November 30, 2016

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

RE: 2016 Groundwater and Surface Water Monitoring Report for the Pretreatment Plant at the Former Ciba-Geigy Facility EPA ID NYD002069748 / NYSDEC Site No.: 557011

Dear Mr. Jankauskas,

On behalf of Ashland LLC (Ashland) and BASF Corporation, EHS Support LLC (EHS Support) is submitting this Groundwater and Surface Water Monitoring Report for the Pretreatment Plant (PTP) area at the former Ciba-Geigy Corporation (CIBA) pigments manufacturing facility located at 89 Lower Warren Street in Queensbury, NY. Groundwater monitoring was conducted at the PTP (also referred to herein as the Site) in July 2016 pursuant to the Groundwater and Surface Water Monitoring Plan (GSMP), dated July 2015, previously submitted to and approved by the New York State Department of Environmental Conservation (NYSDEC). Note that the GSMP for the PTP area was also included in an Appendix to the *Remedy Optimization Plan* for the Main Plant Site, dated August 2016, but was unchanged from the July 2015 GSMP.

In accordance with the GSMP, annual groundwater and surface water monitoring was completed at the Site in July 2016, using the monitoring locations illustrated on **Figure 1** and the schedule presented in **Table 1**. A summary of the sampling activities, laboratory analysis, and results from the monitoring event is presented below.

Water Level Gauging

Water levels were measured in 10 wells identified in **Table 1** on July 25, 2016. The water level at surface water gauge SG-11, located in the Glens Falls Feeder Canal (canal) was not measured, because the canal was in the process of being drained. The water level at surface water gauge SG-7, located in a stream adjacent to the canal, was not measured, because the stream was dry at the time of sampling event.

Depth-to-water measurements and groundwater elevation data are provided in **Table 2**. Based on the groundwater elevation data, groundwater generally flows to the east across the site, with localized easterly and southeasterly flow in the southwest corner of the site. Due to the thin saturated zone above the lacustrine clay, lateral groundwater flow in the overburden is influenced by the configuration and undulations of the surface of the lacustrine clay beneath the site. Water accumulated in the wells was limited, with no water detected in MW-OB20, and a maximum water column of 5.17 feet in well MW-OB17. These measurements are consistent with historical gauging data. Groundwater elevations and potentiometric surface lines based on the July 2016 monitoring data are illustrated on **Figure 2**.

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Groundwater and Surface Water Sampling and Analysis

Groundwater and surface water sampling was conducted on July 25, 2016. Groundwater purging and sampling were completed using low-flow sampling methods as detailed in the GSMP. Peristaltic pumps were used to sample all wells. MW-OB20 was not sampled because the well was dry, and no surface water sample was collected at SG-7 because the stream was dry.

Due to limited water column and low water yield, MW-OB19 purged dry; however, the well recharged within 2 hours and sampling was performed later the same day. Purge flow rates and volumes removed are summarized in **Table 2**. Water quality parameters, including temperature, pH, conductivity, dissolved oxygen, turbidity, and oxidation-reduction potential were monitored during purging and recorded on field purge and sampling log forms. Barometric pressure was also recorded on the field logs. Copies of the field logs are included in **Attachment 1**. Groundwater quality field parameters were recorded on the attached field logs, and final readings prior to sampling are summarized in **Table 3**.

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

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

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

- Total cyanide by EPA Method 9012B on unfiltered groundwater and surface water samples collected in plastic sample bottles containing sodium hydroxide preservative
- Free cyanide by USEPA Method OIA-1677 on groundwater and surface water samples. Sample collection and preservation procedures included:
    - Testing sample for presence of sulfide by pouring groundwater into glass vial with lead acetate test strip. If there was no change in test strip color, sample was collected in a 40 mL vial with sodium hydroxide preservative and subject to a 14-day hold time. No samples collected at this Site indicated the presence of sulfide. Therefore, a 14-day hold time applied to all samples.
    - If strip(s) had turned black (indicating presence of sulfide), the sample(s) would have been collected in 40 mL vial(s) without preservative and subject to a 24-hour hold time.

