

Date Collected: 06/12/18 10:15

Date Received: 06/13/18 01:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	17		1.5	0.36	ug/L		06/14/18 08:42	06/23/18 05:23	1
Dissolved Vanadium	3.9	J	4.0	1.2	ug/L		06/14/18 08:42	06/23/18 05:23	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.025		0.010	0.0025	mg/L		06/15/18 05:30	06/15/18 11:12	1

Client Sample ID: MW-26\_20180612 Lab Sample ID: 480-137307-13

Date Collected: 06/12/18 12:30 Date Received: 06/13/18 01:15

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium		1.5	0.36	ug/L		06/28/18 08:33	06/28/18 21:04	1
Dissolved Vanadium	84	4.0	1.2	ug/L		06/28/18 08:33	06/28/18 21:04	1

0.010

0.0025 mg/L

0.062

**Cyanide, Total** 

Client Sample ID: SW-01_20180612	Lab Sample ID: 480-137307-14
Date Collected: 06/12/18 10:10	Matrix: Water
Date Received: 06/13/18 01:15	

Method: 6020A - Metals (ICP/M	S) - Dissol	ved							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.82	J	1.5	0.36	ug/L		06/14/18 08:42	06/23/18 05:29	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		06/14/18 08:42	06/23/18 05:29	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010		0.010	0.0025	mg/L		06/15/18 05:30	06/15/18 11:14	1
Hardness as calcium carbonate	40000		4000	1100	ug/L			06/25/18 09:35	1

Client Sample ID: SW-01\_20180612

Lab Sample ID: 480-137307-14 Date Collected: 06/12/18 10:10

**Matrix: Water** 

Date Received: 06/13/18 01:15

General Chemistry - Dissolved Analyte	Result Qualifier	RL	MDL Unit	n	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	130	10	4.0 mg/L		1 Tepareu	06/14/18 12:42	1

**Client Sample ID: SW-02\_20180612** Lab Sample ID: 480-137307-15

Date Collected: 06/12/18 11:20 **Matrix: Water** 

Date Received: 06/13/18 01:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.52	J	1.5	0.36	ug/L		06/14/18 08:42	06/23/18 05:34	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		06/14/18 08:42	06/23/18 05:34	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/15/18 05:30	06/15/18 11:17	1
Hardness as calcium carbonate	36000		4000	1100	ug/L			06/25/18 09:35	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	100		10	4.0	mg/L			06/14/18 12:42	

Client Sample ID: SW-03 20180612 Lab Sample ID: 480-137307-16

Date Collected: 06/12/18 13:00 **Matrix: Water** 

Date Received: 06/13/18 01:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.5	U	1.5	0.36	ug/L		06/14/18 08:42	06/23/18 05:39	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		06/14/18 08:42	06/23/18 05:39	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/15/18 05:30	06/15/18 11:18	1
Hardness as calcium carbonate	32000		4000	1100	ug/L			06/25/18 09:35	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	100		10	4.0	mg/L			06/14/18 12:42	

Client Sample ID: DUP02\_20180612 Lab Sample ID: 480-137307-17

Date Collected: 06/12/18 00:00 **Matrix: Water** 

Date Received: 06/13/18 01:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.5	U	1.5	0.36	ug/L		06/14/18 08:42	06/23/18 06:22	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		06/14/18 08:42	06/23/18 06:22	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/15/18 05:30	06/15/18 11:22	1
Hardness as calcium carbonate	32000		4000	1100	ua/l			06/25/18 09:35	1

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

Client Sample ID: DUP02\_20180612

Lab Sample ID: 480-137307-17 Date Collected: 06/12/18 00:00

**Matrix: Water** 

Date Received: 06/13/18 01:15

General Chemistry - Dissolved								
Analyte	Result Qualifier	RL	MDL (	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	110	10	4.0 r	mg/L			06/14/18 12:42	1

Client Sample ID: SW-04\_20180612 Lab Sample ID: 480-137307-18

Date Collected: 06/12/18 14:55 **Matrix: Water** 

Date Received: 06/13/18 01:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.37	J	1.5	0.36	ug/L		06/14/18 08:42	06/23/18 06:27	1
Dissolved Vanadium	4.0	U	4.0	1.2	ug/L		06/14/18 08:42	06/23/18 06:27	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/15/18 05:30	06/15/18 11:23	1
Hardness as calcium carbonate	32000		4000	1100	ug/L			06/25/18 09:35	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	110		10	4.0	mg/L			06/14/18 12:42	

**Client Sample ID: TRIP BLANK** Lab Sample ID: 480-137307-19

Date Collected: 06/12/18 00:00 **Matrix: Water** 

Date Received: 06/13/18 01:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.0	Ū	1.0	0.79	ug/L			06/20/18 12:06	1
1,3-Dichlorobenzene	1.0	U	1.0	0.78	ug/L			06/20/18 12:06	1
1,4-Dichlorobenzene	1.0	U	1.0	0.84	ug/L			06/20/18 12:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120			•		06/20/18 12:06	1
1,2-Dichloroethane-d4 (Surr)	108		77 - 120					06/20/18 12:06	1
4-Bromofluorobenzene (Surr)	104		73 - 120					06/20/18 12:06	1
	102		75 - 123					06/20/18 12:06	

Client Sample ID: EB\_20180612 Lab Sample ID: 480-137307-20

Date Collected: 06/12/18 10:37 Date Received: 06/13/18 01:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.0	U	1.0	0.79	ug/L			06/20/18 12:33	1
1,3-Dichlorobenzene	1.0	U	1.0	0.78	ug/L			06/20/18 12:33	1
1,4-Dichlorobenzene	1.0	U	1.0	0.84	ug/L			06/20/18 12:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120					06/20/18 12:33	1
1,2-Dichloroethane-d4 (Surr)	109		77 - 120					06/20/18 12:33	1
4-Bromofluorobenzene (Surr)	105		73 - 120					06/20/18 12:33	1
Dibromofluoromethane (Surr)	100		75 - 123					06/20/18 12:33	

TestAmerica Buffalo

**Matrix: Water** 

### **Client Sample Results**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

Date Collected: 06/12/18 10:37

Matrix: Water

Date Collected: 06/12/18 10:37

Date Received: 06/13/18 01:15

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	7.5	U	7.5	1.8	ug/L		06/14/18 08:42	06/23/18 06:32	- 5
Dissolved Vanadium	20	U	20	6.0	ug/L		06/14/18 08:42	06/23/18 06:32	5
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0025	mg/L		06/15/18 05:30	06/15/18 11:24	1
Hardness as calcium carbonate	4000	U	4000	1100	ug/L			06/25/18 09:35	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	21		10	4.0	mg/L			06/14/18 12:42	1

Date Collected: 06/12/18 15:30 Matrix: Water

Date Received: 06/13/18 01:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	20		2.0	1.6	ug/L			06/20/18 13:00	2
1,3-Dichlorobenzene	2.0	U	2.0	1.6	ug/L			06/20/18 13:00	2
1,4-Dichlorobenzene	2.1		2.0	1.7	ug/L			06/20/18 13:00	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120					06/20/18 13:00	2
1,2-Dichloroethane-d4 (Surr)	117		77 - 120					06/20/18 13:00	2
4-Bromofluorobenzene (Surr)	103		73 - 120					06/20/18 13:00	2
Dibromofluoromethane (Surr)	105		75 - 123					06/20/18 13:00	2
Method: 6020A - Metals (IC	P/MS) - Dissol	ved							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	0.61	J F2	1.5	0.36	ug/L		06/14/18 08:42	06/23/18 06:37	1
Dissolved Vanadium	3.3	J	4.0	1.2	ug/L		06/14/18 08:42	06/23/18 06:37	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.34		0.10	0.025	mg/L		06/15/18 05:30	06/15/18 12:00	10

### **Surrogate Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

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

Matrix: Water Prep Type: Total/NA

			Pe	rcent Surro	gate Recovery (Acce	ptance Limits)
		TOL	DCA	BFB	DBFM	
Lab Sample ID	Client Sample ID	(80-120)	(77-120)	(73-120)	(75-123)	
480-137307-10	MW-36D_20180612	88	100	96	95	
480-137307-10 MS	MW-36D_20180612	87	102	95	95	
480-137307-10 MSD	MW-36D_20180612	88	101	96	98	
480-137307-11	DUP01_20180612	83	102	92	94	
480-137307-19	TRIP BLANK	98	108	104	102	
480-137307-20	EB_20180612	94	109	105	100	
480-137307-21	AW-B18_20180612	98	117	103	105	
480-137307-21 MS	AW-B18_20180612	96	110	104	102	
480-137307-21 MSD	AW-B18_20180612	98	109	105	100	
LCS 480-420270/5	Lab Control Sample	82	98	91	95	
LCS 480-420526/5	Lab Control Sample	96	111	102	102	
MB 480-420270/10	Method Blank	83	97	91	89	
MB 480-420526/7	Method Blank	94	102	101	96	

#### Surrogate Legend

TOL = Toluene-d8 (Surr)

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

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

5

7

a

10

12

13

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

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

Lab Sample ID: MB 480-420270/10

**Matrix: Water** 

**Analysis Batch: 420270** 

Client Sample ID: Method Blank

Prep Type: Total/NA

	INID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.0	U	1.0	0.79	ug/L			06/18/18 23:24	1
1,3-Dichlorobenzene	1.0	U	1.0	0.78	ug/L			06/18/18 23:24	1
1,4-Dichlorobenzene	1.0	U	1.0	0.84	ug/L			06/18/18 23:24	1

MD MD

	IVIB	IVIB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	83		80 - 120	 	06/18/18 23:24	1
1,2-Dichloroethane-d4 (Surr)	97		77 - 120		06/18/18 23:24	1
4-Bromofluorobenzene (Surr)	91		73 - 120		06/18/18 23:24	1
Dibromofluoromethane (Surr)	89		75 - 123		06/18/18 23:24	1

Lab Sample ID: LCS 480-420270/5

**Matrix: Water** 

**Analysis Batch: 420270** 

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

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2-Dichlorobenzene	 25.0	25.5		ug/L		102	80 - 124	
1,3-Dichlorobenzene	25.0	26.0		ug/L		104	77 - 120	
1,4-Dichlorobenzene	25.0	25.2		ug/L		101	80 - 120	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits	
Toluene-d8 (Surr)	82		80 - 120	
1,2-Dichloroethane-d4 (Surr)	98		77 - 120	
4-Bromofluorobenzene (Surr)	91		73 - 120	
Dibromofluoromethane (Surr)	95		75 - 123	

Lab Sample ID: 480-137307-10 MS

**Matrix: Water** 

Analysis Batch: 420270

Client	Sample	ID:	MW-36D	20180612
••	-unipid			

Client Sample ID: MW-36D\_20180612

**Prep Type: Total/NA** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2-Dichlorobenzene	10	U	250	264		ug/L		106	80 - 124	
1,3-Dichlorobenzene	10	U	250	272		ug/L		109	77 - 120	
1,4-Dichlorobenzene	10	U	250	258		ug/L		103	78 - 124	

MS MS

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	87		80 - 120
1,2-Dichloroethane-d4 (Surr)	102		77 - 120
4-Bromofluorobenzene (Surr)	95		73 - 120
Dibromofluoromethane (Surr)	95		75 - 123

Lab Sample ID: 480-137307-10 MSD

**Matrix: Water** 

Analysis Batch: 420270

Alialysis Dalcii. 420210											
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2-Dichlorobenzene	10	U	250	265		ug/L		106	80 - 124		20
1,3-Dichlorobenzene	10	U	250	278		ug/L		111	77 - 120	2	20

TestAmerica Buffalo

**Prep Type: Total/NA** 

Page 14 of 37

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

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

Lab Sample ID: 480-137307-10 MSD Client Sample ID: MW-36D\_20180612 **Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 420270** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dichlorobenzene	10	U	250	263		ug/L		105	78 - 124	2	20

MSD MSD Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 88 80 - 120 77 - 120 1,2-Dichloroethane-d4 (Surr) 101 4-Bromofluorobenzene (Surr) 96 73 - 120 Dibromofluoromethane (Surr) 98 75 - 123

Lab Sample ID: MB 480-420526/7 **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 420526** 

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.0	U	1.0	0.79	ug/L			06/20/18 10:08	1
1,3-Dichlorobenzene	1.0	U	1.0	0.78	ug/L			06/20/18 10:08	1
1,4-Dichlorobenzene	1.0	U	1.0	0.84	ug/L			06/20/18 10:08	1

	INIB INIB				
Surrogate	%Recovery Quali	ifier Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94	80 - 120		06/20/18 10:08	1
1,2-Dichloroethane-d4 (Surr)	102	77 - 120		06/20/18 10:08	1
4-Bromofluorobenzene (Surr)	101	73 - 120		06/20/18 10:08	1
Dibromofluoromethane (Surr)	96	75 - 123		06/20/18 10:08	1

Lab Sample ID: LCS 480-420526/5 **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** 

Analysis Batch: 420526

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2-Dichlorobenzene	25.0	25.0		ug/L		100	80 - 124
1,3-Dichlorobenzene	25.0	25.1		ug/L		100	77 - 120
1 4-Dichlorobenzene	25.0	25.7		ua/l		103	80 - 120

·			
	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	96		80 - 120
1,2-Dichloroethane-d4 (Surr)	111		77 - 120
4-Bromofluorobenzene (Surr)	102		73 - 120
Dibromofluoromethane (Surr)	102		75 - 123

Lab Sample ID: 480-137307-21 MS **Client Sample ID: AW-B18\_20180612 Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 420526** 

	Sample Sample	Spike	MS	MS				%Rec.	
Analyte	Result Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,2-Dichlorobenzene	20	50.0	71.3		ug/L		103	80 - 124	
1,3-Dichlorobenzene	2.0 U	50.0	51.7		ug/L		103	77 - 120	
1,4-Dichlorobenzene	2.1	50.0	53.8		ug/L		103	78 <sub>-</sub> 124	

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

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

Lab Sample ID: 480-137307-21 MS

Lab Sample ID: 480-137307-21 MSD

**Matrix: Water** 

**Analysis Batch: 420526** 

Client Sample ID: AW-B18\_20180612

Prep Type: Total/NA

MS MS %Recovery Qualifier Surrogate Limits Toluene-d8 (Surr) 96 80 - 120 1,2-Dichloroethane-d4 (Surr) 110 77 - 120 4-Bromofluorobenzene (Surr) 73 - 120 104 Dibromofluoromethane (Surr) 102 75 - 123

**Client Sample ID: AW-B18\_20180612** 

Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 420526

-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2-Dichlorobenzene	20		50.0	67.9		ug/L		96	80 - 124	5	20
1,3-Dichlorobenzene	2.0	U	50.0	47.8		ug/L		96	77 - 120	8	20
1,4-Dichlorobenzene	2.1		50.0	51.4		ug/L		99	78 - 124	4	20

MSD MSD Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 98 80 - 120 1,2-Dichloroethane-d4 (Surr) 109 77 - 120 105 4-Bromofluorobenzene (Surr) 73 - 120 Dibromofluoromethane (Surr) 100 75 - 123

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 480-419452/1-A

**Matrix: Water** 

Analysis Batch: 421372

/a. your Date ID IOID								op =atom	
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Chromium	1.5	U	1.5	0.36	ug/L		06/14/18 08:42	06/23/18 05:13	1
Diagolius d Managlium	4.0		4.0	4.0	//		00/44/40 00:40	00/00/40 05:40	4

