

November 3, 2020

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:** Annual 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) (the "Parties"), EHS Support LLC ("EHS Support") is submitting this *Groundwater and Surface Water Monitoring Report* (GSMR) for the Pretreatment Plant Area property ("PTP Area" or "property") at the former Ciba-Geigy pigments manufacturing facility located at 89 Lower Warren Street in Queensbury Township, near Glens Falls, New York (the "Site").

Groundwater and surface water sampling have been conducted at the PTP Area since the mid-1990s (approximatey 25 years). Approximately 35 rounds of sampling have been performed at the property. Historically, sampling was performed as often as semi-annually; the frequency of sampling and reporting has been annual since 2010. The last remaining aboveground historical wastewater treatment structures (i.e., the former Pretreatment Plant Building and tank T-110) were demolished and removed from the PTP Area in March 2018. Post-demolition soil and groundwater sampling was performed in May 2019, with the results provided to the New York State Department of Environmental Conservation (NYSDEC) in the *Soil and Groundwater Sampling Report for the Pretreatment Plant Area* by EHS Support (October 11, 2019). The soil and groundwater samples collected at the PTP Area in May 2019 showed no evidence of a release of constituents of potential concern from former tank T-110 or from the sumps in the former PTP building.

Groundwater and surface water monitoring was conducted at focused locations in June 2020 pursuant to the following communications:

• Response to Comments on October 2019 Reports for the Pretreatment Plant Area, submitted to NYSDEC by EHS Support on December 19, 2019 – In two reports dated October 11, 2019 (i.e., the Soil and Groundwater Sampling Report for the Pretreatment Plant Area and the 2019 Annual Groundwater and Surface Water Monitoring Report for the Pretreatment Plant Area) the Parties proposed no further groundwater sampling at the PTP Area property. However, the NYSDEC responded with a comment letter requiring continued groundwater sampling. In a comment response letter, the Parties proposed to sample monitoring wells MW-OB19 and MW-OB23 and temporary well PTP-SB01 for cyanide in 2020. The NYSDEC approved this focused groundwater sampling approach for 2020.



• E-mail communication from the NYSDEC to EHS Support on January 15, 2020 – In the October 11, 2019 reports for the PTP Area property and the response to comments submitted on December 19, 2019, the Parties proposed no further surface water sampling based on historical sampling results, which show free cyanide concentrations in surface water below or near detection limits since 2015 when surface water samples first began being analyzed for free cyanide as part of the monitoring program. In an e-mail dated January 15, 2020, the NYSDEC indicated it would require surface water sampling at the PTP Area for free cyanide in 2020.

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 groundwater and surface water monitoring event is presented below.

# Water Level Gauging

On June 15, 2020, water levels were measured at the three monitoring wells identified in **Table 1** (PTP-SB01, MW-OB19, and MW-OB23). Depth-to-water measurements and groundwater elevation data are provided in **Table 2**.

The groundwater elevation data is consistent with historical data. Previous monitoring events included collection of data from a property-wide well network and demonstrated that groundwater generally flows to the east across the PTP Area property, with localized southerly flow in the southwest corner of the property. Shallow groundwater (overburden) 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 property.

Staff gauges are no longer in-place near the PTP property. Surface water depths were recorded in the approximate locations of former staff gauges SG-7 and SG-11 (**Figure 1**). The surface water depth was recorded as 0.13 feet at both locations on June 15, 2020.

# Groundwater and Surface Water Sampling and Analysis

Groundwater and surface water sampling were conducted on June 15 and June 16, 2020. Well MW-OB23 and PTP-SB01 were purged and sampled using low-flow sampling methods (i.e., a peristaltic pump) on June 15, following procedures detailed in the *Groundwater and Surface Water Monitoring Plan* (GSMP).<sup>2</sup> Groundwater samples were collected for laboratory analysis using a peristaltic pump and pumped directly into sampling containers provided by the laboratory. Well MW-OB19 purged dry on

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2016.

<sup>&</sup>lt;sup>1</sup> The most conservative surface water criterion for free cyanide in surface water is 5.2 micrograms per liter ( $\mu$ g/L) (A[C], chronic), and is based on the protection of fish propagation (6 New York Codes, Rules, and Regulations [NYCRR] 703.5, Table 1, Water Quality Standards Surface Waters and Groundwaters). All free cyanide data for annual surface water samples collected at surface water gauging stations SG-7 and SG-11 since 2015 has been non-detect for free cyanide (reported analytical detection less than 2  $\mu$ g/L), except one sample in 2019 where free cyanide was detected at 2.1  $\mu$ g/L, which had a duplicate sample analysis that showed less than 2  $\mu$ g/L.

<sup>2</sup> The current GSMP for the Site was submitted in an appendix to the *Remedy Optimization Plan* dated November



June 15 and was allowed to recharge overnight. A grab sample was collected from this well the next morning.

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. Copies of the field logs are included in **Enclosure 1**. Final field parameter readings (prior to sampling) are summarized in **Table 3**.

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 (**Enclosure 1**). Field parameter readings (prior to sampling) are summarized in **Table 3**.

Laboratory analysis was conducted by Eurofins TestAmerica and ALS Holland laboratories for total cyanide and free cyanide, respectively, 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 samples collected in plastic sample bottles containing sodium hydroxide preservative.
- Free cyanide by EPA 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-milliliter (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. A list of the laboratory analytical methods and sample containers is included in **Table 4**. The analytical results for the surface water samples are summarized in **Table 5**, and the analytical results for the groundwater samples are summarized in **Table 6**. The laboratory analytical reports (in Level 2 deliverable formats) are included in **Enclosure 2**.

# Quality Control Sampling and Analysis

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

- One duplicate groundwater sample (from PTP-SB01)
- One duplicate surface water sample (from SG-11)
- Two matrix spike/matrix spike duplicate (MS/MSD) samples, one for groundwater (from PTP-SB01) and one for surface water (from SG-11)
- Two equipment blanks (one for groundwater and one for surface water)

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 5** and **Table 6**. Results for field duplicate samples showed acceptable levels of precision and accuracy, and the blank samples had



no detections of cyanide or free cyanide. Results for all QC samples, including MS/MSD and other laboratory method QC samples, are provided in the laboratory reports in **Enclosure 2**.

## Data Quality Review

Data review and validation were performed by EHS Support in accordance with DER-10 guidelines.<sup>3</sup> The laboratory data was evaluated according to the quality assurance (QA) and QC requirements of the NYSDEC Analytical Services Protocols. Based on the results of the QA/QC review, all analytical data were deemed usable and technically defensible. Copies of the Tier II Validation Reports are included in **Enclosure 3**.

# Sample Results

The surface water and groundwater analytical results for samples collected in June 2020 are included in **Table 5** and **Table 6**, respectively.

Consistent with recent annual events, the free cyanide concentrations in the surface water samples were below the laboratory analytical detection limit of 2 micrograms per liter ( $\mu$ g/L). Free cyanide has been near or below the laboratory analytical detection limit of 2  $\mu$ g/L in all annual surface water samples collected since 2015 when free cyanide analysis of these samples began (**Table 5**).

The groundwater sample results were similar to recent annual sampling events, with the highest concentration of total cyanide measured at the central area at well MW-OB23 (1,000  $\mu$ g/L) and lower concentrations at wells MW-OB19 and PTP-SB01 (300  $\mu$ g/L and 310  $\mu$ g/L, respectively) (**Table 6**).

Previous groundwater sampling events demonstrated that cyanide concentrations detected in groundwater at the PTP Area property boundary and downgradient of the property have been below the GA standard of 200  $\mu$ g/L for at least a decade (**Table 7**). These wells include:

- MW-OB18 since 2002 (eastern property line)
- MW-OB21 since 2010 (off-Property, south of Glens Falls Feeder Canal)
- MW-OB22 since 2006 (off-Property, south of Glens Falls Feeder Canal)

On the Property, concentrations of cyanide in groundwater declined following cessation of the historical operations and have been stable to declining for more than a decade (**Figures 2A & 2B**). Mann-Kendall calculations were performed for the central area well MW-OB23. The calculations confirm a declining trend in cyanide concentrations over the past 20 years (**Table 8**).

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).

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



## Conclusions

The results of the groundwater samples collected during the annual sampling event conducted in June 2020 demonstrate that cyanide concentrations in groundwater at the PTP Area continue to be on a declining trend; this trend is supported by the Mann-Kendall statistical analysis for MW-OB23 (**Table 8**). Furthermore, free cyanide concentrations in surface water are below surface water standards; 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 PTP Area does not present a risk to human health or the environment.

A revised plan for future groundwater and surface water sampling at the former Ciba-Geigy Facility Site, including the Main Plant Site and the PTP Area, is currently in preparation as part of the Site Management Plan and will be submitted to the NYSDEC for review and approval prior to the performance of additional sampling.

# Certification

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. Johnson Reuter

**EHS Support LLC** 

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Wisconsin Professional Engineer No. E-39526

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cc: Eamonn O'Neill, New York State Department of Health
James Vondracek, Ashland LLC
Stephen Havlik, BASF Corporation
Laura McMahon, BASF Corporation
Cody Hume, Antea Group
Bob O'Neill, Brown and Caldwell
Jeff Caputi, Brown and Caldwell
Jim Breza, EHS Support LLC



# Tables

Table 1
Sampling Event Analysis Schedule
Pretreatment Plant Area - Groundwater and Surface Water Sampling - June 2020
Former Ciba-Geigy Facility, Glens Falls, NY

Sampling Location	Total Cyanide	Free Cyanide
Groundwater		
PTP-SB01	1	
MW-OB19	1	
MW-OB23	1	
Surface Water		
SG-7		1
SG-11		1



# Table 2 Gauging and Purge Data Summary Pretreatment Plant Area Groundwater and Surface Water Sampling - June 2020 Former Ciba-Geigy Facility, Glens Falls, NY

Well Name	Well Diam. (in)	Screen Interval (ft bgs)	6/15/20 Total Well Depth (ft btoc)	6/15/20 DTW (ft btoc)	TOC Elev (ft amsl)	6/15/20 GW Elevation (ft amsl)	6/15/20 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
OVERBURDE	MOM	TORING W	ELLS											
PTP-SB01	1	5 - 15	16.93	10.13	ns	ns	6.80	16.00	100	10.13	15.71	5.58	4.5	Р
MW-OB19*	2	5 - 10	9.64	8.48	287.82	279.34	1.16	9.06	100	8.5	dry	1.16	1.5	Р
MW-OB23	2	3 - 6.5	8.45	6.33	287.05	280.72	2.12	7.39	100	6.3	7.75	1.45	3.75	Р
<b>SURFACE WA</b>	TER LO	CATIONS	-				-					-	-	
SG-7		n/a		0.13	n/a	n/a		grab						
SG-11		n/a		0.13	n/a	n/a		grab						

#### Notes:

\* Well purged dry; grab sample collected next day after sufficient water recharge

Diam. - diameter min - minute

DTW - depth to water mL - milliliters

Elev - elevation n/a - not applicable

ft amsl - feet above mean sea level ns - not surveyed

ft bgs - feet below ground surface P - peristaltic pump

ft btoc - feet below top of casing

gal - gallons vol - volume

gal - gallons vol - volume
GW - groundwater WL - water level

in - inches



Table 3
Field Parameter Results

# Pretreatment Plant Area Groundwater and Surface Water Sampling - June 2020 Former Ciba-Geigy Facility, Glens Falls, NY

Location	Date	Temp	pН	Conductivity	DO	Turbidity	ORP
		(degC)	(s.u.)	(mS/cm)	(mg/l)	(NTU)	(mV)
PTP-SB01	05/21/19	11.48	6.92	0.398	5.51	4.9	288
PTP-SB01	06/15/20	11.8	7.04	0.613	4.61	6.7	368.2
MW-OB19*	06/12/18	15.48	9.37	0.349	5.71	0.3	269
MW-OB19*	06/18/19	20.45	7.31	0.294	2.82	4.1	225
MW-OB19*	06/15/20	16.83	6.69	0.457	4.75	2.3	73.7
MW-OB23	06/13/18	15.15	6.23	0.674	0.68	0.6	23
MW-OB23	06/17/19	17.5	6.67	0.597	2.22	0.0	-78
MW-OB23	06/15/20	14.4	6.84	0.647	3.40	3.3	-7.7
SG-7	06/11/18	22.77	8.82	0.136	7.62	0.3	95
SG-7	06/24/19	22.22	7.28	1.390	6.01	1.8	150
SG-7	06/15/20	22.82	7.67	2.13	8.63	202.9	213.7
SG-11	06/11/18	22.9	9.05	0.100	8.57	0.2	100
SG-11	06/24/19	26.07	6.36	0.327	5.93	0.5	177
SG-11	06/15/20	26.9	7.87	1.999	7.14	302.1	235.8

#### Notes:

\* Well purged dry; grab sample collected next day after sufficient water recharge

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

mS/cm -milliseimens per centimeter

NTU - nephelometric turbidity units

ORP (mV) - oxidation reduction potential (millivolts)

s.u. - standard units

Temp (degC) - Temperature (degrees Celsius)



#### Table 4

#### **Laboratory Analytical Methods**

### Pretreatment Plant Area Groundwater and Surface Water Sampling - June 2020 Former Ciba-Geigy Facility, Glens Falls, NY

Analyte	Method Number	Media	Anticipated Reporting Limit (µg/L)	Sample Container Type	Container Volume (each in ml)	No. Containers per sample	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 Holi	and			
Free Cyanide	OIA-1677	Water	2	Glass VOA vial	40	1	lead-acetate strip field test for sulfide: 40 mL VOA with NaOH or if sulfide detected 40 mL VOA no preservative	14 Days or 24 hrs

Notes:

 $\mu g/L$  - micrograms per liter

deg C = degrees Celsius

ml = milliliter

NaOH = sodium hydroxide

VOA = volatile organic analysis



# Table 5 Surface Water Sample Results - 2015 to 2020 Pretreatment Plant Area Groundwater and Surface Water Sampling - June 2020 Former Ciba-Geigy Facility, Glens Falls, NY

NYSDEC Surface	Chemical Name Unit Water Quality Standard A(C)	Cyanide (Free) μg/L 5.2
Location ID	Sample Date	
SG-7	7/29/2015	2 UJ
SG-7	6/20/2017	2 U
SG-7	6/11/2018	2 U
SG-7	6/24/2019	2 U
SG-7	6/15/2020	2 U
SG-11	7/29/2015	2 UJ
SG-11 DUP	7/29/2015	2 UJ
SG-11	7/25/2016	2 UJ
SG-11 DUP	7/25/2016	2 U
SG-11	6/20/2017	2 U
SG-11 DUP	6/20/2017	2 U
SG-11 DUP	6/11/2018	2 U
SG-11	6/11/2018	2 U
SG-11 DUP	6/24/2019	2 U
SG-11	6/24/2019	2.1
SG-11 DUP	6/15/2020	2 U
SG-11	6/15/2020	2 U
EB_20160725	7/25/2016	2 U
EB_20170619	6/19/2017	2 U
EB_20180611	6/11/2018	2 U
EB_20190624	6/24/2019	2 U
EB01_20200615	6/15/2020	2 U

#### Notes:

1) 6 NYCCR 703.5, Table 1 Water Quality Standards Surface Waters and Groundwaters. A(C) = Fish Propagation (chronic).

- 2) In June 2016, the location of SG-7 was dry; therefore, a surface water sample was not collected for analys
- 3) In 2015, no equipment blank was collected at the PTP Area for free cyanide analysis.