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

Quality Control Sampling and Analysis

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

- One duplicate groundwater sample (from MW-OB21)

- One duplicate surface water sample (from SG-11)
- Two matrix spike/matrix spike duplicate (MS/MSD) samples, one for groundwater (from MW-OB21) and one for surface water (from SG-11)
- One equipment/field blank (EB_20160725), collected after sampling wells
- As with the original samples, groundwater QC samples were collected using disposable/dedicated tubing, and surface water QC samples were collected using clean laboratory-provided bottles.
- QC samples were analyzed by the same methods used for the original samples.

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

Data Quality Review

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

The laboratory data was evaluated according to the quality assurance and quality control (QA/QC) requirement of NYSDEC Analytical Services Protocols (ASP). The DUSR report concluded that the analytical data are considered technically defensible and completely usable in their present form. A copy of the DUSR is included in **Attachment 3**.

Groundwater and Surface Water Analysis Results

The groundwater analytical results show total cyanide was detected in groundwater from each monitoring well sampled. Concentrations detected are below the groundwater GA standard of 200 micrograms per liter (µg/L) except at MW-OB17 and MW-OB23 (see **Table 3**). The GA standard is protective for fresh groundwater as a drinking water source. Since the overburden groundwater on-Site comprises perched water with very low yield, is not in use, and would not support extraction for beneficial use, comparison to the GA standard (applicable for drinking water source) is made for reference only pursuant to the DER-10 Guidelines[1]. Cyanide was not detected in surface water.

Free cyanide was detected in samples from three wells, MW-OB17 (2.6 µg/L), MW-OB18 (3.6 µg/L), and MW-OB23 (11 µg/L). Free cyanide was not detected in groundwater off-site (MW-OB21) or in surface water (see **Table 3**).

Historical analytical data available for total cyanide in groundwater are summarized in **Table 5**. Prior to July 2015, groundwater sampling at the site was conducted using 3-volume purge and sampling techniques, and free cyanide analysis was not conducted. Based on the available historical data, the highest concentrations of cyanide (as total cyanide) in groundwater were detected in the central area of the site at wells MW-OB23 and MW-OB17, and immediately adjacent to the historical wastewater tank at MW-OB19 with concentrations declining downgradient and along the site boundary. **Figures 3A** through **3G** show historical total cyanide concentrations in groundwater over time measured at wells on-Site and

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

off-Site. Concentrations are declining or stable, exhibiting total cyanide concentration trends that are below or near the GA standard. At well MW-OB23 and its immediate vicinity, the historical data show a slowly decreasing first-order trend toward the GA standard.

The July 2016 monitoring data are consistent with historical data and show elevated cyanide concentrations (above the GA standard) are localized in the central area of the Site; groundwater concentrations at the Site downgradient boundary and off-site are below the GA standard; and cyanide is not present in surface water in the canal. Given groundwater on-Site is not suitable for beneficial use, and free cyanide is not detected in groundwater at the site boundary, in nearby surface waters, or off-Site, residuals on-Site pose no risk to human health or the environment.

Closing

I, Cassie R. Reuter, P.E., certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Groundwater and Surface Water Monitoring Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

If you have questions or comments regarding this report or the attached documents, please feel free to contact me at (608) 851-0626 for discussion.

Sincerely,

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

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Attachment 3 – Data Usability Summary Report

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

TABLES

Table 1
Sampling Event Analysis Schedule
Pretreatment Plant Annual Groundwater Surface Water Sampling - July 2016

Annual Gauge Only	Annual Gauge & Sample	Field Parameters[1]	Total Cyanide and Free Cyanide
Overburden Wells			
	MW-OB17	1	1
	MW-OB18	1	1
	MW-OB19	1	1
	MW-OB20	1	1
	MW-OB21	1	1
	MW-OB23	1	1
IG-1	Wells to be gauged only		
IG-2			
P-1			
P-11			
P-12			
Surface Water Samples			
	SG-7 [2]	1	1
	SG-11 [3]	1	1

Notes:
1 - Field parameters to include pH, temperature, dissolved oxygen, redox potential, electrical conductivity, turbidity and barometric pressure
2 - Gauging and sampling could not be performed at SG-7 in July 2016, because stream was dry.
3 - Gauging was not performed at SG-11 in July 2016, because canal was in process of being drained. However, a surface water sample was collected at SG-11.