Dissolved Vanadium 4.0 U 06/14/18 08:42 06/23/18 05:13 4.0 1.2 ug/L Lab Sample ID: LCS 480-419452/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Water Analysis Batch: 421372** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits **Dissolved Chromium** 80 - 120 20.0 20.0 ug/L 100 Dissolved Vanadium 20.0 80 - 120 20.7 ug/L 104

Lab Sample ID: MB 480-421581/1-A

**Matrix: Water** 

**Analysis Batch: 422306** 

**Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 421581** 

Client Sample ID: Method Blank

Prep Type: Total/NA

**Prep Batch: 419452** 

**Prep Batch: 419452** 

MB MB Result Qualifier RL **MDL** Unit Dil Fac **Analyte** Prepared Analyzed 1.5 **Dissolved Chromium** 1.5 U 0.36 ug/L 06/28/18 08:33 06/28/18 20:38 Dissolved Vanadium 4.0 U 4.0 06/28/18 08:33 06/28/18 20:38 1.2 ug/L

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

### Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 480-421581/2-A Matrix: Water Analysis Batch: 422306				Clie	nt Sai	mple ID	Prep Type: Total/NA Prep Batch: 421581
7 manyolo zatom 122000	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Dissolved Chromium	20.0	19.1		ug/L		96	80 - 120
Dissolved Vanadium	20.0	19.3		ug/L		97	80 - 120

Lab Sample ID: 480-13730 Matrix: Water Analysis Batch: 421372	7-16 MS						Client		<b>Prep Typ</b>	03_20180612 be: Dissolved atch: 419452
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Dissolved Chromium	1.5	U	20.0	19.9		ug/L		99	75 - 125	
Dissolved Vanadium	4.0	U	20.0	21.1		ug/L		105	75 - 125	

Lab Sample ID: 480-137307- Matrix: Water Analysis Batch: 421372	16 MSD						Client		ID: SW-0 Prep Type Prep Ba	e: Diss	olved
Analyte	•	Sample Qualifier	Spike Added	_	MSD Qualifier	Unit	D	%Rec	%Rec.	RPD	RPD Limit
Dissolved Chromium	1.5	U	20.0	19.3		ug/L		96	75 - 125	3	20
Dissolved Vanadium	4.0	U	20.0	20.6		ug/L		103	75 - 125	2	20

Lab Sample ID: 480-13/30/	'-21 IVIS						Client S	ampie	ID: AW-B1	18_20180612
Matrix: Water									<b>Prep Type</b>	e: Dissolved
Analysis Batch: 421372									Prep Ba	atch: 419452
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Dissolved Chromium	0.61	J F2	20.0	24.5		ug/L		120	75 - 125	
Dissolved Vanadium	3.3	J	20.0	24.4		ua/L		106	75 - 125	

Lab Sample ID: 480-137307- Matrix: Water	21 MSD					Cli	ent S	-	D: AW-B1 Prep Type	e: Diss	olved
Analysis Batch: 421372			<u> </u>						Prep Ba	itch: 4	
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dissolved Chromium	0.61	J F2	20.0	18.6	F2	ug/L		90	75 - 125	27	20
Dissolved Vanadium	3.3	J	20.0	22 6		ua/l		97	75 - 125	8	20

Lab Sample ID: 480-13730 Matrix: Water Analysis Batch: 422306	7-13 MS						Client		<b>Prep Type</b>	6_20180612 e: Dissolved atch: 421581
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Dissolved Chromium	11		20.0	31.2		ug/L		103	75 - 125	
Dissolved Vanadium	84		20.0	109	4	ug/L		124	75 <sub>-</sub> 125	

Lab Sample ID: 480-137307-	-13 MSD						Client S	Sample	ID: MW-2	6_2018	30612
Matrix: Water									<b>Prep Type</b>	e: Diss	olved
Analysis Batch: 422306									Prep Ba	itch: 42	21581
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dissolved Chromium	11		20.0	31.5		ug/L		105	75 - 125		20

Page 17 of 37

Client: Ashland LLC Project/Site: Hercules Glens Falls 2Q18

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 480-137307	7-13 MSD						Client	Sample	D: MW-2	26_2018	30612
Matrix: Water									<b>Prep Type</b>	e: Diss	olved
Analysis Batch: 422306									Prep Ba	atch: 42	21581
_	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dissolved Vanadium	84		20.0	110	4	ua/l		131	75 - 125		20

Method: 9012B - C	yanide, Tota	I andor Amenable
-------------------	--------------	------------------

Lab Sample ID: MB 680-527920/1-A Matrix: Water Analysis Batch: 528013							j	le ID: Method Prep Type: To Prep Batch:	otal/NA
-	MB	MB							
Analyte I	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cvanide Total	0.010	U	0.010	0.0025	ma/l		06/15/18 05:30	06/15/18 10:51	

Lab Sample ID: HLCS 680-527920/4-A				Clie	nt Saı	nple ID	: Lab Control Sample
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 528013							<b>Prep Batch: 527920</b>
	Spike	HLCS	HLCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.0750	0.0796		mg/L		106	90 - 110

-	Lab Sample ID: LCS 680-52/920/2-A				Cile	nı Sar	ubie in	: Lab Control Sample
	Matrix: Water							Prep Type: Total/NA
	Analysis Batch: 528013							<b>Prep Batch: 527920</b>
		Spike	LCS	LCS				%Rec.
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
	Cyanide, Total	0.0500	0.0511		mg/L		102	85 - 115

Lab Sample ID: LLCS 680-527920/3-A				Clie	nt Sar	nple IC	): Lab Control San	nple
Matrix: Water							<b>Prep Type: Total</b>	I/NA
Analysis Batch: 528013							Prep Batch: 527	<b>7920</b>
	Spike	LLCS	LLCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cyanide, Total	0.0100	0.00867	J	mg/L		87	90 - 110	

Lab Sample ID: 480-137307-	-5 MS			Client Sample ID: SG-11_2018061						
Matrix: Water									Prep Ty	pe: Total/NA
Analysis Batch: 528013									Prep Ba	atch: 527920
-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cyanide, Total	0.0032	J	0.0500	0.0523		mg/L		98	85 - 115	

Lab Sample ID: 480-13730	7-5 MSD						Client	Sample	e ID: SG-1	1_2018	30611
Matrix: Water									Prep Ty	pe: Tot	al/NA
Analysis Batch: 528013									Prep Ba	atch: 52	27920
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cyanide, Total	0.0032	J	0.0500	0.0516		mg/L		97	85 - 115	1	20

Client: Ashland LLC Project/Site: Hercules Glens Falls 2Q18

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: 480-13730	7-16 MS						Client	Sample	e ID: SW-03	3_20180612
Matrix: Water									Prep Typ	e: Total/NA
Analysis Batch: 528013									Prep Ba	tch: 527920
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cyanide, Total	0.010	U	0.0500	0.0537		mg/L		107	85 - 115	

Lab Sample ID: 480-13730 Matrix: Water Analysis Batch: 528013	7-16 MSD						Client	Sample	ID: SW-0 Prep Typ Prep Ba	pe: Tot	al/NA
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cyanide, Total	0.010	U	0.0500	0.0487		mg/L		97	85 - 115	10	20

Lab Sample ID: 460-13/30/		Client Sample ID: AW-B16_201606							
Matrix: Water									Prep Type: Total/NA
Analysis Batch: 528013									<b>Prep Batch: 527920</b>
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cyanide Total	0.34		0.0500	0.363	4	ma/l		52	85 - 115

Lab Sample ID: 480-137307	-21 MSD						Client S	ample l	ID: AW-B1	8 <b>_201</b> 8	30612
Matrix: Water									Prep Ty	pe: Tot	al/NA
Analysis Batch: 528013									Prep Ba	atch: 52	27920
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cyanide, Total	0.34		0.0500	0.375	4	mg/L		76	85 - 115	3	20

Method: SM 2340C - Hardness, Total (mg/l as CaC03)

Lab Sample ID: MB 480-421418/3	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 421418	

	MR	MR							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	2000	U	2000	530	ug/L			06/25/18 09:35	1

Lab Sample ID: LCS 480-421418/4 Matrix: Water				C	lient Sa	mple ID	: Lab Conti Prep Type	rol Sample e: Total/NA
Analysis Batch: 421418	Spike		LCS				%Rec.	
Analyte Hardness as calcium carbonate	Added	168000	Qualifier	Unit ug/L	D	%Rec 97	Limits 90 - 110	
Lab Sample ID: 480-137307-16 MS Matrix: Water				3	Client	Sample		_20180612 e: Total/NA

Analysis Batch: 421418										
-	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Hardness as calcium carbonate	32000		200000	228000		ug/L		98	74 - 130	_

Client: Ashland LLC TestAmerica Job ID: 480-137307-1

Project/Site: Hercules Glens Falls 2Q18

Method: SM 2340C - Hardness, Total (mg/l as CaC03) (Continued)

Lab Sample ID: 480-137307-16 MSD Client Sample ID: SW-03\_20180612 **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 421418** 

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 200000 Hardness as calcium carbonate 32000 228000 ug/L 98 74 - 130 0 15

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

Lab Sample ID: MB 480-419616/1 **Client Sample ID: Method Blank** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 419616

MB MB RL **MDL** Unit Analyte Result Qualifier Analyzed Dil Fac D Prepared **Total Dissolved Solids** 10 U 10 4.0 mg/L 06/14/18 12:42

Lab Sample ID: LCS 480-419616/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 419616** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Limits Total Dissolved Solids 513 523 102 85 - 115 mg/L

Lab Sample ID: 480-137307-20 DU Client Sample ID: EB\_20180612 **Matrix: Water Prep Type: Dissolved** 

**Analysis Batch: 419616** 

DU DU RPD Sample Sample Result Qualifier Result Qualifier Unit RPD Limit Total Dissolved Solids 21 23.0 mg/L 10

## **QC Association Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

### **GC/MS VOA**

### Analysis Batch: 420270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-10	MW-36D_20180612	Total/NA	Water	8260C	
480-137307-11	DUP01_20180612	Total/NA	Water	8260C	
MB 480-420270/10	Method Blank	Total/NA	Water	8260C	
LCS 480-420270/5	Lab Control Sample	Total/NA	Water	8260C	
480-137307-10 MS	MW-36D_20180612	Total/NA	Water	8260C	
480-137307-10 MSD	MW-36D_20180612	Total/NA	Water	8260C	

### Analysis Batch: 420526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-19	TRIP BLANK	Total/NA	Water	8260C	_
480-137307-20	EB_20180612	Total/NA	Water	8260C	
480-137307-21	AW-B18_20180612	Total/NA	Water	8260C	
MB 480-420526/7	Method Blank	Total/NA	Water	8260C	
LCS 480-420526/5	Lab Control Sample	Total/NA	Water	8260C	
480-137307-21 MS	AW-B18_20180612	Total/NA	Water	8260C	
480-137307-21 MSD	AW-B18_20180612	Total/NA	Water	8260C	

#### **Metals**

#### **Prep Batch: 419452**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-12	AW-C2_20180612	Dissolved	Water	3020A	_
480-137307-14	SW-01_20180612	Dissolved	Water	3020A	
480-137307-15	SW-02_20180612	Dissolved	Water	3020A	
480-137307-16	SW-03_20180612	Dissolved	Water	3020A	
480-137307-17	DUP02_20180612	Dissolved	Water	3020A	
480-137307-18	SW-04_20180612	Dissolved	Water	3020A	
480-137307-20	EB_20180612	Dissolved	Water	3020A	
480-137307-21	AW-B18_20180612	Dissolved	Water	3020A	
MB 480-419452/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-419452/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-137307-16 MS	SW-03_20180612	Dissolved	Water	3020A	
480-137307-16 MSD	SW-03_20180612	Dissolved	Water	3020A	
480-137307-21 MS	AW-B18_20180612	Dissolved	Water	3020A	
480-137307-21 MSD	AW-B18_20180612	Dissolved	Water	3020A	

### Analysis Batch: 421372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-12	AW-C2_20180612	Dissolved	Water	6020A	419452
480-137307-14	SW-01_20180612	Dissolved	Water	6020A	419452
480-137307-15	SW-02_20180612	Dissolved	Water	6020A	419452
480-137307-16	SW-03_20180612	Dissolved	Water	6020A	419452
480-137307-17	DUP02_20180612	Dissolved	Water	6020A	419452
480-137307-18	SW-04_20180612	Dissolved	Water	6020A	419452
480-137307-20	EB_20180612	Dissolved	Water	6020A	419452
480-137307-21	AW-B18_20180612	Dissolved	Water	6020A	419452
MB 480-419452/1-A	Method Blank	Total/NA	Water	6020A	419452
LCS 480-419452/2-A	Lab Control Sample	Total/NA	Water	6020A	419452
480-137307-16 MS	SW-03_20180612	Dissolved	Water	6020A	419452
480-137307-16 MSD	SW-03_20180612	Dissolved	Water	6020A	419452

TestAmerica Buffalo

8/7/2018 (Rev. 1)

nioa Banaio

Page 21 of 37

5

10

13

14

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

**Metals (Continued)** 

#### **Analysis Batch: 421372 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-21 MS	AW-B18_20180612	Dissolved	Water	6020A	419452
480-137307-21 MSD	AW-B18_20180612	Dissolved	Water	6020A	419452

#### **Prep Batch: 421581**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-13	MW-26_20180612	Dissolved	Water	3020A	
MB 480-421581/1-A	Method Blank	Total/NA	Water	3020A	
LCS 480-421581/2-A	Lab Control Sample	Total/NA	Water	3020A	
480-137307-13 MS	MW-26_20180612	Dissolved	Water	3020A	
480-137307-13 MSD	MW-26_20180612	Dissolved	Water	3020A	

#### **Analysis Batch: 422306**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-13	MW-26_20180612	Dissolved	Water	6020A	421581
MB 480-421581/1-A	Method Blank	Total/NA	Water	6020A	421581
LCS 480-421581/2-A	Lab Control Sample	Total/NA	Water	6020A	421581
480-137307-13 MS	MW-26_20180612	Dissolved	Water	6020A	421581
480-137307-13 MSD	MW-26_20180612	Dissolved	Water	6020A	421581

### **General Chemistry**

#### **Analysis Batch: 419616**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-14	SW-01_20180612	Dissolved	Water	SM 2540C	_
480-137307-15	SW-02_20180612	Dissolved	Water	SM 2540C	
480-137307-16	SW-03_20180612	Dissolved	Water	SM 2540C	
480-137307-17	DUP02_20180612	Dissolved	Water	SM 2540C	
480-137307-18	SW-04_20180612	Dissolved	Water	SM 2540C	
480-137307-20	EB_20180612	Dissolved	Water	SM 2540C	
MB 480-419616/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-419616/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-137307-20 DU	EB_20180612	Dissolved	Water	SM 2540C	

#### **Analysis Batch: 421418**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-14	SW-01_20180612	Total/NA	Water	SM 2340C	
480-137307-15	SW-02_20180612	Total/NA	Water	SM 2340C	
480-137307-16	SW-03_20180612	Total/NA	Water	SM 2340C	
480-137307-17	DUP02_20180612	Total/NA	Water	SM 2340C	
480-137307-18	SW-04_20180612	Total/NA	Water	SM 2340C	
480-137307-20	EB_20180612	Total/NA	Water	SM 2340C	
MB 480-421418/3	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-421418/4	Lab Control Sample	Total/NA	Water	SM 2340C	
480-137307-16 MS	SW-03_20180612	Total/NA	Water	SM 2340C	
480-137307-16 MSD	SW-03 20180612	Total/NA	Water	SM 2340C	