μg/L - micrograms per liter

NYDSEC - New York State Department of Environmental Conservation

- U indicates not detected above laboratory reporting limits
- J indicates result is estimated

DUP - duplicate



# Table 6 Groundwater Sample Results - 2018 to 2020 Pretreatment Plant Area Groundwater and Surface Water Sampling - June 2020 Former Ciba-Geigy Facility, Glens Falls, NY

NYSDEC Class GA (	Chemical Name Unit Groundwater Quality Standards	Cyanide μg/L 200
Location ID	Sample Date	
MW-OB17	6/11/2018	87 J
MW-OB17	6/17/2019	10 UJ
MW-OB18	6/12/2018	110 J
MW-OB18	6/17/2019	100 J
MW-OB19	6/12/2018	180 J
MW-OB19	6/18/2019	57 UJ
MW-OB19	6/16/2020	300
MW-OB20	6/17/2019	28 J
MW-OB21 DUP	6/11/2018	110 J
MW-OB21	6/11/2018	140 J
MW-OB21 DUP	6/17/2019	98 J
MW-OB21	6/17/2019	62 J
MW-OB23	6/13/2018	2000
MW-OB23	6/17/2019	670 J
MW-OB23	6/15/2020	1000
PTP-SB01 DUP	5/21/2019	330
PTP-SB01	5/21/2019	420
PTP-SB01 DUP	6/15/2020	300
PTP-SB01	6/15/2020	310
EB_20180611	6/11/2018	10 UJ
EB_20190617	6/17/2019	10 U
EB_20190624	6/24/2019	3.4 J
EB02_20200615	6/15/2020	10 U

#### Notes:

1) 6 NYCCR 703.5, Table 1 Water Quality Standards Surface Waters and Groundwaters GA = protective of fresh groundwaters for drinking water source.

**Bold** value indicates concentration above water quality standard

 $\mu g/L$  - micrograms per liter

NYDSEC - New York State Department of Environmental Conservation

U - indicates not detected above laboratory reporting limits

J - indicates result is estimated

DUP - duplicate



<sup>\*</sup> Well purged dry; samples collected next day after sufficient water recharge

#### Table 7

# Historical Groundwater Sample Results - 1993 to 2017 Pretreatment Plant Area Groundwater and Surface Water Sampling - June 2020 Former Ciba-Geigy Facility, Glens Falls, NY

SAMPLE		GROU	NDWATER - 1	TOTAL CYANI	DE CONCENT	RATIONS (mg	g/L)	
DATE	MW-OB17	MW-OB18	MW-OB19	MW-OB20	MW-OB21	MW-OB22	MW-OB23	P-1
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
Mar-98	0.12	0.35	1	0.049	0.51	0.046	1.6	0.26
Sep-98	0.52	0.39	-	0.058	0.72	0.14	1.9	0.54
Mar-99	0.12	0.28	-	0.027	0.57	0.061	2	0.24
Sep-99	0.419	0.3	-	0.145	0.87	0.12	5	0.36
Mar-00	0.1	0.29	-	0.019	0.69	0.07	7.2	0.3
Sep-00	0.28	0.19	1	0.098	0.47	0.12	2.5	0.2
Apr-01	0.19	0.24	-	0.021	0.42	0.19	1	0.28
Aug-02	0.14	0.18	0.9	0.1	0.54	0.3	4.5	0.22
May-04	0.11	0.14	0.63	0.046	0.36	0.077	2.2	0.14
Jan-05	0.15	0.14	0.47	0.094	0.48	0.046	1.5	0.11
Jul-05	0.34	0.15	0.69	0.073	0.41	0.34	2.9	0.14
Jan-06	0.16	0.18	0.096	0.062	0.33		1.1	0.096
Jul-06	0.084	0.086	0.38	0.33	0.36	0.084	0.04	0.12
Dec-06	0.16	0.16	0.089	-	0.36	0.036	1.6	0.077
Sep-07	0.34	0.2	ı	0.056	0.29	0.04	2.1	0.18
Sep-08	0.63	ı	0.28	0.04	0.28	0.01	4	0.14
Dec-08	0.14	ı	0.17	0.05	0.3	ND		0.06
Dec-09	0.09	ı	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	ı	0.041	1	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	-	0.14	0.017	1.1	0.078
Dec-14	0.2	0.035	0.096	0.087	0.100	0.016	0.69	0.051
Jul-15	0.182	0.102	0.182	DRY	0.119	-	1.8	-
Jul-16	0.370	0.057	0.140	-	0.097	-	2.5	-
Jun-17	0.070 J	0.093	0.250 J	0.051 J	0.110 J	-	1.4 J	-

#### Notes

- 1) Available data obtained from historical monitoring reports; majority of samples analyzed were not field-filtered.
- 2) Prior to July 2015, samples were collected using 3-volume purge and sample methods.
- 3) Low flow sampling methods were employed beginning July 2015.

mg/L - milligrams per liter

ND - indicates not detected above laboratory reporting limits

J - indicates result is estimated

"-" - not sampled



#### **GSI MANN-KENDALL TOOLKIT** for Constituent Trend Analysis Evaluation Date: 10-Aug-20 Job ID: C16262\_2020-400 Facility Name: Glens Falls - Pretreatment Plant Area Constituent: Total Cyanide Concentration Units: mg/L Conducted By: Leah Krause Sampling Point ID: MW-OB23 Sampling TOTAL CYANIDE CONCENTRATION (mg/L) Date 21-Mar-97 2 26-Sep-97 3 25-Mar-98 1.6 4 5 18-Mar-99 6 24-Sep-99 5 16-Mar-00 21-Sep-00 8 2.5 9 3-Apr-01 10 2-Aug-02 11 17-May-04 2.2 12 14-Jan-05 1.5 13 14 23-Jan-06 1.1 15 14-Dec-06 1.6 16 20-Sep-07 17-Sep-08 17 4 18 4-Dec-09 0.98 19 2-Jun-10 20 7-Dec-10 2.3 21 21-Dec-11 0.91 22 18-Dec-12 1.9 23 16-Dec-13 24 17-Dec-14 0.69 25 23-Jul-15 1.8 26 1-Jul-16 27 20-Jun-17 1.4 28 13-Jun-18 29 17-Jun-19 0.67 30 15-Jun-20 31 32 33 34 Coefficient of Variation: 0.68 Mann-Kendall Statistic (S): -110 Confidence Factor: 98.5% **Concentration Trend:** Decreasing 10 MW-OB23 Concentration (mg/L) MW-OB23 0.1 08/99 05/02 02/05 11/07 08/10 05/13 01/16 10/18 12/96 **Sampling Date**

# Table 8 - Mann-Kendall Calculations – Well MW-OB23 Pretreatment Plant Area Groundwater and Surface Water Sampling - June 2020 Former Ciba-Geigy Facility, Glens Falls, NY

#### Notes:

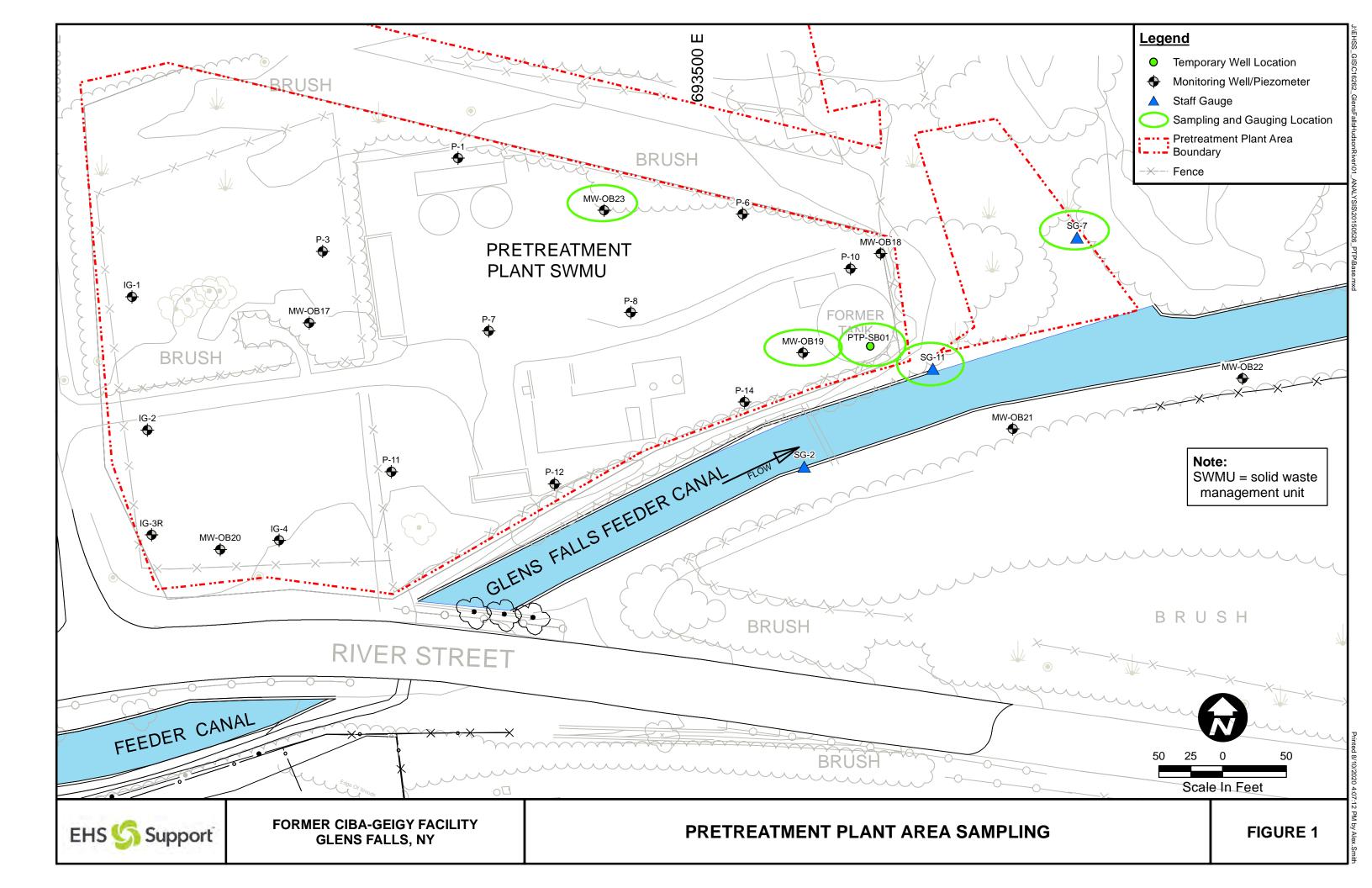
- 1. At least four independent sampling events per well are required for calculating the trend. Methodology is valid for 4 to 40 samples.
- 2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% =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

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.

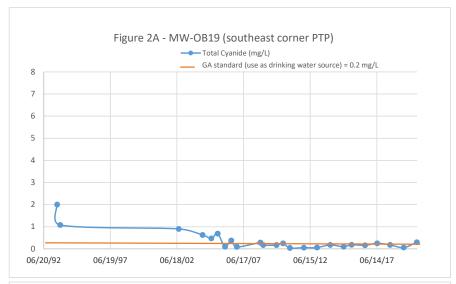
GSI Environmental Inc., www.gsi-net.com

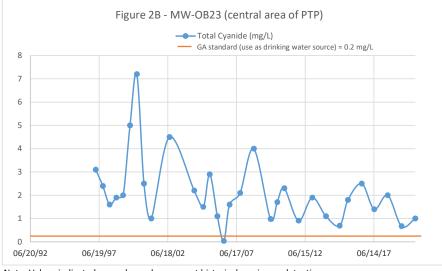


Figures



Figures 2A - 2B
Cyanide Concentrations in Groundwater versus Time
Pretreatment Plant Area Groundwater and Surface Water Sampling - June 2020
Former Ciba-Geigy Facility, Glens Falls, NY





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





Enclosure 1 Purge and Sample Logs



Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600 Fort Collins, CO +1 970 490 1511

Holland, MI

+1 616 399 6070

# **Chain of Custody Form**

Page

Houston, TX +1 281 530 5656

+1 610 948 4903 Salt Lake City, UT

Spring City, PA

South Charleston, WV +1 304 356 3168

Middletown, PA

+1 717 944 5541 +1 801 266 7700

York, PA +1 717 505 5280

COC ID: 224371 **ALS Project Manager:** ALS Work Order #: **Customer Information Project Information** Parameter/Method Request for Analysis Purchase Order Project Name Work Order **Project Number** В EHS Support LLC Company Name EHS Support LLC Bill To Company С Cassia Rauter Accounts Payable """ Send Report To Invoice Attn D 3 të Grandviaw Ave 316 Grandview Ave. Ε Address Address F G Argale, Wi 53504 City/State/Zip City/State/Zip Argyle, Wil 53504 Н (408) 351-0626 (608) 851-0626 Phone Phone Fax Fax J e-Mail Address e-Mail Address No. **Sample Description** Date Time Matrix Pres. # Bottles Α В D н Hold C 3 5 6 7 8 9 Sampler(s) Please Print & Sign Required Turnaround Time: (Check Box) **Shipment Method** Results Due Date: Chines "Trwk bays Std 10 WK Dave ITTS WK Cave TET 24 Hou Relinquished by: Time: Date: Received by: Notes: Relinquished by: Date: Time: Received by (Laboratory): QC Package: (Check One Box Below) Cooler ID Cooler Temp. TPRP ChackLis Date: Logged by (Laboratory): Checked by (Laboratory): Time: Lewel III Std QGATes Date TT TREPLEMENT Loos t/sweasvil P

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

4-NaOH

2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

6-NaHSO4

7-Other

8-4°C

9-5035

5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

3. The Chain of Custody is a legal document. All information must be completed accurately.

3-H<sub>2</sub>SO<sub>4</sub>

Preservative Key:

1-HCI

2-HNO

## Eurofins TestAmerica, Buffalo

10 Hazelwood Drive Amherst, NY 14228-2298 **Chain of Custody Record** 

eurofins

Encocoment Testing America

Phone: 716-691-2600 Fax: 716-691-7991					looch.	···
Client Information	Latelun Fosta	Lab PM: Barnett, Eddie T	T	Carrier Tracking No(s):	COC No: 680-115613-44213.2	
Client Contact: Mr. Jim Vondracek	Ratelyn Forta (386) 9821 6782	E-Mail: eddie.barnett@t	testamericainc.com		Page: Pa <del>ge 2 of 6</del> /2	
Company: Ashland LLC			Analysis Red	uested	Job #:	
Address:	Due Date Requested:				Preservation Codes:	
5200 Blazer Parkway DS-4 City:	TAT Requested (days):				A - HCL M - Hexane B - NaOH N - None	
Dublin .		1033 1007 2013			C - Zn Acetate O - AsNaO2	
State, Zip: OH, 43017	STO				D - Nitric Acid P - Na204\$ E - NaHS04 Q - Na2S03 F - MeOH R - Na2S203	
Phone: 614-790-6146(Tel)	PO#. PO814392				G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecah	ahvdrate
Email:	WO #:	2			1 - Ice U - Acetone	inyunate
jevondracek@ashland.com	Task 400	Jo se Con			J - DI Water V - MCAA K - EDTA W - pH 4-5	
Project Name: Hercules Glens Falls O&M 2020	Project #: 68000956	le (Yes or	<u>s</u>	Containers	L - EDA Z - other (specify	·y)
Site: Glus Falls	SSOW#:	Tota	ed Metals			
	Sample	Matrix (Wanafer Cyanide,	- Dissolved			
		Matrix Matrix (W=water, S=solid, S=soli	id	· · · · · · · · · · · · · · · · · · ·		
	Sample (C=comp, c	S=solid, D=waste/oil, D=waste/oil, D= G	6020A	ota	Special Instructions/No	nta:
Sample Identification	Preservation		D	<del></del>	Opecial instructions inco	
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MW-0823-20200615	4151201600 B	Water NN				
MW-0819-20200010	6/14/20 0930 G	Water NN				
MW-0814-20200616	414170 1325 G	Water YNX	(x)		2	
i e		Water YY	<del>                                     </del>			
AN-C11-202001116	U111/20 152Z B	<del></del>			I waturan	
AW-B4-20200616	910 20 1000 0	Water YNX			1	
MW-0BZU-20200017:	417120 0950 B	Water ⅓N∝	'\alpha		-	
Sump-B-20200617	4/17/20 1031 B	Water y N ≪	<del> </del>	. 2	<del></del>	* **,
AW-A14-20200617	417/20 1058 F	Water YN		7		
MW-0825-20200617	417/20 1058 G 417/20 1105 G	Water X N X		1	<i>*</i>	
EB02_20200415	u115120 1203 6	Water NN				
Possible Hazard Identification				ssessed if samples are retai	ned longer than 1 month)	
Non-Hazard Flammable Skin Irritant Po	ison B Unknown Radiological			<del>, ' ' '</del>	chive For Months	
Deliverable Requested: I, II, III, IV, Other (specify)			I instructions/QC Requiremen	Method of Shipment:		
Empty Kit Relinquished by:	Date:	Time:	No.		I Compony	
Relinquished by	417/2020 1652 18	witer mie	erved in hall	Date/Fime: 4-17-20		
Relinquished by:		mpany C Rece	eived by:	Date/Time:	Company	
Relinquished by: , :	Date/Time: Co	mpany Rece	eived by:	Date/Time:	Company	
Custody Seals Intact: Custody Seal No.:		Cool	oler Temperature(s) °C and Other Re	marks:		
Δ Yes Δ No			N		Ver: 01/16/201	019

# Eurofins TestAmerica, Buffalo

10 Hazelwood Drive Amherst, NY 14228-2298

# Chain of Custody Record

💸 eurofins

Environment Terling - America

Phone: 716-691-2600 Fax: 716-691-7991	Complete	Lab PM:	Carner Tracking No(s):	COC No:
Client Information	Phone (384) 984 6782	Barnett, Eddie T		680-115613-44213.1 Page:
Client Contact:	Phone.	E-Mail: eddie.barnett@testamericainc.com		Page 4-ef 6-2/2
Mr. Jim Vondracek	1 (386) 467 (2762		<u> </u>	Job#:
Company: Ashland LLC		Analysis Re	quested	Preservation Codes:
Address:	Due Date Requested:			
5200 Blazer Parkway DS-4	7770			A - HCL M - Hexane B - NaOH N - None
City:	TAT Requested (days):			C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
Dublin State, Zip:	- STD			E - NaHSO4 Q - Na2SO3
OH, 43017				F - MeOH R - Na2\$203 G - Amchlor S - H2\$04
Phone:	PO #: PO814392			H - Ascorbic Acid T - TSP Dodecahydrate
614-790-6146(Tel) Email:	WO#:	2 (c)		I - Ice U - Acetone J - DI Water V - MCAA
jevondracek@ashland.com	Task 400	Or No)		K - EDTA W - pH 4-5 L - EDA Z - other (specify)
Project Name:	Project #: 68000956	Σ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	containers	
Hercules Glens Falls O&M 2020 Site:	SSOW#:	Met of or	oj co	Other:
Gleus Falls		Titra Xitra Xitra Dissolved Dissolved	per o	
-V	Sample M	atrix WSW (2)	Numb	
	Type (w	"Malie", 1定私集体		
	Sample (C=comp, o=w	solid, asterioii, liei iii iii iii iii iii iii iii iii ii	Total	Special Instructions/Note:
Sample Identification	Sample Date Time G=grab) ST=Tis  Preservation 0			
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OMP01-20200015	015/20			<u> </u>
EB03-20200616	6/16/20 1120 6 V	/ater YNXX		\
	\ <del>-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\</del>	/ater Y Nox	3	12
EW-185_20200417				2
DUP03-20200617	417/20 - 6 V			
ERDI ZOZODIAZ	. U(17/20 1330 6 V	Vater YNXX		Z ·
2017 - 2020 12 - CONTRACTOR - C		vater VNXX		
5804-20200617 Sup-A-202017		<del>- 1/ </del>		
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		Vater /		
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		Valter		
		Vater 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Possible Hazard Identification		Sample Disposal ( A fee may b	e assessed if samples are retail	ned longer than 1 month)
	Poison B Unknown Radiological	Return To Client	Diopoda by man	chive For Months
Non-Hazard Flammable Skin Irritant  Deliverable Requested: i, li, lll, lV, Other (specify)		Special Instructions/QC Require	ments:	
	Date:	Time:	Method of Shipment:	
Empty Kit Relinquished by:		Received by:	Date/Time:	50 /62 EGA.
Relinquished by	Date(Time V 17) 2020 162. A	tea Grown This	~ le-17-2e	50 /652 FTA. Company
Relinquished by:	Date/Firme: Con	pany Referved by:	Date/Time:	Company
, , , , , , , , , , , , , , , , , , ,		pany Received by:	Date/Time:	Сотрапу
Relinquished by:	Date/Time: Con			
Custody Seals Intact: Custody Seal No.:		Cooler Temperature(s) °C and Othe	r Remarks:	•
A Ves A No				Ver: 01/16/2019

# **Chain of Custody Record**

eurofins

Environment Testing TestAmerica

Address:	Regulatory Pro	ogram:	DW N	PDES	RCRA	Other:								TAL-8210
Client Contact	Project Manager:					t:	<del></del>	Date:	होरि	-12D	2D	COC	No:	
Company Name: ASDAud ILL	Tel/Email: - WW	Wyorsk	Geshlan	Oction	Contac	: Eddil	Boundt	Carrier:					of_Z_	COCs
Address: 5200 Blazzy Porking DS-4	Analysis 7	urnaround	Time		1.1									yntoster
City/State/Zip: QNdin DH 430)7	CALENDAR DAYS	☐ WOR	ING DAYS		고당기				1 1				ab Use Only in Client:	/: 
Phone(614) 790 (146	TAT if different f				233								ampling:	
Fax:	, —	2 weeks	イワ	Z	티얼를									L
Project Name: Haranes Glew Falls Olm 21	20 🗎	1 week 📆 2 days	<b>&gt;'</b> ."		쀪쇳							Job / S	SDG No.:	
Site: Flews Falls, My PO# POSIH392	1 ,	1 day		뺼	WAY MSD (Y)									
- FUSIFIS 12	<del>                                     </del>	Sample			L HEXDINGLENCY	5								
	Sample Sample	Type (C≃Comp.	#	of Filtered	ই 🔯									,
Sample Identification	Date Time		Matrix Co	ont. ii.	1 2 E								Sample Spe	ecific Notes:
PTP-SBD1-20200015	UISIZO ISIO	6	6W	士士										
MW-0814-70700616	Uliul20 1325	, 6	$w_{i}$	X	NO					$\perp \perp$		ļ		
AW-C11-202001010	W111/20 1522	2 6	W 2		Y M		<u> </u>					M	SIMED	<u> </u>
AW-184-2020 Ollle	U16/20 1600	9	8	l Y	NO									
MW-0826-20200617	6/17/20 D9S	<b>0 6</b>	w	j y	NØ									
Sump-B_20200417	U17/20 1031	6	3	Ŋ	70								•	
AW-A14_20200017	4/17/20 1058	B _	3	j   7	NX									
MW-01325-20200197	417/201105	F	3	'	$N \propto$				-					
EB03_20200414'	4/16/20 1/20	<b>6</b>	3	1 1	NX.									
15W-185-20200U17	4/17/2012/5	S D	W.	) y	NO	<u>'</u>	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	-						
DUP03_20200417	417120 -	· 6	W	7	N N							<u>.</u>		<u> </u>
EB04_20200617	617/20133		B	1 4	$N \propto$								.3	
Preservation Used: 1= ice, 2= HCI; 3= H2SO4; 4=HNO3	5=NaOH; 6≈ Other		A Marie			复数证		4 多		, ·			4 4	
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Plea	oo Liet any EDA Mas	e Codes for	he samnle	in the	Sample	Disposal (	A fee may b	e assess	ed it san	npies a	ire retain	ea long	er than 1 mc	Jildi)
Comments Section if the lab is to dispose of the sample.	Se List ally Li A wasi	,e codes 101 ·	ine dampio	,,,,,,,	:			,			-	,		
Non-Hazard Flammable Skin Irritant	Poison B	<b>⊘</b> ⊠Unkn	own		Re	urn to Client	4	Disposal by	Lab		Archive for_		Months	
Special Instructions/QC Requirements & Comments:														
Custody Seals Intact: Yes No	Custody Seal No.:		In ( et		15		emp. (°C): O	os'd:		orr'd:		_	n ID No.: /Time:	
Relinquished by:	Company: ANTRON TA	sun i	Date/Time	165	Keceive 7		Mu		Compan		TA		17-2020	1652
Relinquished by:	Company:	soup (	Date/Time		Receive	d by:	- V		Compan		3 - 0		/Time:	
,					<u> </u>	11 1 1	Lana Barr		C			- B-1-	(Time:	,
Relinquished by:	Company:	•	Date/Time	∌:	Receive	d in Laborai	tory by:		Compan			Date	/Time:	
	1		1		L									

# Eurofins TestAmerica, Buffalo

10 Hazelwood Drive Amherst, NY 14228-2298

# Chain of Custody Record

eurofins Environment Festing America

Phone: 716-691-2600 Fax: 716-691-7991	Sampler		Lab P	M:				Camer	racking No	(s):	COC No:	
Client Information	Kateli	10 FO 874 984 6782	Barn E-Mai	ett, Edo	die T			_			680-115613-44	
Client Contact: Mr. Jim Vondracek	Phone: (3%)	984 6782	eddie		tt@test	tamericainc.c	om				Page: Page 4-of 6	2/2
Company:				-		Δn	alysis R	eaueste	ıd		Job#:	1
Ashland LLC Address:	Due Date Requested:				1 1		1	1			Preservation Co	odes:
5200 Blazer Parkway DS-4				7-5-7-1 7-5-7-1 7-5-7-1	11(	Chramium					A - HCL	M - Hexane
City: Dublin	TAT Requested (days):				$ \cdot $						B - NaOH C - Zn Acetate	N - None O - AsNaO2
State, Zip:	STD		:			8					D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3
OH, 43017 Phone.	PO#:					ا اخج ا					F - MeOH G - Amchlor	R - Na2S2O3 S - H2SO4
614-790-6146(Tel)	PO814392			<u> </u>		1 7 7 1					H - Ascorbic Acid	
Email: jevondracek@ashland.com	wo#: Task 400			Sample (Yes or No ISD (Yes or No)			<b>]</b>				J - DI Water	V - MCAA
Project Name:	Project #:			or Ses		3					K-EDTA L-EDA	W - pH 4-5 Z - other (specify)
Hercules Glens Falls O&M 2020	68000956 SSOW#:			ple ( Yes	EZ S		i l				Other: Amn	z-other (specify) Novium SNFW 11mm hydlo
Gews Falls	330VV#.			Sarr ISD		Hexchalant					2 ammer	11mm maps)
		Sample	Matrix	Filtered rm MS/N	aug		,				Pedial Number	•
		Туре	(W=water, S=solid,	Filte	j i	218.6					N.	
	l I	iample (C=comp Time G=grab)	O=waste/oit, BT=Tissue, A=Air)	Field Perfo	30T2E						화 Special	Instructions/Note:
Sample Identification	Sample Date		/ation Code:	$\mathcal{N}$	B D	1	-		11		X	
N 7-7-21	رز ربوا حال	423 B	Water	VIN		100						
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Possible Hazard Identification	D Poison B Sunknow			Sa				_	ed ii sain al By Lab		t <mark>ained longer than</mark> Archive For	Months
Non-Hazard Flammable Skin Irritant  Deliverable Requested: I, II, III, IV, Other (specify)	Poison B Unknow	ın Radiologic	cai	Sp		turn To Client structions/Q0			и Бу Сар		Archive For	- WONG
									lethod of Sh	inment:		
Empty Kit Relinquished by:		ate:		Time:		ad by		<u></u>		ate/Time:	,	Company
Relinquished by:	Date/Time: 17/202	0 1452	Astro-	. Gas	Neceive	ed by.	فكعسط		٦	6-17-3	02 1657	Company
Relinquished by:	Date/Time:	<u> </u>	Company Company	+ V	Receive	ed by		<del>, _</del>	Ċ	late/Time:		Company
,	Date/Time		Сотрапу		Receive				C	ate/Time:		Company
Relinquished by:	Dracer ( HIID	•										-
Custody Seals Intact: Custody Seal No.:					Cooler	Temperature(s)	°C and Othe	r Remarks:				•
Δ Yes Δ No					L					·		Ver: 01/16/2019

## Eurofins TestAmerica, Savannah

5102 LaRoche Avenue Savannah, GA,31404

# Chain of Custody Record

eurofins Environment Testing America

Phone: 912-354-7858 Fax: 912-352-0165	Sampler:		-	Lab P		-				Carr	ier Trackir	g No(s):			COC No:	0.1	
Client Information	Katch	WE	often		ett, Ed	die T				_					680-115615-4365 Page:	U. I	
lient Contact.	Sampler: Katu Phone: (384)	18410	787_	E-Mai eddie		ett@tes	tamerica	ainc.co	m						Page 1 of 1		
Company:	<u>,</u>							Anal	lysis R	еапе	sted				Job #:		
Antea USA Inc.	Due Date Requeste	ed:			122	Ţ	ľ	Airai	J 1 1	- 446	<del>_</del>	T		П	Preservation Code	s:	
Address: SOD Stummit Lake Dr. 5788 Wide Water Parkway 2nd Floor ANTEA																M - Hexane N - None	
Dity: 3 C N N	TAT Requested (da	ys):													C - Zn Acetate	O - AsNaO2	
State Zin	5														E - NaHSO4	P - Na2O4S Q - Na2SO3	
NY, 13214 DS95	PO#:														G - Amchlor	R - Na2S2O3 S - H2SO4	
Phone. 614 700 6146(Tet) (914) 495-9935	PO814392				<b> </b> و		eje	.		ĺ					H - Ascorbic Acid I - Ice	T - TSP Dodecahydr U - Acetone	ate
Email:	W0 #: Task 400				Sample (Yes or No)	1 1	Total Recoverable otal	***************************************						r.s	J - DI Water	V - MCAA W - pH 4-5	
Cody.Hume@anteagroup.com Project Name:	Project #:				ءِ اعْ	1 1.	Recc							containers		Z - other (specify)	
Glens Falls POTW Quarterly	68000956 \$SOW#:				불탈		s, Total I							14	Other:		
Site:			,		S S	245.1								er of			
			Jampie	Matrix	S Se	\ \ \ \	- Phenolics, - Cyanide, T							Total Number			
			Type	(W≃water, S=solid,	Field Filt	្ត្រី	<u>e</u>   6							tal			
Sample Identification	Sample Date	Sample Time	(C=comp, с G≕grab) вт=	=waste/oil. Tissue, A=Air	) = E	200.8	335.4			<u>'</u>	1			10	Special Ins	structions/Note	
Sample Identification			Preservation	n Code:	X	7 1	в В ;	$\perp$			4-1-	4-4	_ _	$\stackrel{\textstyle \wedge}{=}$			
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Possible Hazard Identification			<u> </u>		s	ample	Dispos	al (A fo	ee may	be ass	essed it	sample	s are re	etain	ned longer than 1 hive For	month)	
	oison B Unk	(nown 🗀	Radiological	*******	- 1	146	etuni 10	CHEIR		(2)3	posui oj	/ Lab		Arc	hive For	Months	
Deliverable Requested: I. II, III, IV, Other (specify)					S	pecial i	instructio	JIIS/QC	require	enents							
Empty Kit Relinquished by:		Date:			Time				.1	```		d of Shipm				Company	
Relinquishes by Relinquishes b	Date/Time:	120 B		ompany Ompany	. 0	Recei	ived by	700	6.	)Q~		Date/	Time: -17-1	62	1652	Company	
	Date/Fime:	<u> </u>		ompany		Rece	ed by		<u>v ~1764</u>			Date	Time:			Company	
Relinquished by.												Data	/Time:			Company	
Relinquished by:	Date/Time:		.  c	ompany		Rece	eived by:					Late					
Custody Seals Intact: Custody Seal No.:						Coole	er Temper	ature(s)	C and Oth	ner Rema	ırks:				<u>-</u>		
A Yes A No															·····	Ver: 01/16/2019	)