Table 2
Gauging and Purge Data Summary
Pretreatment Plant Annual Groundwater Surface Water Sampling - July 2016

Well Name	Well Diam. (in)	Screen Interval (ft bgs)	7/25/16 Total Well Depth (ft btoc)	7/25/16 DTW (ft btoc)	TOC Elev (ft amsl)	7/25/16 GW Elevation (ft amsl)	7/25/16 Water Column (ft)	Pump Intake Depth (ft btoc)	Pump Rate (mL/min)	Pre-Purge WL (ft btoc)	Post Purge WL (ft btoc)	Post Purge draw down (ft)	Purged Vol (gal)	Pump Type
OVERBURDEN MONITORING WELLS														
MW-OB17	2	5 - 11	13.56	8.39	289.91	281.52	5.17	11.5	250	8.42	8.59	0.17	3.1	P
MW-OB18	2	4 - 9	12.52	9.46	287.69	278.23	3.06	11.5	140	9.51	11.51	2.0	0.57	P
MW-OB19	2	5 - 10	9.45	8.35	287.82	279.47	1.10	9	100	8.35	9.64	1.29	1.0	P
MW-OB20	2	4.5 - 8.5	10.20	DRY	290.36	dry	dry	dry	dry	dry	dry	dry	dry	dry
MW-OB21	2	4.5 - 14.5	16.65	13.40	284.03	270.63	3.25	15	125	13.47	15.11	1.6	0.4675	P
MW-OB23	2	3 - 6.5	8.22	6.22	287.05	280.83	2.00	8	150	6.19	7.32	1.13	2.0	P
P-1	1	3 - 8	7.90	6.21	287.73	281.52	1.69	ns	ns	ns	ns	ns	ns	ns
P-11	1	6 - 11	12.79	9.01	290.37	281.36	3.78	ns	ns	ns	ns	ns	ns	ns
P-12	1	3 - 8	9.52	7.11	287.91	280.80	2.41	ns	ns	ns	ns	ns	ns	ns
IG-1	-	-	8.61	6.88	288.79	281.91	1.73	ns	ns	ns	ns	ns	ns	ns
IG-2	-	-	11.18	8.49	289.77	281.28	2.69	ns	ns	ns	ns	ns	ns	ns
SURFACE WATER LOCATIONS				Gauge Bottom										
SG-11	-	n/a		n/a*	n/a	n/a		grab						
SG-7	-	n/a		n/a **	n/a	n/a		grab						

Notes:
"-" indicates data not available
* = water level not recorded because canal was in process of being drained
** = water level not recorded because stream was dry

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

Table 3
Groundwater and Surface Water Analytical and Field Parameter Results
Pretreatment Plant Annual Groundwater Surface Water Sampling - July 2016