#### **Prep Batch: 527920**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-3	DUP01_20180611	Total/NA	Water	9012B	
480-137307-4	DUP02_20180611	Total/NA	Water	9012B	

TestAmerica Buffalo

Page 22 of 37

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

### **General Chemistry (Continued)**

### Prep Batch: 527920 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-5	SG-11_20180611	Total/NA	Water	9012B	
480-137307-6	SG-7_20180611	Total/NA	Water	9012B	
480-137307-7	EB_20180611	Total/NA	Water	9012B	
480-137307-12	AW-C2_20180612	Total/NA	Water	9012B	
480-137307-13	MW-26_20180612	Total/NA	Water	9012B	
480-137307-14	SW-01_20180612	Total/NA	Water	9012B	
480-137307-15	SW-02_20180612	Total/NA	Water	9012B	
480-137307-16	SW-03_20180612	Total/NA	Water	9012B	
480-137307-17	DUP02_20180612	Total/NA	Water	9012B	
480-137307-18	SW-04_20180612	Total/NA	Water	9012B	
480-137307-20	EB_20180612	Total/NA	Water	9012B	
480-137307-21	AW-B18_20180612	Total/NA	Water	9012B	
MB 680-527920/1-A	Method Blank	Total/NA	Water	9012B	
HLCS 680-527920/4-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 680-527920/2-A	Lab Control Sample	Total/NA	Water	9012B	
LLCS 680-527920/3-A	Lab Control Sample	Total/NA	Water	9012B	
480-137307-5 MS	SG-11_20180611	Total/NA	Water	9012B	
480-137307-5 MSD	SG-11_20180611	Total/NA	Water	9012B	
480-137307-16 MS	SW-03_20180612	Total/NA	Water	9012B	
480-137307-16 MSD	SW-03_20180612	Total/NA	Water	9012B	
480-137307-21 MS	AW-B18_20180612	Total/NA	Water	9012B	
480-137307-21 MSD	AW-B18_20180612	Total/NA	Water	9012B	

#### Analysis Batch: 528013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-3	DUP01_20180611	Total/NA	Water	9012B	527920
480-137307-4	DUP02_20180611	Total/NA	Water	9012B	527920
480-137307-5	SG-11_20180611	Total/NA	Water	9012B	527920
480-137307-6	SG-7_20180611	Total/NA	Water	9012B	527920
480-137307-7	EB_20180611	Total/NA	Water	9012B	527920
480-137307-12	AW-C2_20180612	Total/NA	Water	9012B	527920
480-137307-13	MW-26_20180612	Total/NA	Water	9012B	527920
480-137307-14	SW-01_20180612	Total/NA	Water	9012B	527920
480-137307-15	SW-02_20180612	Total/NA	Water	9012B	527920
480-137307-16	SW-03_20180612	Total/NA	Water	9012B	527920
480-137307-17	DUP02_20180612	Total/NA	Water	9012B	527920
480-137307-18	SW-04_20180612	Total/NA	Water	9012B	527920
480-137307-20	EB_20180612	Total/NA	Water	9012B	527920
480-137307-21	AW-B18_20180612	Total/NA	Water	9012B	527920
MB 680-527920/1-A	Method Blank	Total/NA	Water	9012B	527920
HLCS 680-527920/4-A	Lab Control Sample	Total/NA	Water	9012B	527920
LCS 680-527920/2-A	Lab Control Sample	Total/NA	Water	9012B	527920
LLCS 680-527920/3-A	Lab Control Sample	Total/NA	Water	9012B	527920
480-137307-5 MS	SG-11_20180611	Total/NA	Water	9012B	527920
480-137307-5 MSD	SG-11_20180611	Total/NA	Water	9012B	527920
480-137307-16 MS	SW-03_20180612	Total/NA	Water	9012B	527920
480-137307-16 MSD	SW-03_20180612	Total/NA	Water	9012B	527920
480-137307-21 MS	AW-B18_20180612	Total/NA	Water	9012B	527920
480-137307-21 MSD	AW-B18 20180612	Total/NA	Water	9012B	527920

Page 23 of 37

Project/Site: Hercules Glens Falls 2Q18

Client: Ashland LLC

Client Sample ID: DUP01 20180611 Lab Sample ID: 480-137307-3

Date Collected: 06/11/18 00:00 Date Received: 06/13/18 01:15

**Matrix: Water** 

Batch Dilution Batch Batch **Prepared** Method Factor Number Lab **Prep Type** Type Run or Analyzed Analyst Total/NA Prep 9012B 527920 06/15/18 05:30 DAM TAL SAV Total/NA Analysis 9012B 528013 06/15/18 11:00 DAM TAL SAV 1

Client Sample ID: DUP02\_20180611 Lab Sample ID: 480-137307-4

Date Collected: 06/11/18 00:00 Date Received: 06/13/18 01:15

**Matrix: Water** 

Batch Batch Dilution Batch **Prepared** Method Type **Factor** Number or Analyzed **Prep Type** Run Analyst Lab Total/NA Prep 9012B 527920 06/15/18 05:30 DAM TAL SAV 9012B 528013 06/15/18 11:01 DAM TAL SAV Total/NA Analysis 1

Client Sample ID: SG-11\_20180611 Lab Sample ID: 480-137307-5

Date Collected: 06/11/18 15:00

**Matrix: Water** 

Date Received: 06/13/18 01:15

Batch Batch Dilution Batch Prepared Prep Type Type Method Run **Factor** Number or Analyzed **Analyst** Lab Total/NA Prep 9012B 527920 06/15/18 05:30 DAM TAL SAV 528013 06/15/18 11:04 DAM Total/NA Analysis 9012B TAL SAV 1

Client Sample ID: SG-7 20180611 Lab Sample ID: 480-137307-6

Date Collected: 06/11/18 14:45

**Matrix: Water** 

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	528013	06/15/18 11:07	DAM	TAL SAV

Client Sample ID: EB 20180611 Lab Sample ID: 480-137307-7

Date Collected: 06/11/18 09:05

**Matrix: Water** 

Date Received: 06/13/18 01:15

		Batch	Batch		Dilution	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
	Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
ı	Total/NA	Analysis	9012B		1	528013	06/15/18 11:08	DAM	TAL SAV

Lab Sample ID: 480-137307-10 Client Sample ID: MW-36D 20180612

Date Collected: 06/12/18 10:22 Date Received: 06/13/18 01:15

> Batch Batch Dilution Batch **Prepared**

**Prep Type** Type Method Run **Factor** Number or Analyzed Analyst Lab Total/NA Analysis 8260C 10 420270 06/19/18 04:23 S<sub>1</sub>V TAL BUF

TestAmerica Buffalo

**Matrix: Water** 

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

Client Sample ID: DUP01\_20180612

Lab Sample ID: 480-137307-11

Metrice Weter

Matrix: Water

Date Collected: 06/12/18 00:00

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	420270	06/19/18 04:47	S1V	TAL BUF

Date Collected: 06/12/18 10:15

Matrix: Water

Date Received: 06/13/18 01:15

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			419452	06/14/18 08:42	KMP	TAL BUF
Dissolved	Analysis	6020A		1	421372	06/23/18 05:23	JJP	TAL BUF
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	528013	06/15/18 11:12	DAM	TAL SAV

Date Collected: 06/12/18 12:30 Matrix: Water

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			421581	06/28/18 08:33	JAK	TAL BUF
Dissolved	Analysis	6020A		1	422306	06/28/18 21:04	MTM2	TAL BUF
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	528013	06/15/18 11:13	DAM	TAL SAV

Date Collected: 06/12/18 10:10 Matrix: Water

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			419452	06/14/18 08:42	KMP	TAL BUF
Dissolved	Analysis	6020A		1	421372	06/23/18 05:29	JJP	TAL BUF
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	528013	06/15/18 11:14	DAM	TAL SAV
Total/NA	Analysis	SM 2340C		1	421418	06/25/18 09:35	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	419616	06/14/18 12:42	SLM	TAL BUF

Date Collected: 06/12/18 11:20 Matrix: Water

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			419452	06/14/18 08:42	KMP	TAL BUF
Dissolved	Analysis	6020A		1	421372	06/23/18 05:34	JJP	TAL BUF
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	528013	06/15/18 11:17	DAM	TAL SAV

TestAmerica Buffalo

4

**5** 

7

9

10

12

14

#### **Lab Chronicle**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2340C		1	421418	06/25/18 09:35	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	419616	06/14/18 12:42	SLM	TAL BUF

Client Sample ID: SW-03\_20180612

Lab Sample ID: 480-137307-16 Date Collected: 06/12/18 13:00

**Matrix: Water** 

Date Received: 06/13/18 01:15

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3020A			419452	06/14/18 08:42	KMP	TAL BUF
Dissolved	Analysis	6020A		1	421372	06/23/18 05:39	JJP	TAL BUF
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	528013	06/15/18 11:18	DAM	TAL SAV
Total/NA	Analysis	SM 2340C		1	421418	06/25/18 09:35	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	419616	06/14/18 12:42	SLM	TAL BUF

Client Sample ID: DUP02 20180612

Lab Sample ID: 480-137307-17 Date Collected: 06/12/18 00:00

**Matrix: Water** 

Date Received: 06/13/18 01:15

Batch Batch Dilution Batch Prepared **Prep Type** Type Method Run **Factor** Number or Analyzed Analyst Lab Prep TAL BUF Dissolved 3020A 419452 06/14/18 08:42 KMP Dissolved 6020A Analysis 1 421372 06/23/18 06:22 JJP TAL BUF Total/NA Prep 9012B 527920 06/15/18 05:30 DAM TAL SAV Total/NA Analysis 9012B 528013 06/15/18 11:22 DAM 1 TAL SAV Total/NA Analysis SM 2340C 1 421418 06/25/18 09:35 MJB TAL BUF Analysis Dissolved SM 2540C 419616 06/14/18 12:42 SLM TAL BUF

Client Sample ID: SW-04 20180612

Lab Sample ID: 480-137307-18 Date Collected: 06/12/18 14:55

**Matrix: Water** 

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3020A	<del></del>		419452	06/14/18 08:42	KMP	TAL BUF
Dissolved	Analysis	6020A		1	421372	06/23/18 06:27	JJP	TAL BUF
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	528013	06/15/18 11:23	DAM	TAL SAV
Total/NA	Analysis	SM 2340C		1	421418	06/25/18 09:35	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	419616	06/14/18 12:42	SLM	TAL BUF

**Client Sample ID: TRIP BLANK** 

Lab Sample ID: 480-137307-19 Date Collected: 06/12/18 00:00

**Matrix: Water** 

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	420526	06/20/18 12:06	KMN	TAL BUF

### **Lab Chronicle**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

Client Sample ID: EB\_20180612

Lab Sample ID: 480-137307-20 Date Collected: 06/12/18 10:37 **Matrix: Water** 

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	420526	06/20/18 12:33	KMN	TAL BUF
Dissolved	Prep	3020A			419452	06/14/18 08:42	KMP	TAL BUF
Dissolved	Analysis	6020A		5	421372	06/23/18 06:32	JJP	TAL BUF
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	528013	06/15/18 11:24	DAM	TAL SAV
Total/NA	Analysis	SM 2340C		1	421418	06/25/18 09:35	MJB	TAL BUF
Dissolved	Analysis	SM 2540C		1	419616	06/14/18 12:42	SLM	TAL BUF

Lab Sample ID: 480-137307-21 **Client Sample ID: AW-B18\_20180612** 

Date Collected: 06/12/18 15:30 **Matrix: Water** 

Date Received: 06/13/18 01:15

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C			420526	06/20/18 13:00	KMN	TAL BUF
Dissolved	Prep	3020A			419452	06/14/18 08:42	KMP	TAL BUF
Dissolved	Analysis	6020A		1	421372	06/23/18 06:37	JJP	TAL BUF
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		10	528013	06/15/18 12:00	DAM	TAL SAV

#### **Laboratory References:**

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

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

### **Accreditation/Certification Summary**

Client: Ashland LLC TestAmerica Job ID: 480-137307-1

Project/Site: Hercules Glens Falls 2Q18

**Laboratory: TestAmerica Buffalo** 

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

**Laboratory: TestAmerica Savannah** 

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program		EPA Region	Identification Number	Expiration Date
New York	NELAP		2	10842	03-31-19
The following analytes	s are included in this renor	t but accreditation/	certification is not offe	ered by the governing author	ority:
The following analytes	s are included in this repor	t, but accreditation/	certification is not offe	ered by the governing author	ority:
The following analytes  Analysis Method	s are included in this repor	t, but accreditation/ Matrix	certification is not offe Analyt	, ,	ority:
,	•	•	Analyt	, ,	ority:

3

4

6

9

4 4

12

14

### **Method Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

Method	Method Description	Protocol	Laboratory
B260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL SAV
SM 2340C	Hardness, Total (mg/l as CaC03)	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
8020A	Preparation, Total Metals	SW846	TAL BUF
5030C	Purge and Trap	SW846	TAL BUF
012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV

### **Protocol References:**

SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### **Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600 TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

3

4

**O** 

O

40

11

12

### **Sample Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-1

Lab Sample ID	Client Sample ID	Matrix	Collected Received
480-137307-3	DUP01_20180611	Water	06/11/18 00:00 06/13/18 01:15
480-137307-4	DUP02_20180611	Water	06/11/18 00:00 06/13/18 01:15
480-137307-5	SG-11_20180611	Water	06/11/18 15:00 06/13/18 01:15
480-137307-6	SG-7_20180611	Water	06/11/18 14:45 06/13/18 01:15
480-137307-7	EB_20180611	Water	06/11/18 09:05 06/13/18 01:15
480-137307-10	MW-36D_20180612	Water	06/12/18 10:22 06/13/18 01:15
480-137307-11	DUP01_20180612	Water	06/12/18 00:00 06/13/18 01:15
480-137307-12	AW-C2_20180612	Water	06/12/18 10:15 06/13/18 01:15
480-137307-13	MW-26_20180612	Water	06/12/18 12:30 06/13/18 01:15
480-137307-14	SW-01_20180612	Water	06/12/18 10:10 06/13/18 01:15
480-137307-15	SW-02_20180612	Water	06/12/18 11:20 06/13/18 01:15
480-137307-16	SW-03_20180612	Water	06/12/18 13:00 06/13/18 01:15
480-137307-17	DUP02_20180612	Water	06/12/18 00:00 06/13/18 01:15
480-137307-18	SW-04_20180612	Water	06/12/18 14:55 06/13/18 01:15
480-137307-19	TRIP BLANK	Water	06/12/18 00:00 06/13/18 01:15
480-137307-20	EB_20180612	Water	06/12/18 10:37 06/13/18 01:15
480-137307-21	AW-B18_20180612	Water	06/12/18 15:30 06/13/18 01:15