		***************************************			101(<	7177
Water Level N		nts			Date W 13	2020 Quarter/Year: 202020
Ashland - Gier	ns Falls, NY		γ		Personnel:	ly B, Cody W, Katelyn F.
Well Name	install Depth (ft bgs)	Well Screen Length	Time	DTW (ft btoc)	Total Depth (ft btoc)	Comments
MAIN PLANT	SITE					
AW-A14	34.5	10	1549	17:01	32.109	
AW-84	47.5	10	1547	30.17	45.75	
AW-C11	158,0	10	1543	43.03	134.74	
MW-0814	18.0	10 Ju	2016×	11.02	19.110	
MW-OB25	10.0	5	1545	D.DI	11.37	
MW-OB26	14.0	5	1517	11.010	17.71	
REMEDIATION	SYSTEM	111 11	1607	7894		
Sump A	~31,5	N/A	1450	2272	31.48	
Sump B	~29.2	N/A	1450	2272	28.83	
EW-85	51.8	15.8	1513	44.57	53.75	
PRE-TREATME	NT PLANT	All Alberta Com-		the residence of the		
MW-OB19	10.0	5.0	VIII	X.48	V. (02)	
MW-0823	6.5	4.0	1)95X	CV.33	8215	
Canal (SG-2)	NA [	NA	02/20	1045	10.58	Gauged in place of SG-7 and SG-11
PTP-SB01		ĺ	UM57	$D_13$	110/43	
SG-7 and SG-1: former location		ge no longe	r in place. Fe	eder Canal der	oth to water and to	otal depth to be measured from canal wall by trail near

QA/QC Tracking Sheet

Sample Team Members: Hauy B., Cory M., Kothyw F.

Date Time Sample ID Sample Type Comments (i.e. Pump ID, or Parent Sample)	
	$\omega_{V}$
1015/2020 1510 PTP-SBO1-20200015 MS/MSD PEW PUMP GOLD PTP-SBO1	
4 15 2020 1720 SF-11-20200015 MS/MSD Bailer (grab), SF-11	
6/15/2020 1920 SOUPD 2 2020 DUIS DUP BOWLY (grab) SE-11	
4 1120 EBB -7000 116 EB Blacker #1431 , before MW-0814	
441112000 1527 AW-CII -207DOWIG MS MSD BIGNARY QUAD #14312 , AW-CII	
- TUI 2000 1232 English 1232 En	
417(200 1550 15804-2020 1/17 EB Bladder # 14310, after AW-A14	

## Sample Types:

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

DUP - Duplicate sample. Record sample location where duplicate collected

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

Other - record details of sample and where and why collected

6097126039 John Ashland - Glens Falls, NY

# Ashland - Glens Falls, NY Daily Calibrations

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

Time	1130	Staff:	DOVA	Murphy
Model:	YST (	920	V	"
Meter Serial #:	2794	2		Successful?
PΗ	4017/4.00	10-11	10-00	7
Conductivitiy	10230	1/1041	<b>b</b>	$\checkmark$
Turbiduty	-B.970.0	120:21	126	×
DO	99,0		0%	
Temperature	210	945		N/A

Time	1130 Staff: Hovey	+ Brown
Model:	YST 6920	
Meter Serial #:	4739	Successful?
pН	3.72/4.00 10.63/10.00	Y
Conductivitiy	1,232/1,413	×
Turbiduty	1-0.5/0.0 127-3/126	×
DO	76.0%/100%	>
Temperature	21075	N/A

Time	Staff:
Model:	
Meter Serial #:	Successful?
рН	
Conductivitiv	
Turbiduty	
DO	
Temperature	N/A

Date:	6/15/20	Quarter/Year: 2Q 20
Personnel:	Helly Brown	+ Coden murphy

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

Turbiduty DO

Temperature

Time	Staff:	
Model:		
Meter Serial #:		Successful?
рН		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A
Time	Staff:	
Model:		0 (10
Meter Serial #:		Successful?
рН		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A
Time	Staff:	
Model:	······································	
Meter Serial #:		Successful?
pΗ		
Conductivitiy		

# Ashland - Glens Falls, NY Daily Calibrations

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

Time	()830 Staff: (oders M	<b>^</b> ·
Model:	Y51 6920	
Meter Serial #:	27947	Successful?
pН	309114.00 10.05/10.00	Ý
Conductivitiy	1.446/1.413	Y
Turbiduty	-1.6/0.0 125.9/126	$\sim$
DO /3	98.6/101.4%	$\sim$
Temperature	18.7)	N/A
08-8	248.7/240.0	
Time	0830 Staff: Hawy	8 ·
Model:	YSI 6920	Successful?
Meter Serial #:	4739	Successiui?
рH	4.03/4.00	Y
Conductivitiy	1:453/1,413	X
Turbiduty	0.4/00 120.6/126	Y
DO %	112,3/100%	7
Temperature	[7.8]	Ń/A
ORP	1 12 245 351240	
Time	Staff:	
Model:		CuppopofulO
Meter Serial #:		Successful?
рН		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A

Date: 6[16[20	Quarter/Year: 202021
Personnel: Hally Brown +	Edy Murphys
	- 0 10

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

Time	Staff:	
Model:		CuppagafulO
Meter Serial #:		Successful?
рН		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A
Time	Staff:	
Model:		0
Meter Serial #:		Successful?
pH		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A
Time	Staff:	
Model:		CuppendulO
Meter Serial #:		Successful?
pH		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A

# Ashland - Glens Falls, NY Daily Calibrations

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

Time	830 Staff: Howy B	ronn
Model:	YS= \$920	
Meter Serial #:	4734	Successful?
pН	4.06/4.00 9.97/10.00	Y
Conductivitiy	1.392/1/413	×
Turbiduty	-0.1/0.0 127/126	Ý
DO	103%/100%	Ý
Temperature	19.89	N/A
ORP	234,7 / 240	У
Time	836 Staff: Cody Murp	, , , , , , , , , , , , , , , , , , ,
Model:	YS1 6926	
Meter Serial #:	27942	Successful?
рH	4.06/4.00 9.99/0.00	V
Conductivitiy	1.338/1.413	<b>Y</b>
Turbiduty	5.4/0.0 153/126	y
DO	lol / 100	Y
Temperature	19.90	N/A
CRP	234.8/240	V
Time	Staff:	
Model:		0
Meter Serial #:		Successful?
рН		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A

Date:	6/17//20	Quarter/Year: 202020
Personnel:	Hally Brown	+ Codes Murphys-
	0	Prog

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

Time  -	Staff:	
Model:		
Meter Serial #:		Successful?
На		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A
T:		
Time	Staff:	
Model:		Successful?
Meter Serial #:		Odccessiui:
На		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A
Time	Staff:	
Model:		Successful?
Meter Serial #:		Ouccessiuii
pН		
Conductivitiy		
Turbiduty		
DO		
Temperature		N/A

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event Sampling Personnel: Date: Original Install Depth: Weather: Screen Length: Time Out: Well Diameter: inches WELL INFORMATION Depth to Water (from TOC): Well Type: Stick-Up Flushmount Depth to Water(From TOC) With Well Locked: X Yes Pump in place: No Total Depth (from TOC): (feet) Measuring Point Marked: Yes No Length of Water Column: .110 Well Condition: Good Poor Well Condition Comments: WELL WATER INFORMATION EVACUATION INFORMATION  $\times$ Pump Size: (Flopning Depth of Pump Intake: 9.00 Volume of Water in Well: (mL or gal) Evacuation Pumping Rate of Pump: (mL/min) 0 Bailer Peristaltic J Bladder Other \_\_\_ Method: Total Volume Removed: (mt. or gal) . Donl Tubing Used: Teflon Polyethylene N/A Volume Measurement (gal) (ml) Tubing/Well Size Water Quality Meter (type/Serial Number): Peristaltic Bladder Tubing Volume per foot 0.003 11.36 1/4" ID tubing Other Method: Did well go dry? Well Volume per foot 0.041 Yes 155.18 1" diam. well 0.163 616,95 2" diam. well Final Depth to Water (prior to turning off pump): 0.653 2.471.60 4° diam, well Barometric Pressure (At time of sampling) in mm/Hg: FIELD PARAMETER READINGS: Rate (ml/min) 120 00 Depth to Water (ft. TOC) Temperature (\*C) Conductivity (m5/cm) Dissolved Oxygen (mg/L) Turbidity (NTU) ORP (mV) SAMPLE INFORMATION Observations (water color, clarity, etc.): @1253 Depion Dump to 09.50 Sample ID: Duplicate ID: Sample List: Diss. Chromium & Vanadium Sample Time: Diss. Hexavalent Chromium Total Bottles: M5/M5D: Yes Sampled By: Free Cyanide Duplicate: Yes MIS/MSD ID: Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) Total Dissolved Sollds Total Bottles: Sample Time UNIT STABILITY Hardness Sampled By: **Total Bottles:** DO Turb. Cond ORP VOCs (Dichlorobenzenes) Page \_\_\_\_ of\_\_ Sampled By: ± 0.1 ± 10% ± 10%, <10NTU ± 3% ± 10 mV

Ashland Glens Falls, NY Quarterly Groundwater & Surface Water Sa

i/_	· / · · · · · · · · · · · · · · · · · ·	)		Quarte	rry Ground	water & Su	rrace wate	r sampling	tvent					
Sampling Personnel:	my t	510 V	<u>un</u>		****		Wel	l ID:	MW-0B19					
Date:	120						Original In:	stall Depth:	10.0	feet			***************************************	
Weather:	inny	<u>`+0:</u>	<b>&gt;</b>				Screen	Length:		feet	***************************************			
Time In: 00/15	0		Tlme Out:	D4116	>		Well Di	ameter	2	inches				***************************************
		UIS		@/ib		WELLINFO	RMATION							<del></del>
Depth to Water (from TOC):	(feet)	8 49		8.5	D	Well Type:		Flushmount		Stick-Up	40)			
Depth to Water(From TOC) With Pump in place:	(feet)	ų.		8.5	7	Well Locked:		Yes	<b>A</b>	No	Time to the second			
Total Depth (from TOC):	(feet)		- //	906	9	Measuring Point	Marked:	Yes		No	<del>-</del>			
Length of Water Column:	(feet)		7	10/4		Well Condition:	******	Good	<u> </u>	Poor				
						Well Condition C	Comments;							
WELL WATER INFORMATION						EVACUATION IN	FORMATION		1/9	2" x 1/2	<i>(1).</i>			
Volume of Water in Well:	(mL or gal)		D. IX	(p		Pump ID:	4057		Pump Size:	- ^ ^	Depth of Pump Is	ntake: 4	04	
Pumping Rate of Pump:	(mL/min)	100	H			Evacuation Method:	Baller		Peristaltic		Depth of Pump II		Other D	
Total Volume Removed:	(mL or gal)	10-59	pr (		700000	Tubing Used:	Tefion		Polyethylene	<del></del>	N/A			
Volume Measurements	(gal)	(mi)	Yubing/Well Si	ze		Water Quality N	leter (type/Serial	Number); Y	SI (	39Z0	# 1	<del>-</del>	<del>}                                    </del>	
Tubing Volume per foot	0.003	11.36	1/4" ID tubing			Sampling Method:	Bailer		Peristaltio	<b>A</b>	Bladder	- <del>-</del>	Other 1	
Well Volume per foot	0.041	155.18	1" diam. well			Did well go dry?	Yes		No	<b>2</b>	1,0,000			
	0.153	616.95	2" diam. well		_	Final Depth to V	/ater (prior to tur	ning off numpl:	9.0	3	**	· · · · · · · · · · · · · · · · · · ·		
	0.653	2,471.60	4" diam. well				sure (At time of s		<del></del>	7.282				
						FIELD PARAME			· · · · · · · · · · · · · · · · · · ·					
Time	1929	***************************************												
Rate (ml/min)	100													
Depth to Water (ft. TOC)	8.86										·			
Temperature (°C)	16.83				**									
рН	6.69													
Conductivity (m5/cm)	السمارة		<del> </del>						<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>					
Dissolved Oxygen (mg/L)	1000													<u> </u>
	0 1		ļ											
Turbidity (NTU)	7200		ļ											İ
ORP (mV)	+3,2													
SAMPLE INFORMATION		V							ater color, clarity	, etc.):				
Sample List:		Sample (D		1_20200616	Duplicate ID	): 		CoR	AB					
Diss. Chromium & Vanadium	_	Start Time:	<u> </u>	<u> </u>	Sample Time			0.,	2 7 . —					
Diss. Hexavalent Chromium	<b>~</b> -/	End Time:	<u> </u>	S	Total Bottles			1						
NOOK Total Cyanida	۱ -	MS/MSD:	_	No XX	Sampled By:			1				. r Inn		
Free Cyanide Total Dissolved Solids	<b></b>	Duplicate:	_ `	No XX	N/E/MSD ID	); 		Free Cyanide Sui			/ Negative (No ch	ange)	7	
	_ ,	Total Bottles			Sample Time			<del></del>	1	TABILITY	1	, i	1	
Hardness VOCs (Dichlorobenzenes	_	Sampled By:	77/5	2	Total Bottles			pH	DO	Turb,	Cond	ORP		1
vocs (Dichloropenzanes	<u> </u>				Sampled By	:		±0.1	± 10%	± 10%, <10NTU	±3%	±10 mV	Page	_ of