Well ID	Sample ID	Date	Temp (degC)	pH (s.u.)	Conductivity (mS/cm)	DO (mg/l)	Turbidity (NTU)	ORP (mV)	Cyanide (total) (µg/l)		Cyanide (Free) (µg/l)	
Groundwater Quality Standard (GA)[1]									200		n/a	
MW-OB17	MW-OB17_20150723	07/23/15	18.36	6.97	0.49	3.18	12.7	111	182		2	UJ
MW-OB17	MW-OB17_20160725	07/25/16	22.24	6.46	0.379	0.92	2	185	**370**		2.6	
MW-OB18*	MW-OB18_20150723	07/23/15	16.46	7.12	1.10	6.12	0.5	155	102		2	UJ
MW-OB18	MW-OB18_20160725	07/25/16	19.37	7.42	0.575	0.18	1.8	206	57		3.6	
MW-OB19*	MW-OB19_20150724	07/24/15	14.45	6.86	0.358	0.91	81	-29	182		2	UJ
MW-OB19*	DUP-P1_20150724	07/24/15	-	-	-	-	-	-	162		2	UJ
MW-OB19	MW-OB19_20160725	07/25/16	20.51	7.09	0.297	4.01	0	-18	140		2	UJ
MW-OB21*	MW-OB21_20150723	07/23/15	14.75	6.65	0.380	2.79	17.5	103	119		2	UJ
MW-OB21	MW-OB21_20160725	07/25/16	17.54	6.59	0.528	0.08	1.5	80	96		2	U
MW-OB21	DUP2_20160725	07/25/16	-	-	-	-	-	-	97		2	UJ
MW-OB23*	MW-OB23_20150723	07/23/15	20.83	6.73	0.684	0.94	1.6	-23	**1800**		7.8	J
MW-OB23	MW-OB23_20160725	07/25/16	19.24	6.59	0.539	0.07	1.5	-23	**2500**		11	
Blank	EB_20150724PTP	07/24/15	n/a	n/a	n/a	n/a	n/a	n/a	10	U	n/a	
Blank	EB_20160725	07/25/16	n/a	n/a	n/a	n/a	n/a	n/a	10	U	2	U
Surface Water Quality Standards[1]									9000 H(FC)		5.2 A(A) / 22 A(C)	
SG-7**	SG-7_20150729	07/29/15	25.98	7.46	2.46	5.54	8	120	10	UJ	2	UJ
SG-11	SG-11_20150729	07/29/15	26.78	8.02	0.095	68	1.3	12.54	10	UJ	2	UJ
SG-11	DUP-P2_20150729	07/29/15	-	-	-	-	-	-	10	UJ	2	UJ
SG-11	SG-11_20160725	07/25/16	26.35	7.21	0.102	6.07	1.1	153	10	U	2	UJ
SG-11	DUP1_20160725	07/25/16	-	-	-	-	-	-	10	U	2	U

Notes:

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

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

** Sample not collected in 2016; stream was dry

Bold value indicates concentration above water quality standard

Temp (degC) - Temperature (degrees Celsius)

s.u. - standard units

mS/cm -milliseimens per centimeter

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

NTU - nephelometric turbidity units

ORP (mV) - oxidation reduction potential (millivolts)

µg/L - micrograms per liter

U - indicates not detected above laboratory reporting limits

J - indicates result is estimated

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

Table 4
Laboratory Analytical Method Summary
Pretreatment Plant Annual Groundwater Surface Water Sampling - July 2016