\_

3

5

7

8

9

4 4

14

14

TestAmerica Savannah

5102 LaRoche Avenue Savannah, GA 31404

## 480501-Albany Chain of Custody Record

Ruextrabattlestor ms/mgd Run extra bot lessor maping 1 Run 6 B 2018 6614 45 Copy thront T - TSP Dodecahydrate Special Instructions/Note: Z - other (specify) N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 Se U - Acetone V - MCAA Special Instructions/QC Requirements: Cell & Heled Sound 185 are ID on Lubils Months W-ph 4-5 M - Hexane S-H2S04 Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) COC No: 680-76228-31646.1 Preservation Codes 1.710 of 2 G - Amchlor H - Ascorbic Acid B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 I - Ice J - DI Water K - EDTA 5/10 F - MeOH Page Archive For Page: 4-12-18 4 Total Number of containers war 11-11-9 480-137307 COC Disposal By Lab Analysis Requested Cooler Temperature(s) <sup>a</sup>C and Other Remarks E-Mail: eddie.barnett@testamericainc.com Return To Client - Total Dissolved Solids (field filtered) otal Chromium and Vanadium (field \ \ \ × z Lab PM: Barnett, Eddie T × × X 90128 - Cyanide, Total 2 Perform MS/MSD (Yes or No) Cria Time: BT=Tissue, A=Air (W=water, S=solid, O=waste/oil, Alled Matrix Preservation Code Water (C=comp, G=grab) Radiological Sample 100 TA C10-30 0 3536 497 3636 1800 S Standard 1033 Sample 240 1500 1445 0965 hts 81/21/9 ļ Date: Unknown TAT Requested (days): Due Date Requested: 4-12-18 81/21/3 5-13-14 Sample Date 81/11/9 81/11/9 81/41/9 81/21/9 81/11/9 4502471936 81/11/9 81/11/9 Project #. 68000956 Poison B evondracek@ashland.com, cassie.reuter@ehs support.com Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify) E1308108 - 8180- MM MW-0818 30180612 FI 708108-098-MM Custody Seals Intact: Custody Seal No. al Scell Phone (912) 354-7858 Fax (912) 352-0165 MW-0817, 2018061 MW-6621-3018061 DUPEZ JOSECI 1-11-30180C1 1908106 10000 -7-3018661 JOSOCA . Hercules Glens Falls Quarterly Event Non-Hazard Flammable Possible Hazard Identification 11908106 5200 Blazer Parkway DS-4 Empty Kit Relinquished by: 91/he Sample Identification

MW-0817

Base 31 of 32 Client Information A Yes A No Ashland Glens Falls DUB Mr. Jim Vondracek telinquished by: 614-790-6146 Relinquished by Ashland Inc OH, 43017 City: Dublin State, Zip:







Phone (912) 354-7858 Fax (912) 352-0165

TestAmerica Savannah

5102 LaRoche Avenue Savannah, GA 31404

### Chain of Custody Record

**TestAmerica** 

40 Kuneyta bottle forms/mg 11 un extra botter Ser ms/no 8 JRINEP 2018 DELD AS OF THE P - Na204S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate Special Instructions/Note: U - Acetone V - MCAA W - ph 4-5 Z - other (specify) O - AsNaO2 Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Mont COC No. 680-76228-31646.1 Preservation Codes of to G - Amchlor H - Ascorbic Acid A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH I - Ice J - DI Water K - EDTA Page 2 defittered Samples Archive For Total Number of containers 1 Disposal By Lab Analysis Requested Special Instructions/QC Requirements: eddle.barnett@testamericainc.com × Lab PM: Barnett, Eddie T E-Mail: λ 2 2 B Perform MS/MSD (Yes or No) BT=Tissue, A.Air) (W=water, S=salid, O=wastefoll, Preservation Code: Water Matrix Water Type (C=comp, G=grab) Sample Radiological 2636 0 0 9 0 0 0 BWE 0 Standard 536 1455 Sample 103 1230 010 1130 1300 16/5 692 1 Jamet Unknown TAT Requested (days) Due Date Requested; 6/12/18 31/ne/5 31/21/9 81/21/9 6/12/18 Sample Date 2/13/18 260 31/21/9 81/21/ 6/12/18 81/21/3 4502471936 68000956 roject #: Poison B evondracek@ashland.com, cassie.reuter@ehs support.com Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify) E1908105 AW-818 20186613 5W-64\_20180612 5W-03-20186612 E1308108 51 308105 LO - WE DUPOS-2018CG12 Hercules Glens Falls Quarterly Event Flammable EBJOSIOE B TRIP Blank Possible Hazard Identification 5200 Blazer Parkway DS-4 Sample Identification 41W-CZ Client Information Ashland Glens Falls Mr. Jim Vondracek 514-790-6146 Ashland Inc OH, 43017 State, Zip: Dublin

#

3

レス

Date Time - 18

1710

Date/Time:

fethod of Shipmen

Time:

Date:

Althou

Company

1800

4-12-18

value

mpty Kit Relinquished by:

Custody Seal No.

Custody Seals Intact:

A Yes A No

итрапу

ore I.D. On Lobles

ooler Temperature(s) °C and Other Remarks

1)

# TestAmerica

estamerica buttalo

10 Hazelwood Drive	0	Chain c	of Cus	n of Custody Record	Seco	rd					2
Annerst, NY 14228-2298 Phone (716) 691-2600 Fax (716) 691-7991										THE CEADER IN ENVIRONMENTAL TESTING	AL TEST AUG
Client Information (Sub Contract Lab)	Sampler			Lab PM Barnel	Lab PM: Barnett, Eddie T	Te T		Carrier Tracking No(s)	(s):	COC No: 480-42841,1	
	Phone			E-Mail eddie	e barnet	E-Mail eddie barnett@testamericainc.com	сош	State of Ongin. New York		Page. Page 1 of 3	
Company TestAmerica Laboratories, Inc.					Accredita	Accreditations Required (See note) NELAP - New York	iote);			Job # 480-137307-1	
Address. 5102 LaRoche Avenue.	Due Date Requested: 6/25/2018	.pq:				Ā	nalvsis R	Analysis Reguested		ion Code	
City. Savannah	TAT Requested (days):	iys):								B - NaOH N - None C - Zn Acetate O - AsNaO2	
State, Zp: GA, 31404											
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	, BO#.				(0	роцы		-		G - Amechior S - H2SO4 H - Ascorbic Acid T - TSP Dodes	R - Na2S203 S - H2SO4 T - TSP Dodecahydrate
Email	#OM					M (so)	_			1 - Ice J - DI Water	
Project Name: Hercules Glens Falls O&M Quarterly	Project #. 68000956					on (ac				K - EDTA W - pH 4-5 L - EDA Z - other (specify)	secify)
Site	SSOW#.				-	w) da				Other:	
		Sample	Sample Type (C=comp,	(Wewater, Sesolid, Oewaste/oli, BT-Tissue,	eld Filtered S MS/M	ng_82106/821				Stal Number of	
Sample Identification - Client ID (Lab ID)	Sample Date	Time	G=grab)	A-Air)	_	06				Special Instructions/Note:	/Note:
	\ \	X	Preserva	Preservation Code:	X						
MW-OB17_20180611 (480-137307-1)	6/11/18	11:15 Eastern		Water		×				1	
MW-0B21_20180611 (480-137307-2)	6/11/18	12:50 Eastern		Water		×				1	
MW-0B21_20180611 (480-137307-2MS)	6/11/18	12.50 Fastern	MS	Water		×				1 MS/MSD SHARED VOLUME	
MW-OB21_20180611 (480-137307-2MSD)	6/11/18	12.50 Eastern	MSD	Water		×				1 MS/MSD SHARED VOLUME	
DUP01_20180611 (480-137307-3)	6/11/18	Eastern		Water		×				1	
DUP02_20180611 (480-137307-4)	6/11/18	Eastern		Water		×				_	
SG-11_20180611 (480-137307-5)	6/11/18	15:00 Eastern		Water		×				-	
SG-11_20180611 (480-137307-5MS)	6/11/18	15:00 Eastern	MS	Water		×				1 MS/MSD SHARED VOLUME	
SG-11_20180611 (480-137307-5MSD)	6/11/18	15:00 Eastern	MSD	Water		×				1 MS/MSD SHARED VOLUME	
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratory accreditation is forwarded under chain-of-custody. If the laboratory does not consider the laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica accorditation in the State of Origin issted above for analysis/sistamatix being analyzed, the samples must be shipped back to the TestAmerica aboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica	Laboratories, Inc. places thi ysis/tests/matrix being analy	s ownership of zed, the sample	method, anal) es must be sh	ipped back to	ion compli	ance upon out subcon serica laboratory or oth	ifract laborato	ies. This sample shipm s will be provided. Any	ent is forwarded	This sample shipment is forwarded under chain-of-custody. If the laboratory does not be provided. Any changes to accreditation status should be brought to TestAmenca.	ony does not

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.

Lossinie Hazard Identification				,	moult in the control of the control	sessen il sallibles	in a familiary louiser a	2011
Unconfirmed					Return To Client Dis	Disposal By Lab	Archive For	
Deliverable Requested 1, II, III, IV, Other (specify	ner (specify)	Primary Deliverable Rank; 2	ık; 2	05	Special Instructions/QC Requirements:			
Empty Kit Relinquished by:		Date		Time	7 4 6	Method of Shipment		
Refinduished by:		Date/Time 119	pap)	Company	Received by Market	Date/Tim	Oloo 6/14/2 Comp	S. XX
Relinquished by,	,	Date/Time		Сотралу	Regulation /	Date/Time:	Ď.	Comp
Reinquished by:		Date/Time:		Company	Received by: 2,2/	2,2 (2.6) DateTime	.0	Comp
Custody Seals Intact Custody Seal No.	al No.:				Cooler Temperature(s) PC and Other Remarks	arks.		

### Chain of Custody Record

TestAmerica Buffalo

10 Hazelwood Drive Amherst, NY 14228-2298 Phone (716) 691-2600 Fax (716) 691-7991	0	Chain o	of Cus	ain of Custody Record	оо	rd			D POPULATION OF THE POPULATION	OCENERAL ENVIRONMENTAL FEBTING
Client Information (Sub Contract Lab)	Sampler			Lab PM Barne	Lab PM Barnett, Eddie T	Jie T	Carrier T	Carrier Tracking No(s);	COC No. 480-42841.2	
Client Contact Shipping/Receiving	Phone			E-Mail eddie	barne	E-Mail: eddie.barnett@testamericainc.com	State of Origin	Origin:	Page Page 2 of 3	
Company TestAmerica Laboratories, Inc.					Accredi	Accreditations Required (See note); NELAP - New York			Job # 480-137307-1	-
Address 5102 LaRoche Avenue.	Due Date Requested: 6/25/2018	ij.				Analys	Analysis Requested		Preservation Codes	Code
City Savannah State, Zip	TAT Requested (days)	iys);			T 15724				B - NaCH C - Zn Acetate D - Nitric Acid	M - Hexane N - None O - AsNaO2 P - Na2O4S
GA, 31404 Phone. 912-354-7858(Tel) 912-352-0165(Fax)	#Od				(0)	poul			F - MeOH G - Amchior H - Ascorbic Acid	
Email	#OM				11000	cal Me				
Project Name. Hercules Giens Falls O&M Quarterly	Project #: 68000956				7777	o⊒ (g0			K-EDTA	W - pH 4-5 Z - other (specify)
Site	SSOW#:					W) da.		_	of coi	
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewster, Sesolid, Oewastefoll, BT-TISSUE, Ar-Air)	Field Filtered Perform MS/M	9_82108\82108			Total Number	Special Instructions/Note:
	X	X	Preserva	Preservation Code:	X				/\ ×	
SG-7_20180611 (480-137307-6)	6/11/18	14:45 Fastern		Water		×			-	
EB_20180611 (480-137307-7)	6/11/18	09:05 Fastern		Water		×			-	
MW-OB18_20180612 (480-137307-8)	6/12/18	08:40 Eastern		Water		×			-	
MW-OB19_20180612 (480-137307-9)	6/12/18	08:24 Eastern		Water		×			-	
AW-C2_20180612 (480-137307-12)	6/12/18	10:15 Fastern		Water		×			-	
MW-26_20180612 (480-137307-13)	6/12/18	12.30 Eastern		Water		×			-	
SW-01_20180612 (480-137307-14)	6/12/18	10:10 Eastern		Water		×			-	
SW-02_20180612 (480-137307-15)	6/12/18	11:20 Eastern		Water		×			+	
SW-03 20180612 (480-137307-16)	6/12/18	13.00		Water		×			-	

Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc. Possible Hazard Identification

Unconfirmed				Return To Client Disposal By Lab		Archive For	Months
Deliverable Requested: I, II, III, IV, Other (specify	II, III, IV, Other (specify)	Primary Deliverable Rank: 2	2	Special Instructions/QC Requirements.			
Empty Kit Relinquished by	11 0 0	Date:		Time:	Method of Shipment		
Relinquished by:	Many the	Date/Time 13 1/5	Hand Collinson	Company Received by My	Date/Time.		6/2/28 Company SA
Relinquished by		Date/Time	Company	Receive by	Date/Time:		Company
Relinquished by:		Date/Time;	Company	Received by	Date/Time.		Company
Custody Seals Intact	Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks.			
				. )			Ver. 09/20/2016

### Chain of Custody Record

TestAmerica Buffalo

10 Hazelwood Drive

**TestAmerica** 

Phone (716) 691-2600 Fax (716) 691-7991								The second second second second		THE SEMESTER OF SE	THE LEADER OF LAVINGBIRD LAL ISSUING
Client Information (Sub Contract Lab)	Sampler			Lab PM. Barnet	Lab PM. Barnett, Eddie T	Τe		Carrier Tracking No(s):		COC No. 480-42841.3	
Client Contact. Shipping/Receiving	Phone:			E-Mail eddie	e.barnett	E-Mail eddie.barnett@testamericainc.com	com	State of Origin New York		Page 3 of 3	
Company: TestAmerica Laboratories, Inc.					Accredita NELAP	Accreditations Required (See note) NELAP - New York	ote).			Job# 480-137307-1	
Address. 5102 LaRoche Avenue,	Due Date Requested: 6/25/2018	;;				Ā	Analysis Requested	quested		Preservation Codes	ise:
City. Savannah State, Zip. GA 31404	TAT Requested (days):	ys):							27570	B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4	N - None O - AsNaO2 P - Na2O4S O - Na2SO3
Phone. 912-354-7858(Tel) 912-352-0165(Fax)	PO#,				(0)	роци				F - MeOH G - Amchlor H - Ascorbic Acid	R - Na2S2O3 S - H2SO4 T - TSP Dodecatudrate
Email	#OM					eM les			9	I - Ice	U - Acetone
Project Name. Hercules Glens Falls O&M Quarterly	Project #: 68000956					on (ac			19uistr	K-EDTA L-EDA	W - pH 4-5 Z - other (specify)
Site	SSOW#.					M) də			01 001	Other:	
Sample Identification - Client ID (Lab ID)	Sample Date	Sample	Sample Type (C=comp, G=grab)	Matrix (wwwster, Sesolid, Owwasteioli, BToTissue, AnAlt)	Field Filtered Perform MSIM	92108/82108 90128/901			Total Number	Special In	Special Instructions/Note:
	X	X	Preserva	Preservation Code:	X				X		V
SW-03_20180612 (480-137307-16MS)	6/12/18	13:00 Fastern	MS	Water		×			-	MS/MSD SHARED VOLUME	OVOLUME
SW-03_20180612 (480-137307-16MSD)	6/12/18	13:00 Eastern	MSD	Water		×			-	MS/MSD SHARED VOLUME	OVOLUME
DUP02_20180612 (480-137307-17)	6/12/18	Eastern		Water		×			-		
SW-04_20180612 (480-137307-18)	6/12/18	14.55 Eastern		Water		×			-		
EB_20180612 (480-137307-20)	6/12/18	10:37 Fastern		Water		×			-		
AW-B18_20180612 (480-137307-21)	6/12/18	15:30 Fastern		Water		×			-		
AW-B18_20180612 (480-137307-21MS)	6/12/18	15:30 Eastern	MS	Water		×			-	MS/MSD SHARED VOLUME	OVOLUME
AW-B18_20180612 (480-137307-21MSD)	6/12/18	15:30 Eastern	MSD	Water		×			-	MS/MSD SHARED VOLUME	) VOLUME
					_						

current, yen an exequence of comparing a sequence of comparing the presence of comparing the compa Possible Hazard Identification