Ashland Glens Falls, NY

. •		_		Quarte	rly Ground	lwater & Su	rface Wate:	r Sampling	Event					
Sampling Personnel:	War F	7/0 W/	$\overline{\gamma}$				Wel	l ID:	MW-QB23					
Date: 6 5	70						Original In:	stall Depth:	6.5	feet				
Weather: (1004	470	Ś					Screen	Length:		feet				
Time in: 1400	T:		Time Out:	010			Well Di	ameter:	2	Inches	**************************************		***************************************	
		616		48664646		WELLINFO	RMATION							- 
Depth to Water (from TOC):	(feet)	10.53				Well Type:		Flushmount		Stick-Up	ZP			
Depth to Water(From TOC) With Pump in place:	(feet)	6.34	<u>う</u>			Well Locked:		Yes	A	No				
Total Depth (from TOC):	(feet)	8 415	>			Measuring Point	t Marked:	Yes		No	<b>⊠</b> Ó			
Length of Water Column:	(feet)	7.17.				Well Condition:		Good		Poor				
		100				Well Condition (	Comments:							
WELL WATER INFORMATION		Night Service				EVACUATION IN	FORMATION							
Volume of Water in Well:	(mL or gal)					Pump ID: $U$	052		Pump Size: G	es pormy	2 Depth of Pump I	ntake:	39	
Pumping Rate of Pump:	(mL/min)	100	<b>&gt;</b>			Evacuation Method:	Baller		Peristaltic	$\overline{}$	Bladder		Other	
Total Volume Removed:	(mL or gal)	3.	7554	· (		Tubing Used:	Teflon		Polyethylene	<b>SP</b>	N/A			
Volume Measurements	(gal)	(ml)	Tubing/Well Size	er e a garaga avez a tipolo		Water Quality N	Aeter (type/Serial	Number): YS	I E	420	147	39r		
Tubing Valume per foot	0.003	11.36	1/4" ID tubing			Sampling Method:	Bailer		Peristaltic	188k	Bladder		Other	
Well Volume per foot	0.041	155.18	1" dlam, well			Did well go dry?	Yes		No	8				
	0.163	616.95	2" diam. well			Final Depth to V	Vater (prior to tur	ning off pump):	4.	75				
	0.653	2,471.60	4" diam. well			Barometric Pres	sure (At time of s	ampling) in mm/	ו. נר־־	J-39				
		galificiga utanga	gurakaga Panip			FIELD PARAME	TER READINGS:			Alle England	966930951695		<i>6469816816</i>	againe (agai
Time	1417	1419	1921	1423	1425	1427	14.32	14:37	1442	1447	1452	1457	1502	1507
Rate (mi/min)	100.	100	100	100	100	100	100	100	100	100	600	100	100	100
Depth to Water (ft. TOC)	6.80	8.40	8.93	0.96	6.48	4,00	100	4017	9023	90255	7031	19035	7-36	7.40
Temperature (°C)	15,3	14.81	14.30	14.92	14.96	14.86	14-82	14,69	1400	14.54	14-32	14,40	14,4	14-41
pH	600	6.58	55+	650	6.67	6.66	6,71	672	6-75	6-76	6.74	6.76	6,22	6.78
Conductivity (mS/cm)	7.10	0.218	05779	0.705	12.77	0,771	U = 705	0.60	6.681	0.671	0.666	11:657	0,-655	0.64
Dissolved Oxygen (mg/L)	7 00	7-13	100	1 60	1.51	1.39	1008	0.99	0.00	11.73	3 7 1	200	1008	1.26
	20	27	100	1,50	1001	160	1 (	1 ~	170	1.3	00+1	23/10	7 7	3.0
Turbidity (NTU)	3.8	1220	PSY	00 +	2000	106	104	704	001	1.0	20	130	1200	Jo ()
ORP (mV)	1-48.4	10000	1-010	, _DD°1	-47.5	1 27 Oct	101.9	- 76.2	70°L	1-03st	1-41.4	<u> 1100</u>	-65±	175+,k
SAMPLE INFORMATION			86. 60				yeyari sejiyili tiri		water color, clarit	y, etc.):	gregorysektyjaktor	20000000000000000000000000000000000000	A 61	alfadeletifele
Sample List:	_	I	MW-081			Contraction of the Contraction o			2 pum	pinta	Me.	to 3.	00 00	755
Diss. Chromium & Vanadium	-	Start Time:		O CONT	Sample Time		·	-						
Diss, Hexavalent Chromium		End Time:		1407	Total Bottles			-						
NaOH Total Cyanid		MS/MSD:	_	No (5)<	Sampled By			-						
Free Cyanida		Duplicate	<b>-</b> .	No €	MS/MSD ID	No. Company		Free Cyanide St		Positive (Black	/ Negative (No cl	range)		
Total Dissolved Solids Hardness		Total Bottles Sampled By:	- 10		Sample Time Total Bottles	William William	San Allendaria Contra	pH 4.25	DO DO	Turb.	Cond	ORP	1	^
VOCe (Dichlorphanzenes	_	задреч ву:	<u> H</u> D		Sampled By		· Share	рп +0.1	+ 10%	± 10% <10NTU	1000	# 10 mV	Page	of U

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Ashland Glens Falls, NY
Ouarterly Groundwater & Surface Water Sampling Event

		·		Quarte	гту стоипа	water & Sur	Tace water	. Sambiiud i	:vent					
Sampling Personnel:	Mate	Soun					Well	ID:	MW-OB23					
Date: 611	51/2U						Original Ins	tall Depth:	6.5	feet			***************************************	
Weather: (1) NC	W 7-1	25					Screen L	ength:		feet	***************************************			**
Time In: 140()	0	- -	Time Out:	PID			Well Dia	meter:	2	inches				
		6/15				WELL INFOR	MATION		. ,	44			~	
Depth to Water (from TOC):	(feet)	6,33	>			Well Type:		Flushmough		Stick-Up	D (	113	オー	
Depth to Water(From TOC) With Pump in place:	(feet)	6.30	\$			Well Locked:		Yes	Z	No		<u> </u>		
Total Depth (from TOC):	(feet)	8.45	5			Measuring Point I	Marked:	Yes		No	12			
Length of Water Column:	(feet)	2.10	2			Well Condition:		Good	XZP	Poor				
						Well Condition Co	omments:							
WELL WATER INFORMATION						EVACUATION INF	ORMATION				٠.			
Volume of Water in Well:	(mL or gal)	-				Pump ID: U	052		Pump Size:	primp	Depth of Pump J	ntake: 1	,39	
Pumping Rate of Pump:	(mL/mln)		<u>(</u>			Evacuation Method:	Baller		Peristaltic		Bladder		Other	
Total Volume Removed:	(mL or gal)	357	5001			Tubing Used:	Teflon		Polyethylene	<u>d</u> )	N/A			
Volume Measurements	(ga))	(ml)	Tubing/Well Size			Water Quality Me	eter (type/Serial I	Number):	SI 6	120	/457;	39	********	
Tubling Volume per foot	0.003	11,36	1/4" ID tubing			Sampling Method:	Bailer		Peristaltic	<b>图</b>	Bladder		Other	
Well Volume per foot	0.041	155.18	1" diam. well			Did well go dry?	Yes		ид	<del>/</del>				
***************************************	0.163	616.95	2" diam, well			Final Depth to W	ater (prior to turr	ning off pump):	7.7	5			-	
	0.653	2,471.60	4" diam. well			Barometric Press	ure (At time of sa		~ .	ري. (33)				
	1.2					FIELD PARAMET	ER READINGS:		•					
Time	1512	1514	157	1527	1532	1537	1542	1549	1552	15.59	1			
Rate (ml/mis)	100	160	[00	100	160	100	100	100	100	(00				
Depth to Water (ft. TOC)	7.42	1-45	7.47	7.50	7.52	7.57	7-60	7.63	7-67	7.71				
Temperature (*C)	Mout	14.55	14.52	1451	14,72	14.54	14,49	14 31	14.33	14.40				
рн	6-91	6.04	6.910	6.02	6519	622	6,24	684	6.95	6.94			<del> </del>	
Conductivity (mS/cm)	0/1/4	0.04	1.122	1.638	0 621	A 625	12.625	6621	0.644	0.647				
Dissolved Oxygen (mg/L)	i ii i	1 2/2	1 27	7.01	4 10	1.08	7 7	7 07-	112	3-40	-			
Turbidity (NTU)	2 1	1370	1000	2.7	270	-	<u>3 લાક્ર</u>	302 T	3,60	22011	<del></del>			-
	200	1000	1.5	20 4	27	4,0	3.0	400	406	2004			<del></del>	-
ORP (mV)	1000	-4524	1-40.4	12.1	-41.3	-4.7	-1500	-124	-1123	7-1-1			<u> </u>	i
SAMPLE INFORMATION		·							ater color, clarity		<u> </u>			
Sample List:	_		7	73_207086	5 Divelicate ID			Diop	pum	pinan	化十二	8000	@145	75
Diss. Chromium & Vanadium  Diss. Hexavalent Chromium		Start Time:		1 N 1	Sample Time			ļ						
Na OH Total Cyanide		End Time: MS/MSD:		No B	Total Bottles Sampled By:									
Free Cyanide	_	Duplicate		No IXID	MS/MSD ID			-						
Total Dissolved Solids	_	Total Bottles	<b>–</b> ,	ديم …	Sample Time			Free Cyanide Sul		Positive (Black) , TABILITY	/ Negative (No ch	ange)		
Hardness	_	Sampled By:			Yotal Bottles			рН	DO	Turb.	Cond	ORP	٦ _	
VOCs (Dichlorobenzenes			711/		Sampled By:			±0.1	+10%	+10% <10NTU	+3%	+10 mV	Page 2	- 2-

Ashland Glens Falls, NY

Sampling Formand   March   M
Content   1   1   1   1   1   1   1   1   1
Time   13-20
Time
Depth of Water (From TOC) With   Depth of Water (Column 1   (Feet)
Total Poghi (From TOC):   (Feet)   (F
Well Conditions   Good   Page   Page
Well Volume (F. TOC)   12-32   13-91   13-35   13-37   13-45   13-37   13-37   13-37   13-37   13-37   13-37   13-37   13-37   13-37   13-37   13-37   13-37   13-37   13-37   13-37   13-37
Volume of Water in Well:   (ml. or gail)   0.25
Pumping Rate of Pumps:   (mt/min)
Pumping Rate of Fumps
Tubing Used:   Teflon   Polyethylene   N/A
Volume Measurements   (gall   (mi)   Tubing/Well Size   Water Quality Meter (type/Serial Number): Y5   6930   37948
Tubing Volume per foot 0.003 11.36 1/4" 10 tubing Soller Soller Peristalite Soller Other Soller Soller Peristalite Soller Other Soller
Well Volume per foot   0.041   155.18   1" diam, well   Did well go dry?   Yes   No   Well   No   We
0.163   516.95   2" diam, well   Sharinettic Pressure (At time of sampling) in mm/Ag: \$\frac{1}{1} \text{ A o . 28}\)  Time   13.41   12.43   13.45   12.47   12.49   12.57   12.76   1301   1306   1311   1316   1331   1336   1331    Rate (m1/min)   120   120   130   100   100   100   100   100   100   100   100   100   100    Depth to Water (fr. TOC)   13.33   13.41   13.35   13.37   13.39   13.37   13.38   13.42   13.45   13.47   13.52   13.57   13.65    Temperature (*C)   10.73   11.63   11.63   11.73   11.45   11.72   12.15   12.25   13.39   12.39   12.39   12.39   12.38   2.43    phi   G-83   G-87   G-86   G-85   G-83   G-83   G-83   G-84   G-86   G-88   G-90   G-91   G-92    Contaction (*C)   13.55   13.57   13.5
Barometric Pressure (At time of sampling) in mm/Ag: \$\frac{1}{1} \cdot 0.28\$   I 3 is 4 is 13 45 is 13 47 is 149 is 13 56 is 13 is 13 6 is 13 6 is 3
Time 18.41 12.43 12.45 12.47 12.49 12.51 12.76 12.01 13.06 13.11 13.16 13.21 13.26 13.31 13.26 13.31 13.26 13.31 13.26 13.31 13.20 12.0 12.0 12.0 12.0 12.0 12.0 12.0 1
Rate (ml/min) 120 120 130 100 100 100 100 100 100 100 100 10
Rate (ml/mlm) 120 120 130 100 100 100 100 100 100 100 100 10
Depth to Water (ft. TOC)  12.32 12.91 13.35 13.37 13.39 13.39 13.37 13.38 13.42 13.45 13.47 13.52 13.57 13.65  Temperature (TC)  12.33 11.63 11.63 11.72 11.45 11.72 12.15 12.25 12.25 12.39 12.39 12.39 12.39 12.38 2.43  pH  6.43 6.87 6.87 6.87 6.86 6.88 6.83 6.83 6.84 6.86 6.88 6.90 6.91 6.92
Temperature (C) 13.73 11.63 11.63 11.72 11.45 11.72 12.15 12.25 12.39 12.39 12.39 12.39 12.38 12.43 pt 6.83 6.87 6.87 6.86 6.88 6.90 6.91 6.92
6.83 6.87 6.87 6.86 6.85 6.83 6.83 6.84 6.86 6.88 6.90 6.91 6.92
Combination instant 8 562 and a 100
Conductivity (ms/cm) 0.563 0.540 0.539 0.538 5.539 0.537 0.563 0.571 0.573 0.577 0.579 0.583 0.593
100 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0
THANKS OF THE STATE OF THE STAT
200 5 00.7 Sub-1 10.0 07.5 13.0 17.5 18.5 17.5
57.1 50.0 585.
SAMPLE INFORMATION  DAPO 20200 () Observations (water color, clarity, etc.):
Sample 10: PT SB01.30000 Spouplicate 1D: Department 12.45 lower from rate to 100 millions. Chromium & Vanadium Start Time: 15.10 Sample Time:
NoTAL Total Confidence of the
500 Control to 14:50
ranide Sulfilde Test Strip: Positive (Mack) / Negative (No change)
Total Dissured Solids Total Bottles: Sample Time: Sample Time: India Hongraphy
Total Dissolved Solids Total Bottles: Sample Time: 50 UNIT STABILITY Hardness Sampled By: CA Total Bottles: pH DO Turb. Cond ORP