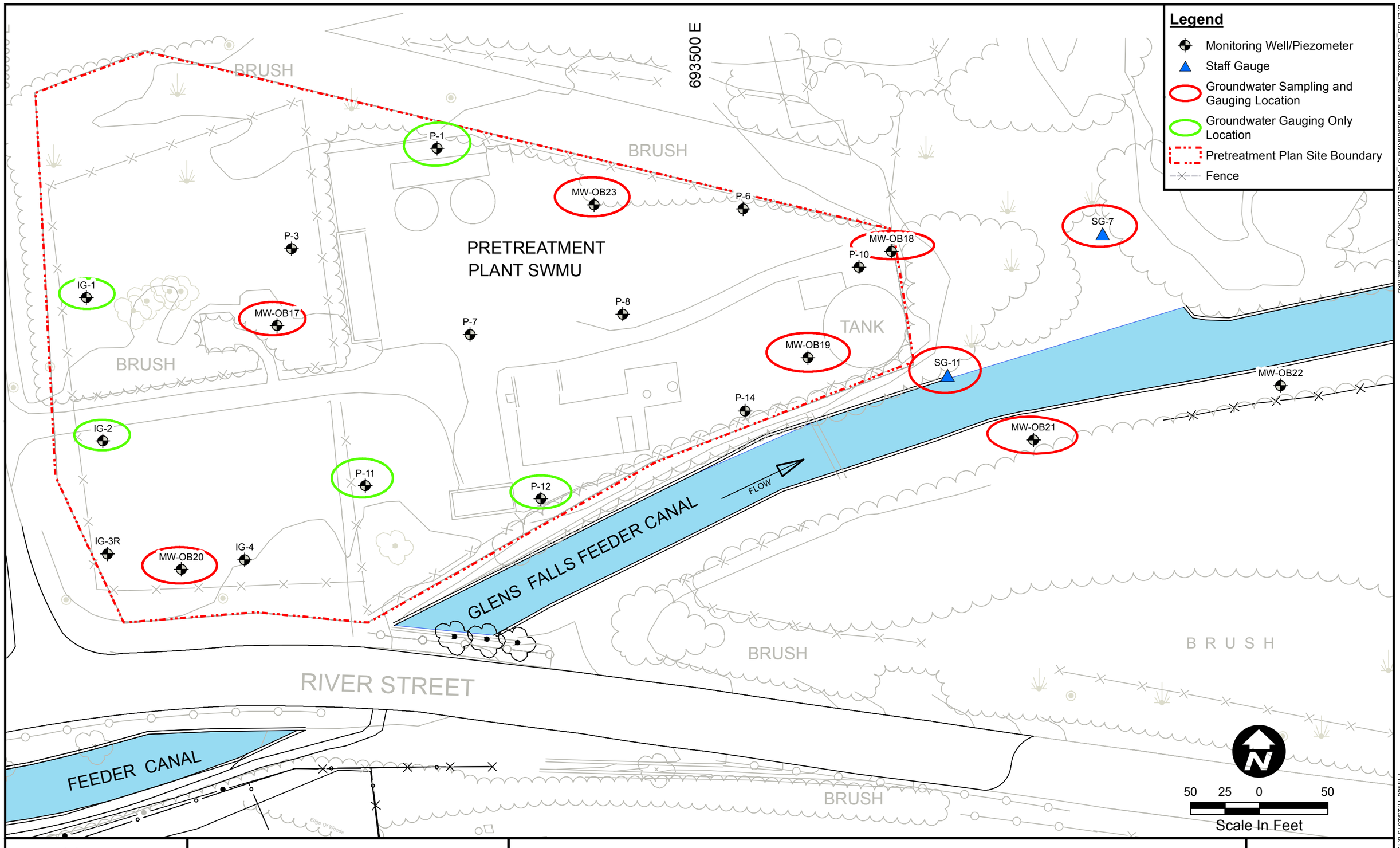
Analyte	Method Number	Media	Anticipated Reporting Limit (µg/L)	Sample Container Type	Container Volume (each in ml)*	No. Containers per sample	Preservation	Holding Time
Test America								
Total Cyanide	SW846 9012B	Water	10	Plastic bottle	250	1	NaOH to pH>12, Cool, < 6 deg. C.	14 Days
ALS Holland			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

Table 5
Historical Total Cyanide Concentration Data (in mg/L)
Pretreatment Plant Annual Groundwater Surface Water Sampling - July 2016