Ver: 09/20/2016 Months Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Mont Archive For Date Fine Date/Time Wethod of Shipment Cooler Temperature(s) <sup>a</sup>C and Other Ammark Special Instructions/QC Requirements: Received by: Time: Company 3 Primary Deliverable Rank: 2 Date/Time: Date(Time Deliverable Requested: I, III, IV, Other (specify) Custody Seal No. Empty Kit Relinquished by: Custody Seals Intact A Yes A No linquished by: inquished by: yd benshed by Unconfirmed

Client: Ashland LLC Job Number: 480-137307-1

Login Number: 137307 List Source: TestAmerica Buffalo

List Number: 2

Creator: Barnett, Eddie T

oreator. Darriett, Eddie 1		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Buffalo

Job Number: 480-137307-1

Login Number: 137307

List Number: 3

Client: Ashland LLC

Creator: Jones. Tyre D

List Source: TestAmerica Savannah List Creation: 06/14/18 03:23 PM

Creator: Jones, Tyre D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	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	N/A	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Buffalo

### 1

5

7

9

4.0

13



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: 480-137307-2

Client Project/Site: Hercules Glens Falls 2Q18

Revision: 1

For:

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

Attn: Mr. Jim Vondracek

Ashi Banott

Authorized for release by: 8/7/2018 11:16:10 AM

Eddie Barnett, Project Manager I (912)250-0280

eddie.barnett@testamericainc.com

·····LINKS ······

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

### TestAmerica Job ID: 480-137307-2

### **Table of Contents**

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
QC Sample Results	7
QC Association Summary	8
Lab Chronicle	9
Certification Summary	10
Method Summary	11
Sample Summary	12
Chain of Custody	
Receipt Checklists	18

### **Definitions/Glossary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-2

### **Qualifiers**

### **General Chemistry**

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

### **Glossary**

QC

RER

RPD

TEF

TEQ

RL

**Quality Control** 

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	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

TestAmerica Buffalo

### **Case Narrative**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-2

Job ID: 480-137307-2

Laboratory: TestAmerica Buffalo

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 2Q18

Report Number: 480-137307-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report has been revised on 08/07/18 per client request to report laboratory sample DUP01\_20180611 (480-137307-3) in addition to MW-OB17\_20180611 (480-137307-1), MW-OB21\_20180611 (480-137307-2), MW-OB18\_20180612 (480-137307-8), and MW-OB19\_20180612 (480-137307-9) separately.

### RECEIPT

The samples were received on 06/13/2018; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.7 C.

### **TOTAL CYANIDE**

Samples MW-OB17\_20180611 (480-137307-1), MW-OB21\_20180611 (480-137307-2), DUP01\_20180611 (480-137307-3), MW-OB18\_20180612 (480-137307-8) and MW-OB19\_20180612 (480-137307-9) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 06/15/2018.

Cyanide, Total recovered low for LLCS 680-527920/3-A. Refer to the QC report for details.

Cyanide, Total recovered low for the MS of sample MW-OB21\_20180611MS (480-137307-2) in batch 680-528013. Cyanide, Total recovered low for the MSD of sample MW-OB21\_20180611MSD (480-137307-2) in batch 680-528013. Refer to the QC report for details.

Samples MW-OB21\_20180611 (480-137307-2)[5X] and MW-OB19\_20180612 (480-137307-9)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

3

4

5

6

9

1 1

\_\_\_

10

### **Detection Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

Client Sample ID: MW-OB17\_20180611

Client Sample ID: MW-OB18\_20180612

TestAmerica Job ID: 480-137307-2

Lab Sample ID: 480-137307-1

Lab Sample ID: 480-137307-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.087		0.010	0.0025	mg/L	1	_	9012B	Total/NA
Client Sample ID: MW-	OB21_20180611					Lab	S	ample ID:	480-137307-
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.14	F1	0.050	0.013	mg/L	5	_	9012B	Total/NA
Client Sample ID: DUP	01_20180611					Lab	S	ample ID:	480-137307-
- Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.11		0.010	0.0025	mg/L		_	9012B	Total/NA

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

Client Sample ID: MW-OB19_2	20180612					Lab	Sample	ID: 480-137307-9
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Cyanide, Total	0.18		0.050	0.013	mg/L	5	9012B	Total/NA

### Client Sample Results

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-2

Client Sample ID: MW-OB17\_20180611

Lab Sample ID: 480-137307-1 Date Collected: 06/11/18 11:15

Matrix: Water

6

Date Received: 06/13/18 01:15

**General Chemistry** Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 0.010 0.0025 mg/L 06/15/18 05:30 06/15/18 10:55 Cyanide, Total 0.087

Client Sample ID: MW-OB21\_20180611 Lab Sample ID: 480-137307-2

Date Collected: 06/11/18 12:50 **Matrix: Water** 

Date Received: 06/13/18 01:15

**General Chemistry** Analyte Result Qualifier RL MDL Unit D Dil Fac Prepared Analyzed 0.050 06/15/18 05:30 06/15/18 11:54 0.14 F1 0.013 mg/L Cyanide, Total

Client Sample ID: DUP01\_20180611 Lab Sample ID: 480-137307-3

Date Collected: 06/11/18 00:00 **Matrix: Water** 

Date Received: 06/13/18 01:15

**General Chemistry** Analyte Result Qualifier RL MDL Unit Dil Fac Prepared Analyzed 0.11 0.010 0.0025 mg/L 06/15/18 05:30 06/15/18 11:00 Cyanide, Total

Client Sample ID: MW-OB18\_20180612 Lab Sample ID: 480-137307-8

Date Collected: 06/12/18 08:40 Matrix: Water

Date Received: 06/13/18 01:15

**General Chemistry** RL Analyte Result Qualifier MDL Unit D Dil Fac Prepared Analyzed 0.010 06/15/18 05:30 06/15/18 11:10 Cyanide, Total 0.11 0.0025 mg/L

Client Sample ID: MW-OB19 20180612 Lab Sample ID: 480-137307-9

Date Collected: 06/12/18 08:24

Date Received: 06/13/18 01:15

**General Chemistry** Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 0.050 Cyanide, Total 0.18 0.013 mg/L 06/15/18 05:30 06/15/18 11:59

**Matrix: Water** 

TestAmerica Job ID: 480-137307-2

102

85 \_ 115

Project/Site: Hercules Glens Falls 2Q18

Client: Ashland LLC

### Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 680-527920/1-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA Analysis Batch: 528013 Prep Batch: 527920 мв мв

Result Qualifier RL MDL Unit Analyte D Prepared Dil Fac Analyzed 0.010 06/15/18 05:30 Cyanide, Total 0.010 U 0.0025 mg/L 06/15/18 10:51

Lab Sample ID: HLCS 680-527920/4-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA Analysis Batch: 528013 Prep Batch: 527920 HLCS HLCS Spike

Analyte Added Result Qualifier Unit %Rec Limits Cyanide, Total 0.0750 0.0796 mg/L 106 90 - 110

Lab Sample ID: LCS 680-527920/2-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA Analysis Batch: 528013 Prep Batch: 527920 Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits

Lab Sample ID: LLCS 680-527920/3-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA Analysis Batch: 528013 Prep Batch: 527920 LLCS LLCS Spike %Rec.

0.0511

mg/L

Added Analyte Result Qualifier Unit %Rec Limits 0.0100 0.00867 J mg/L 87 Cyanide, Total 90 - 110

0.0500

Lab Sample ID: 480-137307-2 MS Client Sample ID: MW-OB21\_20180611 **Matrix: Water** Prep Type: Total/NA Analysis Batch: 528013 Prep Batch: 527920 Sample Sample Spike MS MS %Rec.

Result Qualifier Added Result Qualifier Analyte Unit Limits %Rec 0.14 F1 85 - 115 0.0500 0.150 F1 Cyanide, Total mg/L 13

Lab Sample ID: 480-137307-2 MSD Client Sample ID: MW-OB21\_20180611 **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 528013

Cyanide, Total

Sample Sample Spike MSD MSD %Rec. Result Qualifier Added Result Qualifier Analyte Unit D %Rec Limits RPD Limit 0.14 F1 0.0500 Cyanide, Total 0.158 F1 mg/L 29 85 - 115 5 20

Prep Batch: 527920

### **QC Association Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-2

### **General Chemistry**

### **Prep Batch: 527920**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-1	MW-OB17_20180611	Total/NA	Water	9012B	
480-137307-2	MW-OB21_20180611	Total/NA	Water	9012B	
480-137307-3	DUP01_20180611	Total/NA	Water	9012B	
480-137307-8	MW-OB18_20180612	Total/NA	Water	9012B	
480-137307-9	MW-OB19_20180612	Total/NA	Water	9012B	
MB 680-527920/1-A	Method Blank	Total/NA	Water	9012B	
HLCS 680-527920/4-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 680-527920/2-A	Lab Control Sample	Total/NA	Water	9012B	
LLCS 680-527920/3-A	Lab Control Sample	Total/NA	Water	9012B	
480-137307-2 MS	MW-OB21_20180611	Total/NA	Water	9012B	
480-137307-2 MSD	MW-OB21_20180611	Total/NA	Water	9012B	

### Analysis Batch: 528013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137307-1	MW-OB17_20180611	Total/NA	Water	9012B	527920
480-137307-2	MW-OB21_20180611	Total/NA	Water	9012B	527920
480-137307-3	DUP01_20180611	Total/NA	Water	9012B	527920
480-137307-8	MW-OB18_20180612	Total/NA	Water	9012B	527920
480-137307-9	MW-OB19_20180612	Total/NA	Water	9012B	527920
MB 680-527920/1-A	Method Blank	Total/NA	Water	9012B	527920
HLCS 680-527920/4-A	Lab Control Sample	Total/NA	Water	9012B	527920
LCS 680-527920/2-A	Lab Control Sample	Total/NA	Water	9012B	527920
LLCS 680-527920/3-A	Lab Control Sample	Total/NA	Water	9012B	527920
480-137307-2 MS	MW-OB21_20180611	Total/NA	Water	9012B	527920
480-137307-2 MSD	MW-OB21_20180611	Total/NA	Water	9012B	527920

. 400 107007 2

TestAmerica Buffalo

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

Client Sample ID: MW-OB17\_20180611

Lab Sample ID: 480-137307-1

Lab Sample ID: 480-137307-8

Date Collected: 06/11/18 11:15 Date Received: 06/13/18 01:15 Matrix: Water

Batch Dilution Batch Batch Prepared **Prep Type** Type Method Run Factor Number or Analyzed Analyst Lab Total/NA 9012B 527920 06/15/18 05:30 DAM TAL SAV Prep 9012B DAM TAL SAV Total/NA Analysis 1 528013 06/15/18 10:55

Date Collected: 06/11/18 12:50 Matrix: Water

Date Received: 06/13/18 01:15

Batch Batch Dilution Batch Prepared **Prep Type** Type Method Run Factor Number or Analyzed Analyst 9012B 527920 DAM TAL SAV Total/NA Prep 06/15/18 05:30 Total/NA Analysis 9012B 5 528013 06/15/18 11:54  $\mathsf{D}\mathsf{A}\mathsf{M}$ TAL SAV

Date Collected: 06/11/18 00:00 Matrix: Water

Date Received: 06/13/18 01:15

Batch Dilution Batch Batch Prepared Prep Type Туре Method Run Factor Number or Analyzed Analyst Lab Total/NA Prep 9012B 527920 06/15/18 05:30 DAM TAL SAV 9012B TAL SAV Total/NA Analysis 528013 06/15/18 11:00 1 DAM

Client Sample ID: MW-OB18 20180612

Date Collected: 06/12/18 08:40 Matrix: Water

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		1	528013	06/15/18 11:10	DAM	TAL SAV

Date Collected: 06/12/18 08:24 Matrix: Water

Date Received: 06/13/18 01:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			527920	06/15/18 05:30	DAM	TAL SAV
Total/NA	Analysis	9012B		5	528013	06/15/18 11:59	DAM	TAL SAV

Laboratory References:

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

TestAmerica Buffalo

### **Accreditation/Certification Summary**

Client: Ashland LLC TestAmerica Job ID: 480-137307-2

Project/Site: Hercules Glens Falls 2Q18

Laboratory: TestAmerica Buffalo

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

9012B

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Cyanide, Total

**Laboratory: TestAmerica Savannah** 

9012B

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority New York	Program NELAP		EPA Region 2	Identification Number 10842	Expiration Date 03-31-19
The following analytes	are included in this report, bu	t accreditation/certifica	tion is not offered by th	e governing authority:	
Analysis Method	Prep Method	Matrix	Analyt	е	

Water

Λ

5

\_

4.0

10

16

### **Method Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-2

Method	Method Description	Protocol	Laboratory
9012B	Cyanide, Total andor Amenable	SW846	TAL SAV
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV

### Protocol References:

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

### Laboratory References:

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

9

4

6

0

9

11

12

16

### **Sample Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137307-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-137307-1	MW-OB17_20180611	Water	06/11/18 11:15	06/13/18 01:15
480-137307-2	MW-OB21_20180611	Water	06/11/18 12:50	06/13/18 01:15
480-137307-3	DUP01_20180611	Water	06/11/18 00:00	06/13/18 01:15
480-137307-8	MW-OB18_20180612	Water	06/12/18 08:40	06/13/18 01:15
480-137307-9	MW-OB19_20180612	Water	06/12/18 08:24	06/13/18 01:15