Ashland Glens Falls, NY

				Quart	erly Ground	lwater & Si	ırface Wate	r Sampling	Event						
Sampling Personnel:	Morphy							II ID:	PTP-SB01						
Date: 6   15 (20	• 1						Original in	stall Depth:	15.6	feet					
Weather: 76 50 5000	<del>~</del>						Screen	Length:	10	feet					
Time in: 12 20			Time Out: 15	45			Well Di	iameter:	1	inches					
		6/15				WELL INFO	RMATION		·						
Depth to Water (from TOC):	(feet)	16.13				Well Type:		Flushmount		Stick-Up	X				
Depth to Water(From TOC) With Pump in place:	(feet)	10.13				Well Locked:		Yes		No	X				
Total Depth (from TOC):	(feet)	16.93				Measuring Point	: Marked:	Yes		No	_=				
Length of Water Column :	[feet]	6.50				Well Condition:		Good	X	Poor					
			***************************************			Well Condition Comments: Temp. Well									
WELL WATER INFORMATION					EVACUATION INFORMATION										
Volume of Water in Well:	(mL or gal)	0.25	gal		*******	Pump ID: 🛕	066		Pump Size:		Depth of Pump I	ntake: 16.	60`		
Pumping Rate of Pump:	(mL/min)	120 -	₩ 100			Evacuation Method:	Baller		Peristaltic	ম	Bladder		Other		
Total Volume Removed:	(mL or gal)	4.59	1			Tubing Used:	Teflon		Polyethylene	X	n/a			-	
Volume Measurements	(gal)	(ml)	Tubing/Well Size	1			Neter (type/Serial	Number): Y5	1 692	O .	3.	7942			
Tubing Volume per foot	0.003	11.36	1/4" ID tubing		,	Sampling Method:	Baller	· 🔲	Peristaltic	X	Bladder		Other	*****	
Well Volume per foot	0.041	155,18	1" diam, well		Did well go dry? Yes				No	<b>M</b>	1100				
	0.163	616,95	2" diam, well			Final Depth to V	Vater (prior to tun	ning off pump):	15.71						
	0.653	2,471.60	4" dlam. well					ampling) in mm/H	= 74b	289					
Time		15/1	1/	<b>4</b>	T .	FIELD PARAME				<del>- ,</del>					
<del></del>	1936	1341	1346	*	1400	1405	1410	1415	1420	1425	1430	1435	1440	1445	
Rate (ml/mln)	100	100	100		100	100	100	100	160	100	100	100	100	100	
Depth to Water (ft. TOC)	13.78	13.98	14.31		14.01	14-30	14.60	14.95	15.23	15.44	15.63	15.58	15.57	15:53	
Temperature (*C)	12.20	12.13	15-08		12.20	11.75	11-54	11.47	11.69	11.98	12.15	12.35		134	
рН	6.93	6.93	6.95		6.92	6.99	6.98	6.19	7.00	7.00	7.0t	7.02	7.03	7.04	
Conductivity (m5/cm)	0.579	0.603	0.608	•	0-605	0.602	0.605	0-607	0-610		0.613	0.614		0.617	
Dissolved Oxygen (mg/L)	4.78	4.75	4.74		5.21	4.54	4.78	4.73	4.59		4.75	4.94		4.97	
Turbidity (NTU)	<b>68.7</b>	109.9	136-2	<u></u>	23.2	16.4	24.9	31.8	37.5	37.46	38.1	29.2	21.8	17.7	
ORP (mV)	387.6	390-1	392.6		350.9	36A.3	372.1	377.2	374.1	372.3	368-0	364.2	366.7	369.2	
SAMPLE INFORMATION					<u> </u>	1	10.0.1	<del></del>	ater color, clarity		2000	207.0	366.1		
Sample List:		Sample IDS	PIP_SE	01 - 2020	Duplicate ID:	Dog	10300615								
Diss. Chromium & Vanadium			15 10		Sample Time			<b>.</b> .		ican .		ow cell	•		
Diss. Hexavalent Chromium	, C	End Time:	1525		Total Bottles	1		14 10	lowe	r tubin	ig inte	alec to	16 '		
Total Cyanide	· <b>S</b>	MS/MSD:													
Free Cyanide	Ü	Duplicates	:Yes 🌋	No 🔲	MS/MSD ID	PTP-51	561. Drac	nide Sul	fide Test Strip:	Positive (Black)	/ Negative (No ch	angel <b>N</b> ]1	Δ		
Total Dissolved Solids		Total Bottles:	: 1		Sample Time:					TABILITY			<del> </del>		
Hardness	_	Sampled By:	CM.		Total Bottles			рH	DO	Turb.	Cond	CRP	1		
VOCs (Dichlorobenzenes					Sampled By:	OV.		±0.1	± 10%	± 10%, <10NTU	±3%	± 10 mV	Page 2	of <b>3</b>	

Ashland Glens Falls, NY

				Quarte	rly Groun	dwater & Su	face Water S	ampling E	vent					
Sampling Personnel: Cody	Murphy	1					Well ID:		PTP-SB01					
Date: 6   15   20	•						Original Install	Depth:	16,6	feet				
Date: 6   15   20 Weather: 76 50 50 50	w	***************************************					Screen Len	gth:	10	feet				
Time In: 12.20	Y		Time Out:	145			Weil Diameter: 1 inche			inches				
		6115				WELL INFOR	MATION							
Depth to Water (from TOC):	(feet)	16.13				Well Type:		Flushmount		Stick-Up	8	,i.	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
Depth to Water(From TOC) With Pump in place:	(feet)	10.13				Well Locked:		Yes		No	×			
Total Depth (from TOC):	(feet)	16.93				Measuring Point	Marked:	Yes		No	28			
Length of Water Column:	(feet)	6.50				Well Condition:		Good	×	Poor				
						Well Condition Co	mments: Tex	wb u	vesi					
WELL WATER INFORMATION	100 1000 00000		Santana	346406666		EVACUATION INF							ingermanner	25052555
Volume of Water in Well:	(mL or gal)	0.28	لم			Pump ID: 40	ક		Pump Size; 🕶	1	Depth of Pump I	ntake: 16 -C	n¹	
Pumping Rate of Pump:	(mL/min)	120 -	166			Evacuation Method:	Baller	Ĭ	Peristaltic		Bladder		Other	
Total Volume Removed:	(mL or gal)	4.50	n l			Tubing Used:	Tefton		Polyethylene	×	N/A			
Volume Measurements	(gal)	(ml)	Tubing/Well Size		W. W. C.	Water Quality Me	ter (type/Serial Num	nber]: <b>Y5</b> 5	ଜ୍ୟେପ		27	942		
Tubing Volume per foot	0.003	11.36	1/4" ID tubing			Sampling Method:	Baller	]	Peristaltic	X	Bladder		Other	
Well Volume per foot	0.041	155.18	1" diam. well		44	Did well go dry?	Yes	<u></u>	No	<b>M</b>				
	0.163	515.95	2" diam. well			Final Depth to Wa	ter (prior to turning	off pump):	15.7	ŧ			-	
	0,653	2,471.50	4" diam. well			Barometric Press	are (At time of sampl	ling) in mm/Hg	そしし:	289				,
		Koren Gülfoni -				FIELD PARAMET	R READINGS:							
Time	1450	1455	1500	1505									<u> </u>	
Rate (ml/min)	100	100	100	160					······································					
Depth to Water (ft. TOC)	15.56	15.61	15.64	15-69									1	
Temperature (°C)	11.98	11.88	11.77	11-50	1									
PH	7.04	7.03	7.04	7.04			į							
Conductivity (mS/cm)	0.615	0.64	0-613	0.613				1						
Dissolved Oxygen (mg/L)	4.90	4.67	4.73	4.61						78724101			***************************************	
Turbidity (NTU)	7.9	7.1	6.8	6.7	-								+	<del> </del>
ORP (mV)	369-1	367.4	365.8	<del>   </del>	-		***							-
SAMPLE INFORMATION		301-T	1 <del>20</del> 0.0	<u>2600-4</u>		70-0 van 1700 van 1	tar ensemble and the	servations (wa	ter color, clarity	ore broken de seen	araktikan		meessa Saarii	1
Sample List:		Sample ID:	370 4E	tot serve	• oplicate II	Dup - 20			, 201(1)	, <b>C.</b> (4)			apagagas agangg	<u>ta tahlahalan</u>
Diss. Chromium & Vanadium	ū	Start Time:	1510	AUS - GRANN	Sample Time	" 15 16	POVE							
Diss. Hexavalent Chromium		End Time:			Total Bottle									
Total Cyanide	<b>=</b>	MS/MSD:	Yes 🛣	No 🔲	Sampled By	· CIA							t .	
Free Cyanide		Duplicate	Yes 🔀	No 🔲	MS/MSD II	45-47¢	JOCOG_10	Sanide Sulfi	de Test Strip:	Positive (Black)	/ Negative (No ch	ange} N	14	
Total Dissolved Solids		Total Bottles	· <u>}</u>			° 15 10				TABILITY	201.	<u> </u>	1 -	
Hardness		Sampled By:	OV		Total Bottle	• •		рH	DO	Turb.	Cond	ORP	] _	
VOCs (Dichlorobenzenes)					Sampled By	( DA	11	±0.1	± 10%	± 10%, <10NTU	± 3%	±10 mV	Page _	<b>5</b> of <b>_3</b>

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event Well ID: Original Install Depth: N/A feet Screen Length: N/A feet Time Out: 7410 Well Diameter: inches WELL INFORMATION Well Type: Depth to Water (from TOC): Flushmount Stick-Up Depth to Water(From TOC) With Well Locked: No Pump in place: Total Depth (from TOC): (feet) Measuring Point Marked: No 📥 Yes Length of Water Column: Well Condition: Good 🕶 Poor Well Condition Comments: WELL WATER INFORMATION EVACUATION INFORMATION Volume of Water in Well: (mL or gal) ump ID: Pump Size: Depth of Pump Intake: Evacuation Bailer Pumping Rate of Pump: (mL/min) Peristaltic Other Bladder Total Volume Removed: (mL or gal) Tubing Used: Polyethylene Volume Measurements (gal) (ml) Tubing/Well Size Water Quality Meter (type/Serial Number) Sampling Peristaltic Bladder Other Tubing Valume per foot 1/4" ID tubing 0.003 11.36 Method: Did well go dry? Well Volume per foot 0.041 155.18 1" diam. well 0.163 616.95 2" diam. well Final Depth to Water (prior to turning off pump): Barometric Pressure (At time of sampling) in mm/Hg: 0.653 2,471,60 4" diam. well FIELD PARAMETER READINGS: Rate (ml/mln) Depth to Water (ft. TOC) Temperature (°C) Conductivity (mS/cm) Dissolved Oxygen (mg/L) Turbidity (NTU) ORP (mV) SAMPLE INFORMATION Observations (water color, clarity, etc.): 7020 No Conflicate ID: Sample List: Diss. Chromium & Vanadium Sample Time: Diss. Hexavalent Chromium Total Bottles: Total Cyanide MS/MSD: Yes Sampled By: Free Cyapide Duplicate: Yes MS/MSD ID: Free Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change) Total Dissolved Solids UNIT STABILITY Hardness 🔲 Sampled By: Total Bottles: ρН ORP VOCs (Dichlorobenzenes) Sampled By: ±0.1 ± 10% ± 10%, <10NTU ± 3% ±10 mV

Ashland Glens Falls, NY

Quarterly Groundwater & Surface Water Sampling Event Hailey Brown Original Install Depth: N/A feet Screen Length: N/A feet Time Out: Well Diameter: inches WELL INFORMATION Flushmount Depth to Water (from TOC): Mell Type: 🔪 🐧 Stick-Up Depth to Water(From TOC) With (feet) Well Locked: No Pump in place: Total Depth (from TOC): Measuring Point Marked: No C Yes Length of Water Column: Well Condition: Poor Well Condition Comme WELL WATER INFORMATION EVACUATION INFORMATION Pump ID: ( D) AR Volume of Water in Well: (mL or gal) Pump Size: Depth of Pump Intake: vacuation (mL/min) Pumping Rate of Pump: Peristaltic Bladder Other Total Volume Removed: (mt or gal) Teflon Tubing Used: Polyethylene Volume Measurements lubing/Well Size (ml) (gal) Water Quality Meter (type/Serial Number Bailer 🗲 Peristaltic Bladder Other Tubing Volume per foot 0.003 1/4" ID tubing Did well go dry? No Yes Well Volume per foot 0.041 155.18 " dlam. well 0.163 516.95 " dlam. well Final Depth to Water (prior to turning off pump) 0.653 2,471.60 4" dlam. well Barometric Pressure (At time of sampling) in mm/Hg: FIELD PARAMETER READINGS: 1715 Rate (ml/mln) Depth to Water (ft. TOC) Temperature (°C) Conductivity (mS/cm) Dissolved Oxygen (mg/L) Turbidity (NTU) ORP (mV) SAMPLE INFORMATION ADIV 2017 Observations (water color, clarity, etc.): Sample List: Start Time: 17:20 Dks. Chromlum & Vanadium Diss. Hexavalent Chromium End Time: /7:30 Total Cyanide ree Cyanide Sulfide Test Strip: Positive (Black) / Negative (No change Total Dissolved Sollds UNIT STABILITY Sample Time: 1720 Total Bottles: Hardness Sampled By: DO Turb. ORP pH Cond Sampled By: VOCs (Dichlorobenzenes) ±0,1 ± 10%, <10NTU ± 10 mV Page 1 of 1 Brian Jankauskas, P.E. Annual GSMR for the Pretreatment Plant Area November 3, 2020



Enclosure 2 Laboratory Analytical Reports



26-Jun-2020

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

Re: Ashland Glens Falls, NY Work Order: 20061611

Dear Cassie,

ALS Environmental received 4 samples on 18-Jun-2020 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 8.

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: Ehrland Bosworth

Ehrland Bosworth

Ehrland Bosworth Project Manager

#### **Report of Laboratory Analysis**

Certificate No: MN 026-999-449

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

Environmental 為

ALS Group, USA

Date: 26-Jun-20

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

Work Order: 20061611

Lab Samp ID	Client Sample ID	<u>Matrix</u>	Tag Number	<b>Collection Date</b>	Date Received	Hold
20061611-01	SG-7_20200615	Water		6/15/2020 17:30	6/18/2020 10:15	
20061611-02	SG-11_20200615	Water		6/15/2020 17:20	6/18/2020 10:15	
20061611-03	DUP02_20200615	Water		6/15/2020	6/18/2020 10:15	
20061611-04	EB01 20200615	Water		6/15/2020 12:00	6/18/2020 10:15	

ALS Group, USA

Date: 26-Jun-20

Client: EHS Support LLC

Project: Ashland Glens Falls, NY

World Orders

ACRONYMS, UNITS

WorkOrder: 20061611

#### Qualifier **Description** Value exceeds Regulatory Limit \*\* Estimated Value a Analyte is non-accredited B Analyte detected in the associated Method Blank above the Reporting Limit Е Value above quantitation range Н Analyzed outside of Holding Time Hr BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated. Analyte is present at an estimated concentration between the MDL and Report Limit J ND Not Detected at the Reporting Limit O Sample amount is > 4 times amount spiked Dual Column results percent difference > 40% R RPD above laboratory control limit S Spike Recovery outside laboratory control limits U Analyzed but not detected above the MDL X Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level. **Acronym** Description DUP Method Duplicate LCS Laboratory Control Sample LCSD Laboratory Control Sample Duplicate LOD Limit of Detection (see MDL) LOQ Limit of Quantitation (see PQL) MBLK Method Blank MDL Method Detection Limit MS Matrix Spike MSD Matrix Spike Duplicate POL Practical Quantitation Limit RPD Relative Percent Difference TDL Target Detection Limit TNTC Too Numerous To Count APHA Standard Methods A D **ASTM** Е **EPA**

### **Units Reported Description**

SW

 $\mu$ g/L Micrograms per Liter

SW-846 Update III

Date: 26-Jun-20

Client: EHS Support LLC

Project: Ashland Glens Falls, NY

**Work Order:** 20061611

**Case Narrative** 

Samples for the above noted Work Order were received on 06/18/2020. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

### Wet Chemistry:

Batch R291176, Method CNF\_1677\_W, Sample 20061611-02AMS and -02AMSD: The Free Cyanide MS and/or MSD recoveries were below the lower control limit. The corresponding result in the parent sample may be biased low for Free Cyanide.

No other deviations or anomalies were noted.