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

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

FIGURES



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

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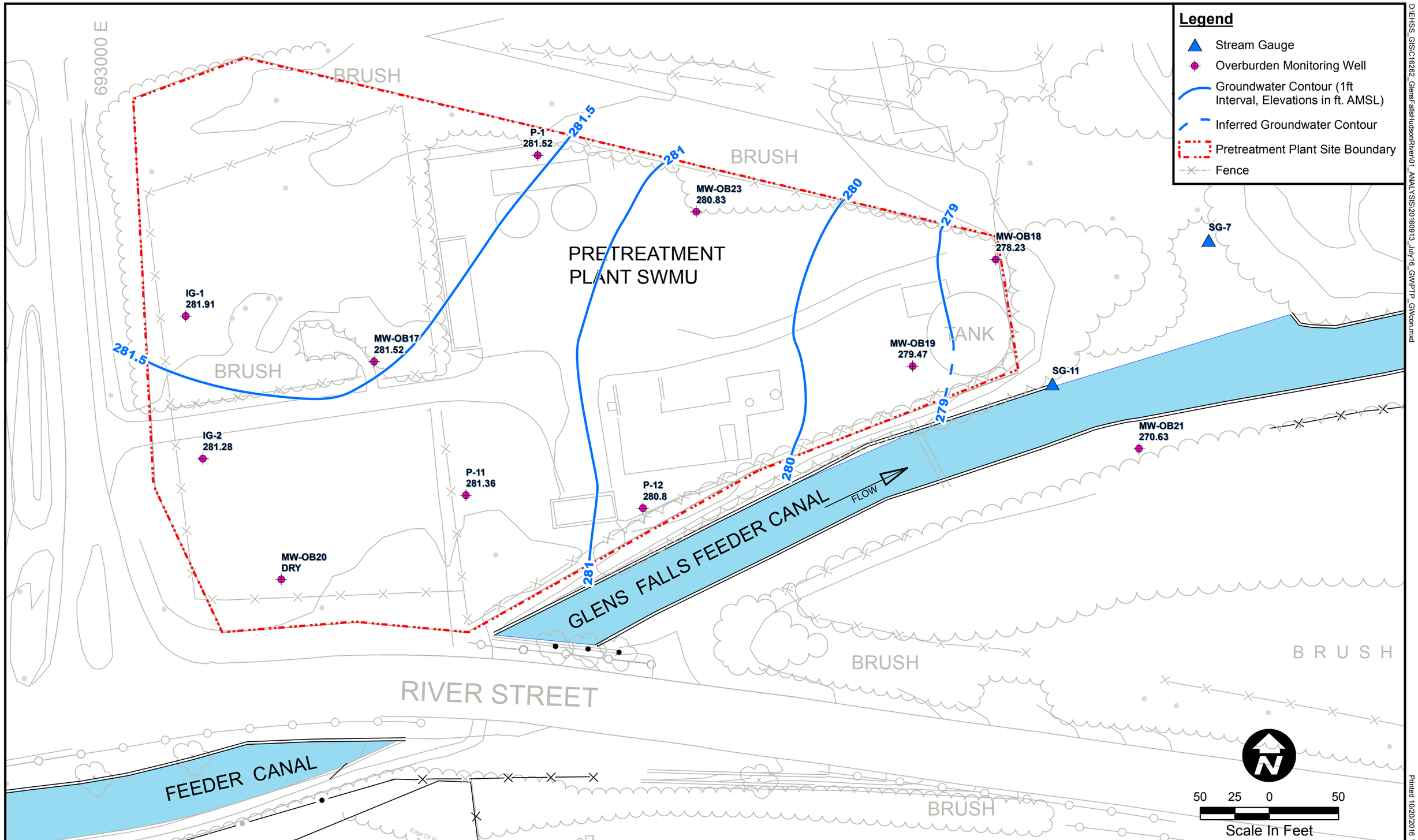

EHS Support *consider it done*	**ASHLAND** **FORMER CIBA-GEIGY / HERCULES SITE** **GLENS FALLS, NY**	**GROUNDWATER ELEVATION CONTOUR** **OVERBURDEN AT PRETREATMENT PLANT JULY 2016**	**FIGURE 2**