4

6

8

9

12

13

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

480501-Albany Chain of Custody Record

**TestAmerica** 

Control   Cont	Pinone   Second   Pinone   Pinone   Second   Pinone   P	Perform MS/MSD (Yes or No)  Perform MS/MSD (Yes or No)  Perform MS/MSD (Yes or No)  N 196A - Chromium, hexavalent (field filtered)  N 196A - Chromium, hexavalent (field filtered)  N 196A - Chromium, hexavalent (field filtered)  N 2540C - Alatonese as calcium carbonate  N 2540C - Hardnese as calcium carbonate  N 2540C - Hardnese as calcium carbonate  N 2540C - MOD) TCL list OLM04.2 (Dichlorobenzenes [1,2-, 1,4-])  N 2640C - MOD) TCL list OLM04.2 (Dichlorobenzenes [1,2-, 1,4-])	Page: of Z  Job #:  Preservation Codes:  A - HCL B - NaOH N - None B - NaOH N - NazO4S D - Nitrio Acid P - As2O4S E - NatSO4 R - NazSO3 F - MeOH C - Amchlor R - NazSO3 F - MeOH C - Try P Dodecathydra L- Leb L- EDA Special Instructions/Note:  Special Instructions/Note:
Compared C	Ashland Clens Falls   Ashland Falls   Ashland Clens Falls   Ashland Falls   Ashland Falls   Ashland Falls	The field Filtered Sample (Yes or No)  State Cyanide, Total  Tybek - Chromium, hexavalent (field filtered)  Tybek - Chromium, hexavalent (field filtered)  Tybek - Chromium, hexavalent (field filtered)  Tybek - Chromium and Vanadium (field filtered)	Job #:  Preservation Codes:  A - HCL B - Nach C - Zn Acetale C - Zn Acetale D - Nitric Acid D - Nitric Acid C - Nad SOd 3 D - Nad SOd 4 D - Lob Acetane J - Di Water V - MCAA N - EDTA N - DI Water V - MCAA N - EDA D - Special Instructions/Note:  Special Instructions/Note:
File   Contain from   Standard	TAT Requested (19yp):   Standard	Field Filtered Sample (Yes or No)  Perform MS/MSD (Yes or No)  7 7396A - Chromium, hexavalent (field filtered)  6020A - Dissolved Total Dissolved Solids (field filtered)  7 7340C - Alatineses as calcium and Vanadium (field filtered)  D 2340C - Hardneses as calcium carbonate  C 2340C - Hardneses as calcium carbonate  D 2340C - Hardneses as calcium carbonate	Preservation Codes:  A - HCL  B - NaOH  C - Zn Acetale  D - Nath Acid  E - NaHSO4  E - NaHSO4  E - NaCS203  G - Amriblor  H - Ascorbic Acid  I - Ice  U - Acetone  O - Acetone
The control of the	TAT Requested (days)   Standard   Standard	Field Filtered Sample (Yes or No)  Perform MS/MSD (Yes or No)  A X X X D 9012B - Cyanide, Total  T196A - Chromium, hexavalent (field filtered)  T196A - Chromium, hexavalent (field filtered)  T2540C Calcd - Total Dissolved Solids (field filtered)  S260C - Calcd - Total Dissolved Solids (field filtered)  D 2340C - Hardness as calcium carbonate	B - Nach  B - Nach  C - Zn Acetate  C - Zn Acetate  D - Nitric Acid  C - Anaby So - Anabods  E - Nath So - Anabods  I - Ice  J - DI Water  N - Ph 4-5  L - EDA  C - Other (specify)  Other:
Fig.   Committee	Sample Identification	Feld Filtered Sample (Yes or No)  Perform MS/MSD (Yes or No)  Y 196A - Chromium, hexavalent (field filtered)  T196A - Chromium, hexavalent (field filtered)  T196A - Chromium, hexavalent (field filtered)  T2540C - Hardness as calcium carbonate  D2340C - Hardness as calcium carbonate	D. Nitrio Acid P. Na2O4\$ E. Na4SO4 C. Na2O33 F. MeOH H. Ascorbic Acid T. TSP Dodecahydra J. Di Water V. MCAA K. EDTA W. ph 4-5 L. EDA Cother:  Special Instructions/Note:
Fails   Confidence   Confiden	Properties   Properties   Properties   Properties	Field Filtered Sample (Yes or No)  Perform MS/MSD (Yes or No)  7 756A - Chromium, hexavalent (field filte filtered)  7 7496A - Chromium, hexavalent (field filtered)  7 2440C Calcd - Total Dissolved Solids (filtered)  7 2540C - Hardness as calcium carbonate (filtered)	Special Instructions/Note:    R. A. R. C. F. F. C.
All   Control	Propert #:   Sample   Garden   Propert #:   Garden   Ga	Teield Filtered Sample (Yes or No)  Perform MS/MSD (Yes or No)  Perform MS/MSD (Yes or No)  Tabek - Chromium, hexavalent (fie for No)	-   ce   -
Falls Quartery Event   Sample Date   Type   (**east 1000)   Sample Date   Type	Project Name	S   S   S   Frield Filtered Sample (Ves or S   S   S   S   S   S   S   S   S   S	K-EDTA W-ph 4-5 L-EDA Z-other (specify) Other:  Special Instructions/Note:
Fails	Sample Date   Sample   Sampl	S   S   S   Field Filtered Samp	Special Instructions/Note:
	Sample Identification  Sample Identification  Sample Identification  Sample Date Time Gagably Brainway Annion Code: Younger Mater N (Cacomp. Preservation Code: X (Cacomp. Preservation Cacomp. Preservation P		25
-08 7, 30 806     6/11/18   115	MW-0817_3018061    6/11/18   1115   6   Water N		Runextraboth 165 for
-0817 30180611 6/11/18 115 6 Water N V X   115	MW-0817_3018061    6/11/18   1115   6   Water N     MW-6621_3018061    6/11/18   1350   6   Water N     DUPO1_3018061    6/11/18   1500   6   Water N     SC-11_3018061    6/11/18   1500   6   Water N     SC-11_3018061    6/11/18   1500   6   Water N     SC-11_3018061    6/11/18   1445   6   Water N     MW-0818_3018061    6/11/18   834   6   Water N     MW-360_3018061    6/13/18   834   6   Water N     DUPO1_308061    6/13/18   1633   6   Water N     DUPO1_308061    6/13/18   1633   6   Water N     DUPO1_308061    6/13/18   1633   6   Water N     DUPO1_308061    G/13/18   G/13/1	2>22	Runextabed 165for
	MW-6621:30180611		Runextheboth 165 for
Pol   20 806	DUPC3 30180611		-
Delignoce	6/11/18 15CO 6 Water N 6/11/18 1445 C Water N 6/11/18 6965 C Water N 6/12/18 846 C Water N 6/12/18 844 C Water N 6/12/18 824 C Water N 6/12/18 824 C Water N 6/12/18 824 C Water N 6/12/18 1023 C Water N 6/12/18 1023 C Water N	-	
30   8   1   1   1   1   1   1   1   1   1	6/11/18 15CC 6 Water N 6/11/18 1445 6 Water N 6/12/18 54 C Water N 6/12/18 524 C Water N 6/12/18 524 C Water N 6/12/18 1032 C Water N 6/12/18 1032 C Water N		
1	6/11/18 1445 6 water N 6/12/18 546 1 water N 6/12/18 546 1 water N 6/12/18 1633 6 water N 6/12/18 — 6 water N	<i>λ λ ν</i>	2
30180611	6/11/18 6965 C Water N 6/12/18 546 C Water N 6/12/18 524 C Water N 6/12/18 1622 C Water N 6/12/18 — ( Water N 6/12/18 — (	2	1
CORR   Color   Corporary   Color   Corporary   Color	6/12/18 946 6 Water N 6/12/18 1032 6 Water N 6/12/18 1032 6 Water N 6/12/18 — 6 Water N ant Poison B Unknown Radiological	2	Run 6 B.2018661445
1   20806   3   6   13   18   163.2   6   Water   W   X	6/13/18 834 6 Water N 6/13/18	2	
Company   Constraint   Constr	6/12/18/1622 ( Water N 6/12/18/— ( Water N ant Poison B Unknown Radiological		1
Output   Content   Conte	ant Poison B Unknown Radiological	X X	3
Sample Disposal (A fee may be assessed if samples are retained longer than 1 and Identification and Identi	ant Poison B Unknown Radiological	N	3
quested: I. II. IV. Other (specify)  quested: I. III. IV. Other (specify)  All Local Date:  Time:    Time:   Mathod of Shipment:   Company   Registed by:   Confer Temperature(s) "C and Other Remarks:   Other Temperature(s)" C and Other Remarks:   Other Temperature(s) "C and Other Remarks:   O		Sample Disposal ( A fee may be assessed if samples are re Page 19   Page 19	etained longer than 1 month)
High Hause by:    Marked by:   Time:   Time:   Mathod of Shipment:   Mathod of Shipment:		Cipy Colleged Su	aloth on
MINE FAULT Custody Seal No.:    Congress of the Factor of	nquished by:	Method of Shipment	4
Ral Lell Scell Seal No.: Date/Time: Date/Time: Company Company Company Company Company Company Company Control Seal No.: Date/Time:	Mile 1-Stand Bayorine 14 1710 Company	Recover by Assily Baterline	18 1710
Ils Intact; Custody Seal No.: Contract Company (Cooler Temperature(s) °C and Other Remarks: O. )	Ral Lech 6-12-18 1800		0105
Ilis Intact: Custody Seal No.:	Date/Time:		Сомрану
-	ils Intact:	Cooler Temperature(s) <sup>6</sup> C and Other Remarks:	1# 1110

Phone (912) 354-7858 Fax (912) 352-0165

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

## Chain of Custody Record

TestAmerica THE CASE OF THE PROPERTY OF THE PR

40 Kuneyta bottle forms/mg 11 un extra botter Ser ms/no 8 JRINEP 2018 DELD AS OF THE P - Na204S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate ore I.D. On Lobles Special Instructions/Note: U - Acetone V - MCAA W - ph 4-5 Z - other (specify) # 3 O - AsNaO2 Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Mont COC No. 680-76228-31646.1 Preservation Codes of to G - Amchlor H - Ascorbic Acid A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH 1710 I - Ice J - DI Water K - EDTA レス Page 2 defittered Samples Archive For Date/Time: Total Number of containers 1 Date Time - 18 fethod of Shipmen Disposal By Lab Analysis Requested Special Instructions/QC Requirements: oler Temperature(s) °C and Other Remarks eddle.barnett@testamericainc.com × Lab PM: Barnett, Eddie T E-Mail: λ 2 2 B Perform MS/MSD (Yes or No) Time: BT=Tissue, A.Air Althou (W=water, S=salid, O=wastefoll, Preservation Code: Water Matrix Water Water Water Water Water Water Water Water Water Company Water итрапу Type (C=comp, G=grab) Sample Radiological 2636 0 0 9 0 0 0 BWE 0 1800 Standard 536 1455 Sample 103 1230 010 1130 1300 16/5 692 1 Jamet Date: Unknown TAT Requested (days) 4-12-18 Due Date Requested; 6/12/18 31/ne/5 31/21/9 81/21/9 6/12/18 Sample Date 2/13/18 260 31/21/9 81/21/ 6/12/18 81/21/3 4502471936 68000956 roject #: Poison B evondracek@ashland.com, cassie.reuter@ehs support.com Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify) E1908105 AW-818 20186613 5W-64\_20180612 5W-03-20186612 Custody Seal No. E1308108 51 308105 LO - WE DUPOS-2018CG12 value Hercules Glens Falls Quarterly Event Flammable EBJ JOHNOGIA TRIP Blank Possible Hazard Identification 5200 Blazer Parkway DS-4 mpty Kit Relinquished by: 41W-CZ Custody Seals Intact: MW-36 Client Information Sample Identification SW-OI A Yes A No Ashland Glens Falls Mr. Jim Vondracek 514-790-6146 Ashland Inc OH, 43017 State, Zip: Dublin

Chain of Custody

estamerica buttalo

<b>TestAmerica</b>	THE CEADER IN ENVIRONMENTAL TESTING
Record	

	O	Chain of Custody Record	of Cus	tody R	eco	rd					
Amherst, NY 14228-2298 Phone (716) 691-2600 Fax (716) 691-7991				•						THE CEADER IN ENVIRONMENTAL TESTING	NAMENTAL TESTING
Client Information (Sub Contract Lab)	Sampler			Lab PM. Barnett,	M. lett, Edo	Eddie T		Carrier Tracking No(s)	(s):	COC No. 480-42841.1	
Client Contact: Shipping/Receiving	Phone			E-Mail eddie	e barne	E-Mail eddie barnett@testamericainc.com	nc.com	State of Ongin. New York		Page Page 1 of 3	
Company TestAmerica Laboratories, Inc.					Accredit NELAF	Accreditations Required (See note) NELAP - New York	e note):			Job #. 480-137307-1	
Address. 5102 LaRoche Avenue.	Due Date Requested: 6/25/2018	:pa					Analysis	Analysis Requested		ion Code	
City. Savannah	TAT Requested (days):	ays):			133					B - NaOH N - 1 C - Zn Acetate O - 2	M - Hexane N - None O - AsNaO2
State, Zp: GA, 31404											P - Na204S Q - Na2SO3
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	#Od				(0	роцы		_		Cid	R - Na2SS203 S - H2SO4 T - TSP Dodecahydrate
Email	"MOW					M (so)				1 - Ice J - DI Water	U - Acetane V - MCAA
Project Name: Hercules Glens Falls O&M Quarterly	Project # 68000956					) (ac				K - EDTA L - EDA	W - pH 4-5 Z - other (spealfy)
Site	SSOW#.				_	w) da	_			Other	
			Sample	Matrix (w-water,		n9_8\$1				o laguu	
Sample Identification - Client ID (Lab ID)	Sample Date	Sample	Type (C=comp, G=grab)	Swsolld, O=waste/olf, BT=Tissue, A=Air)	Field Fiff	9012B/90				Special Instructions/Note:	ctions/Note:
		X	Preserva	Preservation Code:	$\bigotimes$		問題	<b>建</b> 超 超 超			
MW-OB17_20180611 (480-137307-1)	6/11/18	11:15 Eastern		Water		×				1	
MW-OB21_20180611 (480-137307-2)	6/11/18	12:50 Eastern		Water		×				1	
MW-0B21_20180611 (480-137307-2MS)	6/11/18	12:50 Fastern	MS	Water		×				1 MS/MSD SHARED VOLUME	LUME
MW-OB21_20180611 (480-137307-2MSD)	6/11/18	12:50 Eastern	MSD	Water		×				1 MS/MSD SHARED VOLUME	LUME
DUP01_20180611 (480-137307-3)	6/11/18	Eastern		Water		×				1	
DUP02_20180611 (480-137307-4)	6/11/18	Eastern		Water		×				-	
SG-11_20180611 (480-137307-5)	6/11/18	15:00 Eastern		Water		×				T	
SG-11_20180611 (480-137307-5MS)	6/11/18	15:00 Eastern	MS	Water		×				1 MS/MSD SHARED VOLUME	LUME
SG-11_20180611 (480-137307-5MSD)	6/11/18	15:00 Eastern	MSD	Water		×				1 MS/MSD SHARED VOLUME	LUME
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratory estimated under chain-of-custody. If the laboratory does not be subject to change to analysis/tests/marity 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	a Laboratories, Inc. places th	e ownership of zed, the sampl	method, analy es must be sh	te & accreditat	on compl	iance upon out subc	contract laboral other instructic	ories. This sample shipm	ent is forwarded	This sample shipment is forwarded under chain-of-custody. If the laboratory does not ha provided. Any channes to accreditating status should be brought to Tastametra.	laboratory does not

Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc. Possible Hazard Identification

Unconfirmed		Return To Client Disposal By Lab	Archive For
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Special Instructions/QC Requirements:	
Empty Kit Relinquished by: 7	Date	Time; A Method of Shipment	hipment:
Reinquished by:	PROBERION PORT 611 SIGNED	Received by Many	Office 6/14/2
Relinquished by:	Date/Time: Company		Date/Time:
Relinquished by:	Date/Time: Company	Received by: $2,2,4$ DateTime.	Jate/Time:
Crietody Spale Intact   Crietody Spal No		Cooler Temperaturate) PC and Other Demarke	