ALS Group, USA

Date: 26-Jun-20

Client: EHS Support LLC Work Order: 20061611

Project: Ashland Glens Falls, NY

**Lab ID:** 20061611-01A **Collection Date:** 6/15/2020 5:30:00 PM

Client Sample ID: SG-7\_20200615 Matrix: WATER

Dilution Report Result Units Analyses Qual **Factor Date Analyzed** Limit CYANIDE, FREE **OIA 1677** Analyst: MB ND 6/19/2020 01:30 PM 2.0 Cyanide, Free μg/L

**Lab ID:** 20061611-02A **Collection Date:** 6/15/2020 5:20:00 PM

Client Sample ID: SG-11 20200615 Matrix: WATER

Dilution Report Result Units **Date Analyzed** Analyses Qual **Factor** Limit CYANIDE, FREE **OIA 1677** Analyst: MB Cyanide, Free ND 2.0 μg/L 1 6/19/2020 01:30 PM

Client Sample ID: DUP02\_20200615 Matrix: WATER

Analyses Result Qual Limit Units Factor Date Analyzed

CYANIDE, FREE OIA 1677 Analyst: MB

2.0

μg/L

**Lab ID:** 20061611-04A Collection Date: 6/15/2020 12:00:00 PM

Client Sample ID: EB01 20200615 Matrix: WATER

ND

**Dilution** Report Analyses Result Qual Units Factor **Date Analyzed** Limit CYANIDE, FREE **OIA 1677** Analyst: MB Cyanide, Free ND 2.0 1 6/19/2020 01:30 PM μg/L

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

Cyanide, Free

6/19/2020 01:30 PM

Client: EHS Support LLC

**Work Order:** 20061611

**Project:** Ashland Glens Falls, NY

# Date: 26-Jun-20 **QC BATCH REPORT**

Batch ID: <b>R291176</b>	Instrument ID FS3	3100		Method	d: OIA 16	77						
MBLK	Sample ID: MB-R29117	6-R291176	<b>i</b>			Units:	μg/L		Analy	sis Date: 6/19	9/2020 01:	:30 PM
Client ID:		Run ID:	FS3100	_200619B		SeqNo:	649870	3	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	_	ontrol Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Cyanide, Free		1.568	2.0									J
LCS	Sample ID: LCS-R2911	nple ID: LCS-R291176-R291176			Units: µg/L			Analy	Analysis Date: 6/19/2020 0			
Client ID:		Run ID:	FS3100	_200619B		SeqNo:	649870	4	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	_	ontrol Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Cyanide, Free		51.53	2.0	50		0 10	03 8	2-132		0		
MS	Sample ID: 20061611-0	2AMS				Units:	μg/L		Analy	sis Date: 6/19	9/2020 01:	:30 PM
Client ID: <b>SG-11_20</b> 2	200615	Run ID:	FS3100	_200619B		SeqNo:	649871	1	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	_	ontrol Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Cyanide, Free		38.68	2.0	50	-0.2	26 77	7.9 8	2-130		0		S
MSD	Sample ID: 20061611-0	2AMSD				Units:	μg/L		Analy	sis Date: 6/19	9/2020 01:	:30 PN
Client ID: <b>SG-11_20</b>	200615	Run ID:	FS3100	_200619B		SeqNo:	649871	2	Prep Date:		DF: <b>1</b>	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	_	ontrol Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Cyanide, Free		40.11	2.0	50	-0.2	26 80	).7 8	2-130	38.0	68 3.64	11	S
The following samp	les were analyzed in thi	s batch:		061611-01 <i>i</i> 061611-04 <i>i</i>		0061611-0	)2A	20	061611-03A			



Preservative Key:

Y-HCI

2-HNO<sub>3</sub>

+1 513 733 5336

+1 970 490 1511

Unain of Custody Form

+1 281 530 5656

+1 610 948 4903

+1 304 356 3168

Middletown, PA +1 717 944 5541

York, PA +1 717 505 5280

Everett, WA Holland, Mi +1 616 399 6070 +1 425 356 2600

Page coc ID: 224371 Salt Lake City, UT +1 801 266 7700

ALS Work Order #: **ALS Project Manager:** Parameter/Method Request for Analysis **Customer Information Project Information** Guns Falls, NY **Purchase Order Project Name Work Order Project Number** В EHS Support LLC EHS Support LLC C **Company Name Bill To Company** Accounts Payable Cassie Reuter Send Report To Invoice Attn D 316 Grandview Ave 316 Grandview Ave E **Address** Address F G Argyle, WI 53504 Argyle, WI 53504 City/State/Zip City/State/Zip Н (608) 851-0626 (606) 351-0626 Phone Phone Fax Fax Sevendreal Poshlandicon 1 RICELLA PENS-SUPPORT COMPANY Address e-Mail Address Matrix # Bottles Hold No. Sample Description NaOH Water X Water Nach 2-20200615 water NaOH EBOL\_20200615 5 6 7 8 9 10 **Shipment Method** Required Turnaround Time: (Check Box) Results Due Date: Sampler(s) Please Print & Sign Other Std 10 WK Days 2 WK Days ☐ 5 WK Days 24 Hour Relinquished by: Received by: ; MSD 6-11-2020 DUIS MS1 Received by (I, Relinguished by: Cooler ID Cooler Temp. QC Package: (Check One Box Below) TRRP CheckLis Level II Std QC Checked by (Laboratory): 4,200 Logged by (Laboratory): Lavel III Sto GC/Raw Data TRRP Level IV 16:00 **5**0 Level IV SW845/CLP

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

4-NaOH

2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

6-NaHSO<sub>4</sub>

-Øfher

8-4°C

9-5035

8450

5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>

3. The Chain of Custody is a legal document. All information must be completed accurately.

3-H<sub>2</sub>SO<sub>4</sub>

Other

### Sample Receipt Checklist

Client Name:	EHS SUPPORT-ARGYLE				Date/Time	Received	l: <u>18-</u>	<u>Jun-20</u>	<u> 10:15</u>		
Work Order:	<u>20061611</u>				Received b	y:	MJ	<u>3</u>			
Checklist comp	esignature  Matthew Gaylord  esignature	18	8-Jun-20 Date	_	Reviewed by:	Ekrla	nd Bosw ure	orth		1	9-Jun-20 Date
Matrices: Carrier name:	Water FedEx	l				3 3					
Shipping contain	iner/cooler in good condition?		Yes	✓	No 🗌	Not	Present				
Custody seals i	intact on shipping container/coole	?	Yes	<b>✓</b>	No 🗌	Not	Present				
Custody seals i	intact on sample bottles?		Yes		No 🗌	Not	Present	<b>✓</b>			
Chain of custoo	dy present?		Yes	<b>~</b>	No 🗌						
Chain of custoo	dy signed when relinquished and r	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	ele 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 complianc	e?	Yes	<b>~</b>	No 🗌						
Sample(s) rece			Yes		No 🗆		004				
Cooler(s)/Kit(s)	)/Thermometer(s):		4.2/4.20	<u>.</u>			SR1				
	ple(s) sent to storage:		6/18/20	20.3	3:54:42 PM						
	als have zero headspace?			✓	No	No VOA	vials sub	mitted			
Water - pH acc	eptable upon receipt?		Yes	<b>✓</b>	No 🗌	N/A					
pH adjusted? pH adjusted by	:		Yes		No 🗹	N/A					
Login Notes:											
· ·											
	========			_							
Client Contacte	ed:	Date Contacted:			Person	Contacte	ed:				
Contacted By:		Regarding:									
Comments:											
CorrectiveActio	n:								SR	C Pan	e 1 of 1



# **Environment Testing America**

# **ANALYTICAL REPORT**

Eurofins TestAmerica, Buffalo 10 Hazelwood Drive Amherst, NY 14228-2298 Tel: (716)691-2600

Laboratory Job ID: 480-171343-2

Client Project/Site: Hercules Glens Falls 2Q20

For:

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

Attn: Mr. Jim Vondracek

Authorized for release by: 6/29/2020 7:50:45 AM

Ath Barnett

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

eddie.barnett@testamericainc.com

·····LINKS ······

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Total Access

**Have a Question?** 



Visit us at: www.eurofinsus.com/Env The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 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.



Laboratory Job ID: 480-171343-2

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## **Definitions/Glossary**

Client: Ashland LLC Job ID: 480-171343-2

Project/Site: Hercules Glens Falls 2Q20

### **Qualifiers**

#### **General Chemistry**

Qualifier **Qualifier Description** 

MS and/or MSD recovery exceeds control limits. U Indicates the analyte was analyzed for but not detected.

### **Glossarv**

J. J	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DL, RA, RE, IN Decision Level Concentration (Radiochemistry) DLC

EDL Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit MLMinimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

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

**NEG** Negative / Absent POS Positive / Present

**PQL Practical Quantitation Limit** 

**PRES** Presumptive QC **Quality Control** 

Relative Error Ratio (Radiochemistry) **RER** 

RLReporting Limit or Requested Limit (Radiochemistry)

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

**TEF** Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

Page 3 of 16

### **Case Narrative**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q20

Job ID: 480-171343-2

Laboratory: Eurofins TestAmerica, Buffalo

**Narrative** 

CASE NARRATIVE
Client: Ashland LLC
Project: Hercules Glens Falls 2Q20

Report Number: 480-171343-2

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

#### RECEIPT

The samples were received on 06/18/2020; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.5° C and 3.7° C.

#### **TOTAL CYANIDE**

Samples PTP-SB01\_20200615 (480-171343-1), MW-OB23\_20200616 (480-171343-2), MW-OB19\_20200616 (480-171343-3), EB02\_20200615 (480-171343-11) and DUP01\_20200615 (480-171343-12) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 06/25/2020 and 06/26/2020.

Cyanide, Total recovered low for the MS of sample PTP-SB01\_20200615MS (480-171343-1) in batch 480-538269. Refer to the QC report for details.

Sample MW-OB23 20200616 (480-171343-2)[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.

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Job ID: 480-171343-2

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# **Detection Summary**

Client: Ashland LLC Job ID: 480-171343-2

Project/Site: Hercules Glens Falls 2Q20

Client Sample ID: P	TP-SB01_20200615				Lab Sample ID: 4	80-171343-1
Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Cyanide, Total	0.31 F1	0.010	0.0050	mg/L	1	Total/NA
Client Sample ID: M	W-OB23_20200616	Lab Sample ID: 480-171343-2				
Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Cyanide, Total	1.0	0.050	0.025	mg/L	59012B	Total/NA
Client Sample ID: M	W-OB19_20200616				Lab Sample ID: 4	80-171343-3
 Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Cyanide, Total	0.30	0.010	0.0050	mg/L	1 9012B	Total/NA
Client Sample ID: El	B02_20200615				Lab Sample ID: 48	0-171343-11
No Detections.						
Client Sample ID: D	UP01_20200615				Lab Sample ID: 48	0-171343-12
 Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac D Method	Prep Type
Cyanide, Total	0.30	0.010	0.0050	mg/L	1	Total/NA

This Detection Summary does not include radiochemical test results.

6/29/2020

**Client Sample Results** Client: Ashland LLC Job ID: 480-171343-2 Project/Site: Hercules Glens Falls 2Q20 Lab Sample ID: 480-171343-1 Client Sample ID: PTP-SB01 20200615 Date Collected: 06/15/20 15:10 **Matrix: Water** Date Received: 06/18/20 08:00 **General Chemistry** Analyte Result Qualifier RL **MDL** Unit Dil Fac D Prepared Analyzed 0.010 06/26/20 12:31 06/26/20 14:08 Cyanide, Total 0.31 F1 0.0050 mg/L Client Sample ID: MW-OB23 20200616 Lab Sample ID: 480-171343-2 Date Collected: 06/15/20 16:00 **Matrix: Water** Date Received: 06/18/20 08:00 **General Chemistry** Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac **Cyanide, Total** 1.0 0.050 0.025 mg/L 06/25/20 12:08 06/25/20 14:16 Client Sample ID: MW-OB19\_20200616 Lab Sample ID: 480-171343-3 Date Collected: 06/16/20 09:30 **Matrix: Water** Date Received: 06/18/20 08:00 **General Chemistry** Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 0.010 06/25/20 12:08 06/25/20 14:13 Cyanide, Total 0.30 0.0050 mg/L Lab Sample ID: 480-171343-11 Client Sample ID: EB02 20200615

RL

RL

0.010

0.010

**MDL** Unit

**MDL** Unit

0.0050 mg/L

0.0050 mg/L

D

D

Prepared

Prepared

06/26/20 12:31 06/26/20 14:24

06/26/20 12:31 06/26/20 14:25

Lab Sample ID: 480-171343-12

Result Qualifier

Result Qualifier

0.30

0.010 U

Date Collected: 06/15/20 12:03

Date Received: 06/18/20 08:00

Date Collected: 06/15/20 00:00

Date Received: 06/18/20 08:00

Client Sample ID: DUP01 20200615

**General Chemistry** 

**General Chemistry** 

Analyte

Analyte

**Cyanide, Total** 

Cyanide, Total

**Matrix: Water** 

**Matrix: Water** 

Dil Fac

Dil Fac

Analyzed

Analyzed

Client: Ashland LLC Job ID: 480-171343-2

Project/Site: Hercules Glens Falls 2Q20

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 480-537996/1-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA Analysis Batch: 538027 **Prep Batch: 537996** MB MB

Result Qualifier RL **MDL** Unit Analyzed Dil Fac Analyte Prepared Cyanide, Total 0.010 0.0050 mg/L 0.010 U 06/25/20 12:08 06/25/20 13:39

Lab Sample ID: LCS 480-537996/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Prep Batch: 537996 Analysis Batch: 538027** LCS LCS %Rec. Spike Analyte Added Result Qualifier Unit D %Rec Limits Cyanide, Total 0.400 0.358 mg/L 90 90 - 110

Lab Sample ID: LCS 480-537996/3-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 538027 Prep Batch: 537996** Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit Limits D %Rec 0.250 99 90 - 110 Cyanide, Total 0.247 mg/L

Lab Sample ID: 480-171343-3 MS Client Sample ID: MW-OB19\_20200616 **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 538027 Prep Batch: 537996** 

Spike MS MS %Rec. Sample Sample Added Analyte Result Qualifier Result Qualifier D %Rec Limits Unit

0.100

Lab Sample ID: MB 480-538238/1-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

0.393

mg/L

Analysis Batch: 538269 MB MB

0.30

Cyanide, Total

Analyte Result Qualifier RI **MDL** Unit Prepared Analyzed Dil Fac 0.010 06/26/20 12:31 06/26/20 14:02 Cyanide, Total 0.010 U 0.0050 mg/L

Lab Sample ID: LCS 480-538238/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 538269 Prep Batch: 538238** LCS LCS Spike %Rec.

Analyte Added Result Qualifier Unit D %Rec Limits Cyanide, Total 0.400 0.377 mg/L 90 - 110

Lab Sample ID: LCS 480-538238/3-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA Prep Batch: 538238 **Analysis Batch: 538269** Spike LCS LCS %Rec.