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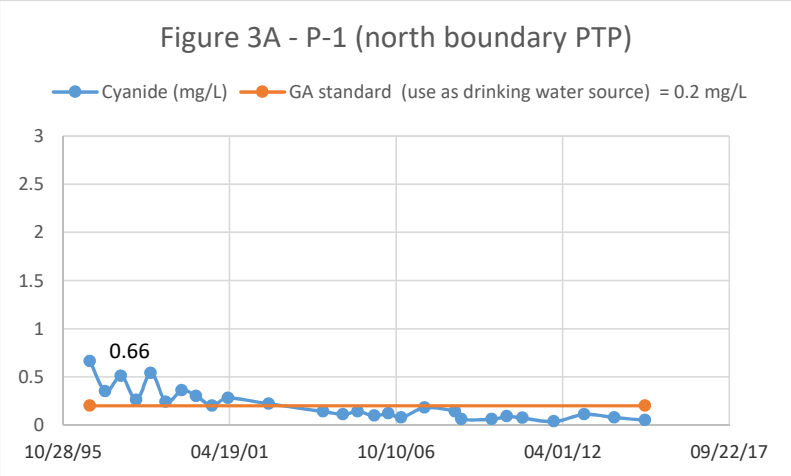
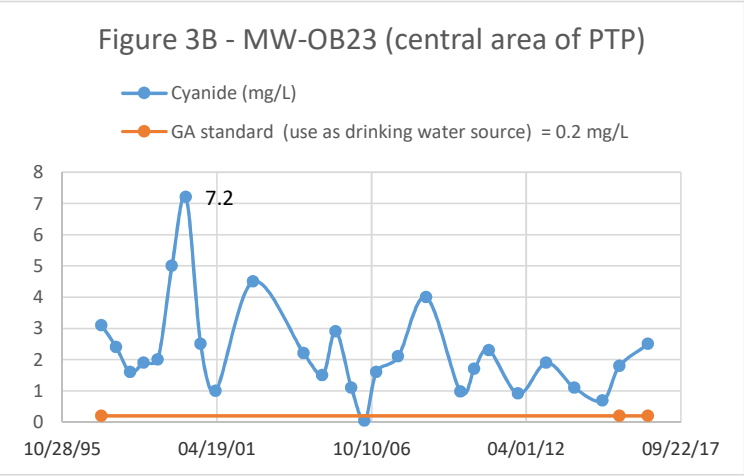
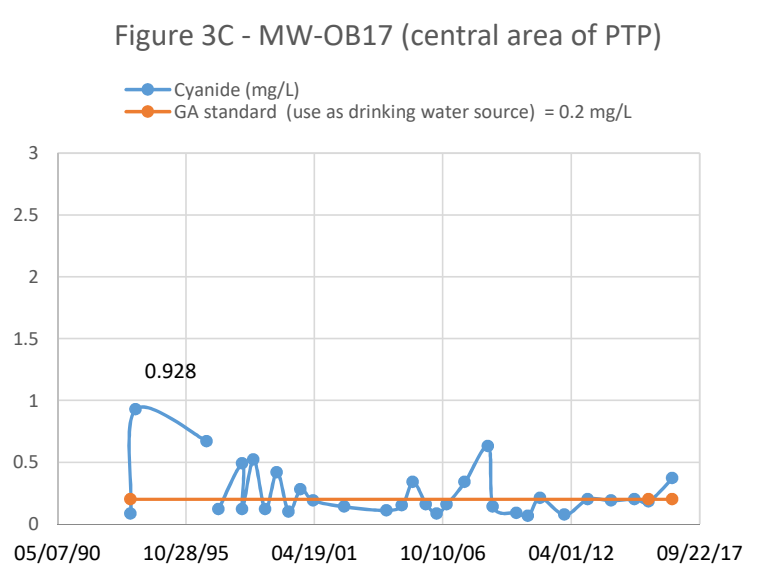
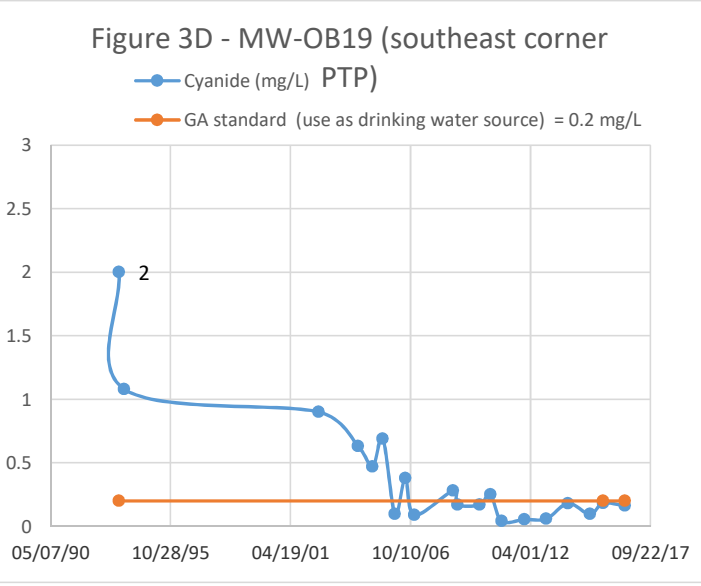
Figures 3A - 3D
Cyanide Concentrations in Groundwater versus Time
Pretreatment Plant Annual Groundwater & Surface Water Sampling - July 2016