Ver: 09/20/2016

Company

### Chain of Custody Record

TestAmerica Buffalo

<u>TestAmerica</u>

10 Hazelwood Drive Amherst, NY 14228-2298 Phone (716) 691-2600 Fax (716) 691-7991	ភ	hain c	ain of Custody Record	tody F	ecor	0			Test,	estAmerica
Client Information (Sub Contract Lab)	Sampler.			Lab PM Barnet	Lab PM Barnett, Eddie T	Te	Carrier Tracking No(s)	ng No(s).	COC No 480-42841.2	2
Client Contact Shipping/Receiving	Phone			E-Mail eddie	e.barnett(	E-Mail eddie barnett@testamericainc.com	State of Origin New York		Page Page 2 of 3	
Company TestAmerica Laboratories, Inc.					Accreditati NELAP	Accreditations Required (See note): NELAP - New York			Job # 480-137307-1	
Address 5102 LaRoche Avenue,	Due Date Requested 6/25/2018	17				Analysi	Analysis Requested		Preservation Codes	Codes:
City Savannah	TAT Requested (days	/s}:			1355 1814				B - NaOH C - Zn Acetate	
State, 2/p. GA, 31404									E - NaHSO4 F - MeOH	
Phone 912-354-7858(Tel) 912-352-0165(Fax)	#Od				135	poule			G - Amchior H - Ascorbic Acid	
Email	#OM				(on	CSI WH				
Project Name. Hercules Giens Falls O&M Quarterly	Project #: 68000956				10 sa)	0D) F9		_		W - pH 4-5 Z - other (specify)
Site	SSOW#.				() asi	w) dau		_	of co	
Commission Pline II de III	Samie Date	Sample	Sample Type (C=comp,	Matrix (www.eier. Swsoild, Owwastefoll,	leld Filtered erform MS/M	d_82106/8210			otal Number	Coorie Instructions Meteo
Campre reministration - chem in (Lab in)		X	Preserva	Preservation Code:	X					al man denotismone,
SG-7_20180611 (480-137307-6)	6/11/18	14:45 Fastern		Water	E	×			-	
EB_20180611 (480-137307-7)	6/11/18	09.05 Eastern		Water		×			-	
MW-OB18_20180612 (480-137307-8)	6/12/18	08:40 Eastern		Water		×			-	
MW-OB19_20180612 (480-137307-9)	6/12/18	08:24 Eastern		Water		×			-	
AW-C2_20180612 (480-137307-12)	6/12/18	10:15 Eastern		Water		×			-	
MW-26_20180612 (480-137307-13)	6/12/18	12.30 Eastern		Water		×			-	
SW-01_20180612 (480-137307-14)	6/12/18	10:10 Eastern		Water		×			-	
SW-02_20180612 (480-137307-15)	6/12/18	11.20 Eastern		Water		*			1	
SW-03_20180612 (480-137307-16)	6/12/18	13:00 Eastern		Water		×			-	
Note: Since laboratory accreditations are subject to change. TestAmerica Laboratories, Inc. places the ownership of method, analyse & accreditation out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the 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. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, inc.	Laboratories, Inc. places the ysisflests/matrix being analyze current to date, return the s	ownership of ed, the samp igned Chain of	method, analy les must be sh of Custody atte	te & accredital ipped back to sting to said o	ion compliai the TestAme omplicance	nce upon out subcontract laboratical laboratical laboratory or other instruto TestAmerica Laboratories,	ratories. This sample ctions will be provided no.	shipment is forwa Any changes to	arded under chain-of-cus accreditation status sho	This sample shipment is forwarded under chain-of-custody. If the laboratory does not be provided. Any changes to accreditation status should be brought to TestAmerica.
Possible Hazard Identification Unconfirmed					Sam	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)  Return To Client Disposal By Lab Archive For Mon	y be assessed if san	samples are	retained longer th	an 1 month) Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	ble Rank:	2		Spec	Special Instructions/QC Requirements	irements:			
Empty Kit Relinquished by:	, ,	Date:			Time:	,	Method	Method of Shipment	h	
Relinquished by:	Date/Time/7/	32	SK	Company	9	Received by Man	1	Date/Time.	14/0) (	12 Company
Della Marie Cara Cara Cara Cara Cara Cara Cara Car	Production of the second		-	2		11	1	1	1	1000

linquished by. dinquished by:

Custody Seals Intact: Custody Seal No.

### **TestAmerica**

### Chain of Custody Record

TestAmerica Buffalo

10 Hazelwosd Drive Amherst, NY 14228-2298 Phone (716) 691-2600 Fax (716) 691-7991	J	hain (	Chain of Custody Record	tody F	eco	P				THE LEADER IN ENVIRONMENTAL TESTING
Client Information (Sub Contract Lab)	Sampler			Lab PM Barne	Lab PM: Barnett, Eddie T	T el		Carrier Tracking No(s).		COC No. 480-42841.3
Clent Contact Shipping/Receiving	Phone:			E-Mail eddie	e.barnet	E-Mail: eddie.barnett@testamericainc.com	- c	State of Ongin New York		Page Page 3 of 3
Company: TestAmerica Laboratories, Inc.					Accredit	Accreditations Required (See note) NELAP - New York				Job#:
Address. 5102 LaRoche Avenue.	Due Date Requested 6/25/2018	ed:				Anal	ysis Re	Analysis Requested		Code
City. Savannah State, Zip. GA 31404	TAT Requested (days):	ays):							275784	tate cod 34
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	#0d				(0)	роцы				F - MeOH R - Na2S203 G - Amchlor S - H2S04 H - Ascorbic Acid T - TSP Dorlecatud
Email	#OM				-	cal Me			9.	1 - Ice J - Di Water
Project Name. Hercules Glens Fails O&M Quarterly	Project #: 68000956				10 (Yes	on (ao			enistn	K-EDTA L-EDA
Site	SSOW#.				10.1100.00	W) də			00 10	Other:
Sample Identification - Client ID (1 ah ID)	Samule Date	Sample	Sample Type (C=comp, G=crab)	Matrix (wewster, S=solid, O=wasteroll,		g_82106/82106	Name of the last o		Total Number	Spacial Instructions (Note:
Sample recognication - Offers ID (cast ID)	X	X		Preservation Code:	X	100 Hall 1991 Hall 1991			ı X	
SW-03_20180612 (480-137307-16MS)	6/12/18	13:00 Fastern	MS	Water		×			-	MS/MSD SHARED VOLUME
SW-03_20180612 (480-137307-16MSD)	6/12/18	13:00 Eastern	MSD	Water		×			1	MS/MSD SHARED VOLUME
DUP02_20180612 (480-137307-17)	6/12/18	Eastern		Water		×			1	
SW-04_20180612 (480-137307-18)	6/12/18	14:55 Fastern		Water		×			-	
EB_20180612 (480-137307-20)	6/12/18	10:37 Eastern		Water		×			-	
AW-B18_20180612 (480-137307-21)	6/12/18	15:30 Eastern		Water		×			-	
AW-B18_20180612 (480-137307-21MS)	6/12/18	15:30 Eastern	MS	Water		×			-	MS/MSD SHARED VOLUME
AW-B18_20180612 (480-137307-21MSD)	6/12/18	15:30 Eastern	MSD	Water		×			-	MS/MSD SHARED VOLUME

currently maintain accreditation in the State of Ongin 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. Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification

Unconfirmed					Return To Client	Disposal By Lab	Archive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)	II, III, IV, Other (specify)	Primary Deliverable Rank: 2	ık: 2		Special Instructions/QC Requirements	S,		
Empty Kit Relinquished by	y.	Date:		Time:	1 1 1 n	Method of Shipment	ıt	
Relinquished by:	Mus the	Date(Time 13 11 8	1700	Ellenhoo	Received by	Date Gime	(0/2	14/2 Company
Reinquished by:		Date/Time		Company	Recompanies /	Date/Time:	-	Company
Relinquished by		Date/Time:		Company	Received by.	Date/Time	me	Company
Custody Seals Intact:	Custody Seal No.:				Cooler Temperature(s) °C and Other Amark 7.6	(9. t )		
								A10C/0C/90 reV

### **Login Sample Receipt Checklist**

Client: Ashland LLC Job Number: 480-137307-2

Login Number: 137307 List Source: TestAmerica Buffalo

List Number: 2

Creator: Barnett, Eddie T

Creator. Darriett, Eddie 1		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	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").	True	
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: 480-137307-2

Login Number: 137307 List Source: TestAmerica Savannah

List Number: 3 List Creation: 06/14/18 03:23 PM

Creator: Jones, Tyre D		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	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	N/A	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

5

6

8

40

13

| | 4



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: 480-137390-2

Client Project/Site: Hercules Glens Falls 2Q18

For:

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

Attn: Mr. Jim Vondracek

Ashi Barrott

Authorized for release by: 7/2/2018 8:26:32 AM

Eddie Barnett, Project Manager I (912)250-0280

eddie.barnett@testamericainc.com

·····LINKS ······

Review your project results through
Total Access

**Have a Question?** 



**Visit us at:**www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 480-137390-2

Project/Site: Hercules Glens Falls 2Q18

### **Table of Contents**

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
QC Association Summary	7
Lab Chronicle	8
Certification Summary	9
Method Summary	10
Sample Summary	11
Chain of Custody	12
Receipt Checklists	14

-6

4

5

7

9

10

12

1:

### **Definitions/Glossary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

**Quality Control** 

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)
Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

TestAmerica Job ID: 480-137390-2

### Glossary

QC

RER

RPD TEF

TEQ

RL

Abbreviation	These commonly used abbreviations may or may not be present in this report.
a	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

7/2/2018

### **Case Narrative**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137390-2

Job ID: 480-137390-2

**Laboratory: TestAmerica Buffalo** 

Narrative

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 2Q18

Report Number: 480-137390-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

### RECEIPT

The sample was received on 06/14/2018; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 0.7° C.

### **TOTAL CYANIDE**

Sample MW-OB23\_20180613 (480-137390-3) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The sample was prepared and analyzed on 06/18/2018.

Sample MW-OB23\_20180613 (480-137390-3)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

6

Л

6

9

11

12

### **Detection Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137390-2

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Cyanide, Total	2.0	0.20	0.050 mg/L	20	9012B	Total/NA

0

\_\_\_\_

4

5

0

8

9

10

15

### **Client Sample Results**

Client: Ashland LLC

Date Collected: 06/13/18 08:53

Date Received: 06/14/18 01:00

Project/Site: Hercules Glens Falls 2Q18

Client Sample ID: MW-OB23 20180613

TestAmerica Job ID: 480-137390-2

Lab Sample ID: 480-137390-3

**Matrix: Water** 

**General Chemistry** 

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 0.20 0.050 mg/L 06/18/18 06:00 06/18/18 12:07 Cyanide, Total 2.0

### **QC Association Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137390-2

### **General Chemistry**

**Prep Batch: 528152** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137390-3	MW-OB23_20180613	Total/NA	Water	9012B	

Analysis Batch: 528241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-137390-3	MW-OB23_20180613	Total/NA	Water	9012B	528152

2

A

4

^

7

8

10

### **Lab Chronicle**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137390-2

Date Collected: 06/13/18 08:53 Matrix: Water

Date Received: 06/14/18 01:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			528152	06/18/18 06:00	DAM	TAL SAV
Total/NA	Analysis	9012B		20	528241	06/18/18 12:07	DAM	TAL SAV

### **Laboratory References:**

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

5

7

8

9

11

12

# **Accreditation/Certification Summary**

Client: Ashland LLC TestAmerica Job ID: 480-137390-2

Project/Site: Hercules Glens Falls 2Q18

**Laboratory: TestAmerica Buffalo** 

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

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-18 *

**Laboratory: TestAmerica Savannah** 

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program		EPA Region	<b>Identification Number</b>	Expiration Date
New York	NELAP		_ 2	10842	03-31-19
TOW TOTAL	1122711		-	10012	00 01 10
The following englytes	are included in this renewa	t but correditation/oc	rtification is not off	ared by the governing outb	a rituu
The following analytes	are included in this repor	t, but accreditation/ce	rtification is not offe	ered by the governing author	ority:
Analysis Method	Prep Method	Matrix	Analyt	e	

Tierica 300 iD. 400-13/390-2

3

6

Ö

10

11

12

13

<sup>\*</sup> Accreditation/Certification renewal pending - accreditation/certification considered valid.

# **Method Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137390-2

Method	Method Description	Protocol	Laboratory
9012B	Cyanide, Total andor Amenable	SW846	TAL SAV
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV

### **Protocol References:**

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

### **Laboratory References:**

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

4

5

0

8

10

11

12

1

# **Sample Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q18

TestAmerica Job ID: 480-137390-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-137390-3	MW-OB23 20180613	Water	06/13/18 08:53	06/14/18 01:00

\_

4

5

8

9

11

13

# Chain of Custody Record

480501-Albany

**TestAmerica** P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrat Special Instructions/Note: U - Acetone V - MCAA W - ph 4-5 Z - other (specify) Company O-AsNaO2 Months Company Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Mont COC No: 680-76228-31646.1 Preservation Codes of 1710 G - Amchlor H - Ascorbic Acid A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH I - Ice J - DI Water K - EDTA L-EDA Page: Archive For bottles Marked on Date/Time. 60 ✓ X Total Number of containers 00 5 Date/Time 480-137390 COC Disposal By Lab Analysis Reques Special Instructions/DC Requireme eddie barnett@testamericainc.com S640C\_Calcd - Total Dissolved Solids (field filtered) x 196A - Chromium, hexavalent (field filtered) X X Lab PM: Barnett, Eddie T ×  $\times$ 1012B - Cyanide, Total m Perform MS/MSD (Yes or No) Time: Field Filtered Sample (Yes or No) E-Mail: \$ ompany (W=water, Srsolid, O=waste/oll, Preservation Code: Water Water Water Matrix Water Water Water Water Water Water Water Water Radiological (C=comp, G=grab) Sample 5 0 0 0 Cowa 9 9 2636 0 1800 Standard 1797 1230 Sample 1025 1300 016 945 140 Time 853 bCU barrett Date: 166 038 Unknown (AT Requested (days) 81-81-7 Due Date Requested: 13/18 81/81/9 12/18 113/18 3-13-75 Sample Date 8118118 8118119 81/21/ 81/8/18 81/81/9 4502471936 81/8/18 38000956 Poison B evondracek@ashland.com, cassie.reuter@ehs support.com Skin Irritant Deliverable Requested: I, III, III, IV, Other (specify) Phone (912) 354-7858 Fax (912) 352-0165 MW-0814-30180613 20180613 AW- 817 2018 0613 MW-08726180613 EW-85,30180613 20180613 Hercules Glens Falls Quarterly Event AW- B30\_30180613 Flammable AW- 84-30180613 Possible Hazard Identification DUP 2018 0C13 5200 Blazer Parkway DS-4 Empty Kit Relinquished by: 20180613 Client Information 5102 LaRoche Avenue Savannah, GA 31404 Ashland Glens Falls MW-31 Non-Hazard Mr. Jim Vondracek 314-790-6146 elinquished by: State, Zip: OH, 43017 Ashland Inc piect Name Dublin

coler Temperature(s) °C and Other Remarks:

Custody Seal No.