Analyte Added Result Qualifier Unit %Rec Limits Cyanide, Total 0.250 0.247 99 90 - 110 mg/L

Lab Sample ID: 480-171343-1 MS Client Sample ID: PTP-SB01\_20200615 **Matrix: Water** Prep Type: Total/NA **Analysis Batch: 538269** Prep Batch: 538238

Sample Sample Spike MS MS %Rec. Result Qualifier Result Qualifier Added Analyte Unit %Rec Limits 0.31 F1 0.385 F1 Cyanide, Total 0.100 mg/L 76 90 - 110

Eurofins TestAmerica, Buffalo

90

90 - 110

Prep Batch: 538238

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6/29/2020

# **QC Sample Results**

Job ID: 480-171343-2 Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q20

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: 480-171343-1 MSD Client Sample ID: PTP-SB01\_20200615

**Matrix: Water** 

**Prep Type: Total/NA** Analysis Batch: 538269 Prep Batch: 538238 MSD MSD RPD Sample Sample Spike %Rec.

Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 90 - 110 0.31 F1 0.100 95 5 15 Cyanide, Total 0.404 mg/L

# **QC Association Summary**

Client: Ashland LLC Job ID: 480-171343-2

Project/Site: Hercules Glens Falls 2Q20

# **General Chemistry**

### **Prep Batch: 537996**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-171343-2	MW-OB23_20200616	Total/NA	Water	9012B	_
480-171343-3	MW-OB19_20200616	Total/NA	Water	9012B	
MB 480-537996/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-537996/2-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 480-537996/3-A	Lab Control Sample	Total/NA	Water	9012B	
480-171343-3 MS	MW-OB19_20200616	Total/NA	Water	9012B	

### **Analysis Batch: 538027**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-171343-2	MW-OB23_20200616	Total/NA	Water	9012B	537996
480-171343-3	MW-OB19_20200616	Total/NA	Water	9012B	537996
MB 480-537996/1-A	Method Blank	Total/NA	Water	9012B	537996
LCS 480-537996/2-A	Lab Control Sample	Total/NA	Water	9012B	537996
LCS 480-537996/3-A	Lab Control Sample	Total/NA	Water	9012B	537996
480-171343-3 MS	MW-OB19_20200616	Total/NA	Water	9012B	537996

### Prep Batch: 538238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-171343-1	PTP-SB01_20200615	Total/NA	Water	9012B	
480-171343-11	EB02_20200615	Total/NA	Water	9012B	
480-171343-12	DUP01_20200615	Total/NA	Water	9012B	
MB 480-538238/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-538238/2-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 480-538238/3-A	Lab Control Sample	Total/NA	Water	9012B	
480-171343-1 MS	PTP-SB01_20200615	Total/NA	Water	9012B	
480-171343-1 MSD	PTP-SB01_20200615	Total/NA	Water	9012B	

### Analysis Batch: 538269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-171343-1	PTP-SB01_20200615	Total/NA	Water	9012B	538238
480-171343-11	EB02_20200615	Total/NA	Water	9012B	538238
480-171343-12	DUP01_20200615	Total/NA	Water	9012B	538238
MB 480-538238/1-A	Method Blank	Total/NA	Water	9012B	538238
LCS 480-538238/2-A	Lab Control Sample	Total/NA	Water	9012B	538238
LCS 480-538238/3-A	Lab Control Sample	Total/NA	Water	9012B	538238
480-171343-1 MS	PTP-SB01_20200615	Total/NA	Water	9012B	538238
480-171343-1 MSD	PTP-SB01 20200615	Total/NA	Water	9012B	538238

Job ID: 480-171343-2

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q20

Client Sample ID: PTP-SB01\_20200615

Date Collected: 06/15/20 15:10 Date Received: 06/18/20 08:00

Lab Sample ID: 480-171343-1

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			538238	06/26/20 12:31	CRK	TAL BUF
Total/NA	Analysis	9012B		1	538269	06/26/20 14:08	CRK	TAL BUF

Client Sample ID: MW-OB23\_20200616

Date Collected: 06/15/20 16:00 Date Received: 06/18/20 08:00

Lab Sample ID: 480-171343-2

**Matrix: Water** 

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			537996	06/25/20 12:08	CRK	TAL BUF
Total/NA	Analysis	9012B		5	538027	06/25/20 14:16	JRF	TAL BUF

Client Sample ID: MW-OB19\_20200616

Date Collected: 06/16/20 09:30 Date Received: 06/18/20 08:00

Lab Sample ID: 480-171343-3

**Matrix: Water** 

Prepared Batch Dilution Batch Batch **Prep Type** Туре Method Run Factor Number or Analyzed Analyst Lab Total/NA 9012B 537996 06/25/20 12:08 CRK TAL BUF Prep Total/NA Analysis 9012B 1 538027 06/25/20 14:13 JRF TAL BUF

Client Sample ID: EB02 20200615

Date Collected: 06/15/20 12:03 Date Received: 06/18/20 08:00

Lab Sample ID: 480-171343-11 **Matrix: Water** 

Batch **Batch** Dilution Batch Prepared **Prep Type** Method Factor or Analyzed Analyst Type Run Number Lab Prep Total/NA 9012B 538238 06/26/20 12:31 CRK TAL BUF

Date Received: 06/18/20 08:00

Total/NA	Analysis 9012B	1	538269 06/26/20 14:24 CRK	TAL BUF
Client San	nple ID: DUP01_20200615		Lab Sai	mple ID: 480-171343-12
<b>Date Collect</b>	ed: 06/15/20 00:00			Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			538238	06/26/20 12:31	CRK	TAL BUF
Total/NA	Analysis	9012B		1	538269	06/26/20 14:25	CRK	TAL BUF

#### **Laboratory References:**

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

Eurofins TestAmerica, Buffalo

# **Accreditation/Certification Summary**

Client: Ashland LLC Job ID: 480-171343-2

Project/Site: Hercules Glens Falls 2Q20

### Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	Identification Number	<b>Expiration Date</b>
New York	NELAP	10026	04-02-21

# Laboratory: Eurofins TestAmerica, Savannah The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	<b>Expiration Date</b>
New York	NELAP	10842	04-01-21

# **Method Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q20

MethodMethod DescriptionProtocolLaboratory9012BCyanide, Total andor AmenableSW846TAL BUF9012BCyanide, Total and/or Amenable, DistillationSW846TAL BUF

#### **Protocol References:**

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

#### **Laboratory References:**

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

Job ID: 480-171343-2

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# **Sample Summary**

Client: Ashland LLC

Project/Site: Hercules Glens Falls 2Q20

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-171343-1	PTP-SB01_20200615	Water	06/15/20 15:10	06/18/20 08:00	
480-171343-2	MW-OB23_20200616	Water	06/15/20 16:00	06/18/20 08:00	
480-171343-3	MW-OB19_20200616	Water	06/16/20 09:30	06/18/20 08:00	
480-171343-11	EB02_20200615	Water	06/15/20 12:03	06/18/20 08:00	
480-171343-12	DUP01_20200615	Water	06/15/20 00:00	06/18/20 08:00	

Job ID: 480-171343-2

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Special Instructions/Note: - Na2SO3 - Na2SO3 - Na2S2O3 None AsNaO2 ETA # Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client

Oisposal By Lab

Mon 680-115613-44213.2 MS/mSD MSIMSI reservation Codes 080 H - Ascorbic Acid 1657 Page 2 of 6 Nitric Acid NaHSO4 G - Amchlor I - Ice J - DI Water - HCL - NaOH MeOH. 0/18170 6-17-20 Total Number of containers 480-171343 Chain of Custody #224 Analysis Requested Special Instructions/QC Requirements E-Mail: eddie.barnett@testamericainc.com ooler Temper Parden Grap 1 NRR NAR XXX XXX XXX NAXX NAN A 5020A - Dissolved Metals XZZ X Z Z Lab PM. Barnett, Eddie T Chain of Custody Record Perform MS/MSD (Yes or No) EURENTA Water Water Water Water Water Water Water Matrix Preservation Code Water Water Water Water Radiological Lately In Forther G=grab) 254 L3P( 255 Sample (C=comp, 1730 Type 1652 0 0 00 0 0 1105 U115/20 12.03 116/20 0930 U/17/20 0950 1510 2/15/20 1600 JUN 20 1600 11/10/20 1325 8501 aztella 111/20 1522 Sample 1501 02/FIJA Time Date I'me Date I'me Date I'me Unknown 4-11-2020 (AT Requested (days) **Date Requested:** 02/5/10 U/17/20 Sample Date STY PO814392 Project # 68000956 **Task** 400 Poison B -20200016 Skin Irritant MW-0823-202001615 MW - 01814-20200016 MW-0824-20200417 MW-0825-20201017 717-SBOI-20200US iverable Requested: I, II, III, IV, Other (specify Sump-B-202001017 AW-184-20200616 AW-CM-202001616 9W-M14-20200017 -2020au15 Custody Seal No. Phone: 716-691-2600 Fax: 716-691-7991 Flammable Guns Falls Possible Hazard Identification Hercules Glens Falls O&M 2020 MW-01819. mpty Kit Relinquished by 5200 Blazer Parkway DS-4 evondracek@ashland.com Amherst, NY 14228-2298 Custody Seals Intact: Sample Identification Client Information Non-Hazard 614-790-6146(Tel) Mr. Jim Vondracek yd baysinbu Ashland LLC OH, 43017 Dublin

Environment Testing

🔆 eurofins

Albany

Eurofins TestAmerica, Buffalo

10 Hazelwood Drive

13 14

S - H2SO4 T - TSP Dodecahydra U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Special Instructions/Note: Compay N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 Months Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) 680-115613-44213.1 Page 4 of 6-2 1657 Preservation Codes G - Amchlor H - Ascorbic Acid C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH I - Ice J - DI Water K - EDTA Archive For Sate/Time Total Number of containers ethod of Shipment Disposal By Lab Analysis Requested Cooler Temperature(s) °C and Other Remarks Special Instructions/QC Requirements E-Mail: eddie.barnett@testamericainc.com Return To Client PARTO SAMPARENED by Received by XXX XXX XXX XXX XXX NNN Lab PM: Barnett, Eddie T 9012B - Cyanide, Total EURINSTA Company Perform MS/MSD (Yes or No) G=grab) BT=Tissue, A=Air (W=water, S=solid, O=waste/oil, Water Water Water Water Water Water Water Water Preservation Code: Water Water Water Matrix Radiological Kotelyn Fish (C=comp, (58L) 984 6782 1730 Sample 2 DO 183 U(17/20 (330 JEHZO 1423 1120 Sample 21/2/2/12/5 Time - 02/41/2 Date/Time | 2020 STO Poison B Unknown Date/Time TAT Requested (days): Due Date Requested: 0/10/20 U 15/20 Sample Date Project #: 68000956 SSOW#. PO814392 Task 400 Skin Irritant eliverable Requested: I, III, III, IV, Other (specify) TUROS-20200617 1804-2020Duly FW-185-20200417 Custody Seal No. EB03-20200616 2NPOI-2020CM15 Phone: 716-691-2600 Fax: 716-691-7991 - Flammable GLERAS FEULS Possible Hazard Identification Hercules Glens Falls O&M 2020 Empty Kit Relinquished by 5200 Blazer Parkway DS-4 evondracek@ashland.com Custody Seals Intact: Sample Identification Client Information A Yes A No Non-Hazard 614-790-6146(Tel) Mr. Jim Vondracek linquished by: d paysinbu Ashland LLC State, Zip. OH, 43017 Dublin

eurofins | Environment Testing

#224

Chain of Custody Record

Eurofins TestAmerica, Buffalo

Amherst, NY 14228-2298

10 Hazelwood Drive

Albany

Client: Ashland LLC Job Number: 480-171343-2

Login Number: 171343 List Source: Eurofins TestAmerica, Buffalo

List Number: 2

Creator: Yeager, Brian A

Creator. reager, briair A		
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	

Brian Jankauskas, P.E. Annual GSMR for the Pretreatment Plant Area November 3, 2020



Enclosure 3 Tier II Validation Reports

EHS Validation Report Number: 305

Former Ciba Geigy Facility Queensbury, New York

Analysis performed by: ALS Environmental, Holland, Michigan

Sample Delivery Group

(SDG): 20061611

Analysis: General

Chemistry

Review Level: Tier II



Report Date: July 2, 2020



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EHS Validation Report Number: 305 – Former Ciba Geigy Facility Table of Contents



# Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) Method by OIA 1677 for free cyanide. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Free cyanide analysis
20061611	20061611-01A	SG-7_20200615	Water	6/15/2020	x
20061611	20061611-02A	SG-11_20200615	Water	6/15/2020	х
20061611	20061611-03A	DUP02_20200615	Water	6/15/2020	х
20061611	20061611-04A	EB01_20200615	Water	6/15/2020	х



### 1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

### 1.1 Validation Qualifiers

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

EHS Validation Report Number: 305 – Former Ciba Geigy Facility Sample Custody and Receipt



# 2 Sample Custody and Receipt

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

EHS Validation Report Number: 305 – Former Ciba Geigy Facility Assessment Summary and Data Usability



# 3 Assessment Summary and Data Usability

In this SDG, no quality control (QC) excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.

EHS Validation Report Number: 305 – Former Ciba Geigy Facility General Chemistry Analysis



# 4 General Chemistry Analysis

### 4.1 Preservation and Holding Times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

Method	Matrix	Preservation	Holding time	
Free cyanide by OIA 1677	Water	NaOH to pH > 12	14 days	

### 4.2 Blanks

No sample results were qualified due to blank contamination. Free cyanide was detected in the method blank at a concentration less than the reporting limit, However, results for all associated field samples were non-detect, so no qualification was needed.

### 4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

### 4.4 Laboratory Duplicate Analysis

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

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

MS/MSD analysis was performed on sample 20061611-02. Recoveries were less than the laboratory's lower acceptance limits, but within the limits applied during validation (75 - 125%), Therefore, no qualification was needed.

### 4.6 Field Duplicates

Acceptance criteria were met. One parent sample – field duplicate pair was included in this sample delivery group. Results for both parent and duplicate were non-detect.

#### 4.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats
EHS Support

EHS Validation Report Number: 306

Former Ciba Geigy Facility Queensbury, New York

Analyses performed by: TestAmerica, Buffalo, New York Sample Delivery Group (SDG): 480-171343-2 Analyses: General

Chemistry

Review Level: Tier II



Report Date: July 2, 2020



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EHS Validation Report Number: 306 – Former Ciba Geigy Facility Table of Contents



# Sample Summary

Water samples were collected at the Former Ciba Geigy Facility in Queensbury, New York and were analyzed by Environmental Protection Agency (EPA) SW-846 Method 9012B for cyanide. Samples included in this sample delivery group (SDG), and in this data validation report, are listed in the table below.

SDG	Lab Sample ID	Field Sample ID	Sample Matrix	Sample Collection Date	Cyanide analysis
480-171343-2	480-171343-1	PTP-SB01_20200615	Water	6/15/2020	X
480-171343-2	480-171343-2	MW-OB23_20200616	Water	6/15/2020	x
480-171343-2	480-171343-3	MW-OB19_20200616	Water	6/16/2020	X
480-171343-2	480-171343-11	EB02_20200615	Water	6/15/2020	X
480-171343-2	480-171343-12	DUP01_20200615	Water	6/15/2020	X



### 1 Introduction

Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While QC is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

Data validation includes a review of reported results and supporting documentation in the laboratory report. Based on this evaluation, qualifiers may be added, deleted, or modified. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

### 1.1 Validation Qualifiers

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

EHS Validation Report Number: 306 – Former Ciba Geigy Facility Sample Custody and Receipt



# 2 Sample Custody and Receipt

All samples were received in good condition and properly preserved. The chain of custody was properly completed except that the relinquishing and receiving signatures associated with the second custody transfer do not appear on the same line. It is assumed that custody was maintained.

EHS Validation Report Number: 306 – Former Ciba Geigy Facility Assessment Summary and Data Usability



# 3 Assessment Summary and Data Usability

In this SDG, no QC (quality control) excursions encountered led to qualification or rejection of data. Results reported in this SDG are considered usable. Please refer to report below for specific QC information.



## 4 General Chemistry Analysis

### 4.1 Preservation and Holding Times

Acceptance criteria were met. Relevant preservation and holding time requirements are presented in the following table.

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

#### 4.2 Blanks

Acceptance criteria were met. No detections were reported in the lab method blanks nor in the equipment blank associated with this data set.

### 4.3 Laboratory Control Sample (LCS)

Acceptance criteria were met.

### 4.4 Laboratory Duplicate Analysis

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

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

Matrix spike analysis was performed on sample 480-171343-3; the recovery was acceptable. MS/MSD analysis was performed on sample 480-171343-1. The MS recovery was less than the laboratory's lower acceptance limit but was within the limits applied during this validation (75 - 125%). Therefore, no qualification was needed; the flag applied by the laboratory has been removed.

## 4.6 Field Duplicates

Acceptance criteria, shown in the table below, were met. One field duplicate- parent sample pair was included in this sample delivery group.

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

EHS Validation Report Number: 306 – Former Ciba Geigy Facility General Chemistry Analysis



## 4.7 Additional Notes

NA: No additional notes to report.

Validation performed by: Amy Coats EHS Support