Custody Seals Intact:

A Yes A No

Phone (912) 354-7858 Fax (912) 352-0165

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

# Chain of Custody Record

**TestAmerica** 

M - Hexane
N - None
N - None
O - Ashao2
P - Na204S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate Special Instructions/Note: U - Acetone V - MCAA W - ph 4-5 Z - other (specify) Months akd seimpled noted on bittle layer Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Preservation Codes: COC No: 680-76228-31646.1 1710 G - Amchlor H - Ascorbic Acid Page Z of Z A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH 1- Ice J - DI Water K - EDTA Archive For 4-13-18 Total Number of containers (p) (e Disposal By Lab Analysis Requested ooler Temperature(s) °C and Other Remarks Special Instructions/QC Requirements 8260C - (MOD) TCL list OLM04.2 (Dichlorobenzenes [1,2-, eddle.barnett@testamericainc.com Return To Client 0 196A - Chromium, hexavalent (field filtered) Lab PM: Barnett, Eddie T 9012B - Cyanide, Total Perform MS/MSD (Yes or No) Time: E-Mail. wieu Matrix (W=water, S=solid, O=waste/oil, Preservation Code: Water Type (C=comp, 95 98 G=grab) Radiological Sample 0 800 Standard sampler Garrett Cowe Sample 1535 Time 1450 Top 0% Date: Unknown TAT Requested (days): Daje/Timp: 3-18 Due Date Requested: 3-13-14 Sample Date 81/21/9 PO# 4502471936 Project #: 68000956 Poison B evondracek@ashland.com, cassie.reuter@ehs support.com Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify) Custody Seal No. 20180613 MW-0825 2018 0613 Hercules Glens Falls Quarterly Event Flammable Possible Hazard Identification 5200 Blazer Parkway DS-4 Empty Kit Relinquished by: Custody Seals Intact: Client Information Sample Identification Ashland Glens Falls Mr. Jim Vondracek Non-Hazard Phone: 514-790-6146 inquished by: Ashland Inc OH, 43017 State, Zip. Dublin mail

Client: Ashland LLC Job Number: 480-137390-2

Login Number: 137390 List Source: TestAmerica Buffalo

List Number: 2

Creator: Barnett, Eddie T

Creator: Barnett, Eddle 1		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	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	

TestAmerica Buffalo

Client: Ashland LLC Job Number: 480-137390-2

Login Number: 137390
List Source: TestAmerica Savannah
List Number: 3
List Creation: 06/15/18 10:15 AM

Creator: Elwell, Devin M

Creator: Elwell, Devin W		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Buffalo

Brian Jankauskas, P.E. 2018 GSMR for the Pretreatment Plant Area November 30, 2018



# Attachment 3 – Tier II Validation Report

# **HERCULES**

Tier II Validation Report Groundwater and Surface Water Monitoring June 2018 Pretreatment Plant Site Former Ciba Geigy Facility Queensbury, New York

# Prepared by:



November 2018



# TABLE OF CONTENTS

1.0	Summary	1
2.0	Data Set 1	2
3.0	Data Set 2	6
4.0	Data Set 3	15



# 1.0 SUMMARY

This report presents the results of a Tier II data usability assessment for aqueous samples collected in June 2018 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).

Validation reports were prepared for the laboratory reports detailed in Sections 2 and 3 of this report.

# Overall Data Evaluation and Usability

Data included in these data sets are considered usable. Details regarding the usability assessment are provided in Sections 2 through 4.



#### 2.0 VALIDATION REPORT FOR PTP DATA SET 1

Former Ciba Geigy Facility Queensbury, New York

Sample Delivery Group (SDG): 480-137390-2

Analyses: General chemistry

Analysis performed by: TestAmerica, Savannah, Georgia

EHS Validation Report Number: 185

Review Level: Tier II

Report Date: November 23, 2018

# **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 9021B 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	Field Sample ID	Sample	Callantian	Analysi	is		
			IVIALITA		voc	Metals	Gen chem	
480-137390-2	480-137390-3	MW-OB23_20180613	Water	6/13/2018			Х	

#### 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 included in the analysis, but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.

Report DV185



- UJ The analyte was included in the analysis, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

### SAMPLE CUSTODY AND RECEIPT

The sample was received in good condition and properly preserved. The chain of custody was properly completed, except that the date accompanying the relinquishing signature does not match the date accompanying the receiving signature. It is assumed that this was a clerical issue and that custody was maintained.

# **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.

Report DV185 2 of 4



### **GENERAL CHEMISTRY ANALYSIS**

# **Preservation and Holding Times**

Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding Time
Cyanide by 9012B	Water	4°C ± 2°C,	14 days
		NaOH to pH > 12	

Acceptance criteria were met.

#### **Blanks**

Acceptance criteria were met.

# **Laboratory Control Sample (LCS)**

Acceptance criteria were met.

# **Laboratory duplicate analysis**

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

# Matrix Spike (MS) Analysis

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

# **Field Duplicates**

A field duplicate sample was submitted in SDG 480-137390-1 that is associated with sample MW-OB23\_20180613. The field duplicate analysis exhibited a relative percent difference (RPD) value that is outside acceptance limits and it is presented in the table below.

Samples	Analyte	Parent Sample Result	Duplicate Sample Result	RPD
MW-OB23_20180613/ DUP_20180613	Cyanide	2.0 mg/L	0.52 mg/L	118%

As a consequence of this QC excursion, cyanide results for the parent, the duplicate, and associated samples would be considered estimated but usable. Results in this data set are not subject to qualification as estimated. These results are considered usable and will be reported "as-is."

Report DV185 3 of 4



# **Additional Notes**

NA: No additional notes to report.

Validation performed by:

**EHS Support** 

Report DV185 4 of 4



#### 3.0 VALIDATION REPORT FOR PTP DATA SET 2

Former Ciba Geigy Facility Queensbury, New York

Sample Delivery Group (SDG): 480-137307-1 Analyses: VOC, Metals, General chemistry

Analyses performed by: TestAmerica, Buffalo, New York and Savannah, Georgia

EHS Validation Report Number: 165

Review Level: Tier II Report Date: July 5, 2018

# **SAMPLE SUMMARY**

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Methods 8260C for volatile organic compounds (VOC), 6020A for metals, and 9012B for cyanide, and by Standard Method SM 2340C for hardness. Samples included in this Sample Delivery Group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample	Sample	Analysis		
			Matrix	Collection Date	voc	Metals	Gen chem
480-137307	480-137307-1	MW-OB17_20180611	Water	6/11/2018			Х
480-137307	480-137307-2	MW-OB21_20180611	Water	6/11/2018			Х
480-137307	480-137307-3	DUP01_20180611	Water	6/11/2018			Х
480-137307	480-137307-4	DUP02_20180611	Water	6/11/2018			Х
480-137307	480-137307-5	SG-11_20180611	Water	6/11/2018			Х
480-137307	480-137307-6	SG-7_20180611	Water	6/11/2018			Х
480-137307	480-137307-7	EB_20180611	Water	6/11/2018			Х
480-137307	480-137307-8	MW-OB18_20180612	Water	6/12/2018			Х
480-137307	480-137307-9	MW-OB19_20180612	Water	6/12/2018			Х
480-137307	480-137307-10	MW-36D_20180612	Water	6/12/2018	Х		
480-137307	480-137307-11	DUP01_20180612	Water	6/12/2018	Х		
480-137307	480-137307-12	AW-C2_20180612	Water	6/12/2018		Х	Х
480-137307	480-137307-13	MW-26_20180612	Water	6/12/2018		Х	Х
480-137307	480-137307-14	SW-01_20180612	Water	6/12/2018		Х	Х

Report DV165 1 of 9



SDG	Lab Sample ID	Field Sample ID	Sample	Sample	Analysi	s	
			Matrix	Collection Date	voc	Metals	Gen chem
480-137307	480-137307-15	SW-02_20180612	Water	6/12/2018		Х	Х
480-137307	480-137307-16	SW-03_20180612	Water	6/12/2018		Х	Х
480-137307	480-137307-17	DUP02_20180612	Water	6/12/2018		Х	Х
480-137307	480-137307-18	SW-04_20180612	Water	6/12/2018		Х	Х
480-137307	480-137307-19	TRIP BLANK	Water	6/12/2018	Х		
480-137307	480-137307-20	EB_20180612	Water	6/12/2018	Х	Х	Х
480-137307	480-137307-21	AW-B18_20180612	Water	6/12/2018	Х	Х	Х

### **INTRODUCTION**

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 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 included in the analysis, but was not detected above the reported quantitation limit, or the result is considered non-detect as a consequence of associated blank contamination.
- UJ The analyte was included in the analysis, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

Report DV165 2 of 9



# **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 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.

Report DV165 3 of 9



# **VOLATILE ORGANIC COMPOUND (VOC) ANALYSIS**

# **Preservation and Holding Times**

Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding Time
Method 8260	Water	≤6 °C; HCl to pH < 2	14 days

Acceptance criteria were met.

#### **Blanks**

Acceptance criteria were met; no detections were reported from the method blank, or from the trip blank or equipment blank associated with the field samples in this SDG.

## Surrogates

Acceptance criteria were met.

# Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD)

Acceptance criteria were met.

# Matrix Spike/ Matrix Spike Duplicate (MS/MSD) Analysis

Acceptance criteria were met. MS/ MSD analyses were performed on samples 480-137307-10 and 480-137307-21.

# **Compound Identification**

Acceptable; no issues to report.

# Field duplicates

Acceptance criteria were met. One field duplicate & parent sample pair in this sample delivery group was designated for VOC analysis. Criteria for comparison of field duplicate results with parent sample results are presented in the table below.

Report DV165 4 of 9



Quality control nonconformance	Sample Result	Qualification
Sample and its field duplicate ≥ 5x the RL and -RPD > 30% (aqueous) - orRPD > 50% (soil/ sediment)	Detect	J
Sample and/or its field duplicate < 5x the RL and	Non-detect	UJ
-absolute difference > 2x the RL (aqueous) - or- -absolute difference > 3x the RL (soil/ sediment)	Detect	J

# **Additional Notes**

NA: No additional notes to report.

Report DV165 5 of 9



### **METALS ANALYSIS**

# **Preservation and Holding Times**

Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding Time
Metals (except Hg and Cr6+) by	Water	HNO₃ to pH < 2	180 days
6010 / 6020	Soil	None	180 days

Acceptance criteria were met.

#### **Blanks**

Acceptance criteria were met; no detections were reported from the method blank or from the equipment blank associated with the field samples in this SDG.

# **Laboratory Control Sample (LCS) Analysis**

Acceptance criteria were met.

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

Matrix spike analyses associated with recoveries and/or RPD values outside control limits are presented in the table below. Please note that matrix spike analyses cannot be evaluated if the unspiked sample concentration of the relevant analyte is  $\geq$  4x the spike amount. Other MS/MSD analyses associated with this data set exhibited acceptable results.

Sample ID	Analyte	Recovery		MS/MSD	
		MS	MSD	RPD	
480-137307-21	Chromium	Acceptable	Acceptable	27%	

As a consequence of this excursion, qualifiers were applied to results for chromium in all field samples in this SDG – except for any samples that were associated with acceptable matrix spike analyses. Qualifiers were applied as per the table below.

Report DV165 6 of 9



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

# **Field Duplicates**

Acceptance criteria were met. One field duplicate & parent sample pair in this sample delivery group was designated for metals analysis. Criteria for comparison of field duplicate results with parent sample results are presented in the table below.

Quality control nonconformance	Sample Result	Sample Result
		Qualification
Sample and its field duplicate ≥ 5x the RL and -RPD > 30% (aqueous) - orRPD > 50% (soil/ sediment)	Detect	J
Sample and/or its field duplicate < 5x the RL and -absolute difference > 2x the RL (aqueous) - or-	Non-detect	UJ
-absolute difference > 3x the RL (soil/ sediment)	Detect	J

# **Additional Notes**

NA: No additional notes to report.

Report DV165 7 of 9



#### **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 Wa		4°C ± 2°C,	14 days	
		NaOH to pH > 12		
Hardness by SM2340C	Water	HNO <sub>3</sub> to pH < 2	180 days	

Acceptance criteria were met.

# **Blanks**

Acceptance criteria were met; no detections were reported from the method blank or from the equipment blank associated with the field samples in this SDG.

# **Laboratory Control Sample (LCS)**

Acceptance criteria were met. The laboratory analyzed LCS samples and recoveries were acceptable. Please note that for cyanide, the laboratory also analyzed a low-level laboratory control sample. The recovery of cyanide in the low-level LCS was 87%, which is outside of laboratory limits. However, 87% is within the limits applied during validation, so this recovery is considered acceptable and did not lead to any result qualification.

# **Laboratory duplicate analysis**

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

## Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

Matrix spike analyses associated with recoveries and/or RPD values outside control limits are presented in the table below. Please note that matrix spike analyses cannot be evaluated if the unspiked sample concentration of the relevant analyte is  $\geq 4x$  the spike amount. Other MS/MSD analyses associated with this data set exhibited acceptable results.

Sample ID	Analyte	Recovery		MS/MSD
		MS	MSD	RPD
480-137307-2	Cyanide	13%	29%	Acceptable
480-137307-21	Cyanide	52%	Acceptable	Acceptable

As a consequence of this excursion, qualifiers were applied to results for cyanide in all field samples in this SDG – except for any samples that were associated with acceptable matrix spike analyses. Qualifiers were applied as per the table below.

Report DV165 8 of 9



# **Field Duplicates**

Acceptance criteria were met. Three field duplicate & parent sample pairs in this sample delivery group were designated for general chemistry analysis. Criteria for comparison of field duplicate results with parent sample results are presented in the table below.

Quality control nonconformance	Sample Result	Sample Result Qualification
Sample and its field duplicate ≥ 5x the RL and -RPD > 30% (aqueous) - orRPD > 50% (soil/ sediment)	Detect	J
Sample and/or its field duplicate < 5x the RL and -absolute difference > 2x the RL (aqueous) - or-	Non-detect	UJ
-absolute difference > 3x the RL (soil/ sediment)	Detect	J

# **Additional Notes**

NA: No additional notes to report.

Amy Coats Validation performed by:

EHS Support

Report DV165 9 of 9



#### 4.0 USABILITY REVIEW FOR PTP DATA SET 3

Former Ciba Geigy Facility Queensbury, New York

EHS Validation Report Number: 163 Review Level: Usability review

Report Date: July 5, 2018

#### SAMPLE SUMMARY

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed at TestAmerica Laboratories in Buffalo, New York and in Savannah, Georgia as well as at ALS Environmental in Holland, Michigan. Samples delivery groups (SDGs) included in this data usability review are listed in the table below.

SDG	Analytical parameters included in SDG					
	voc	Metals	Cyanide	Hexavalent chromium	Miscellaneous	
480-137390-1		Х	Х			
480-137390-2			Х			
480-137485-1				X		
480-137486-1		Х	Х			
480-137576-1				X		
480-137577-1		Х	Х			
18061180					X (Free cyanide)	

### **INTRODUCTION**

Data were reviewed to determine whether reported results are usable. Results considered usable will be used as-is; no validation qualifiers will be added, and no laboratory qualifiers will be modified or removed. Results that are deemed unusable will be rejected. Quality control (QC) elements included in this usability review are:

- Sample temperature
- Holding time
- Laboratory control sample (LCS, including LCS Duplicate) recoveries
- Matrix spike (MS, including MS Duplicate) recoveries

Report DV163 1 of 2



- Surrogate recoveries
- Internal standard recoveries
- Total vs. dissolved results
- Percent solids for solid samples

Please note that not all QC elements are expected for all analyses or for all batches. E.g. inorganic analyses in this data set do not include surrogates or internal standards.

The following QC variances, if found, will be presented and may lead to rejection of associated results:

- Sample temperature variances
- Holding time exceedances of more than 2x the technical holding time
- Spike (surrogate, LCS, MS) and internal standard recoveries less than 20% for organic analyses
- Spike (LCS, MS) recoveries less than 40% for inorganic analyses
- Dissolved result greater than total result by more than 50%
- Percent solids less than 10%

The only validation qualifier that may be applied to data include in this usability review is:

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

#### **DATA USABILITY SUMMARY**

In this SDG, no quality control excursions encountered led to rejection of data. Results are considered usable.

## **ADDITIONAL NOTES**

On chains of custody for two sample delivery groups in this data set, the time/ date associated with the relinquishing signature did not match the time/ date associated with the receiving signature. It is assumed that these were clerical issues.

Usability review performed by:

Amy Coats
EHS Support

Report DV163 2 of 2