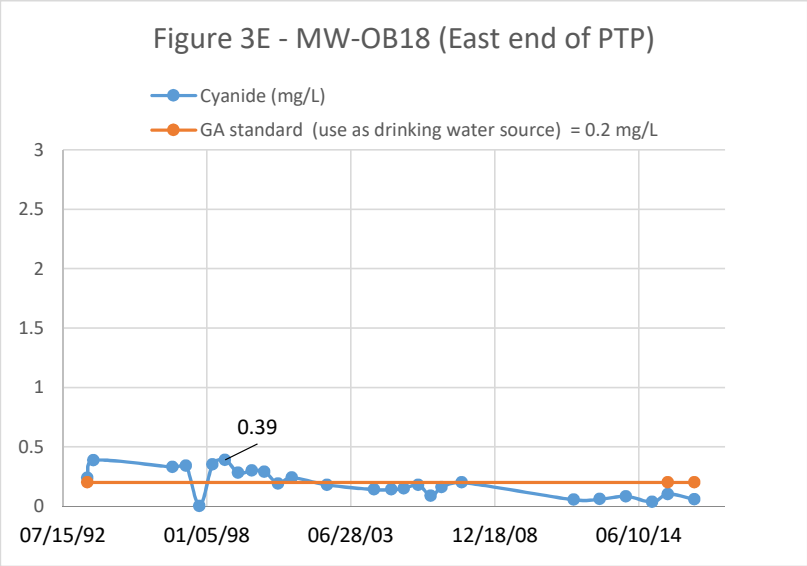


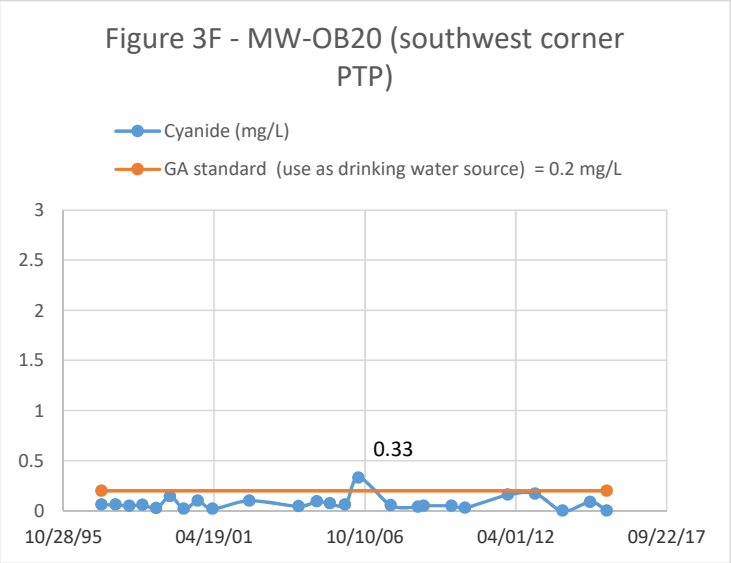


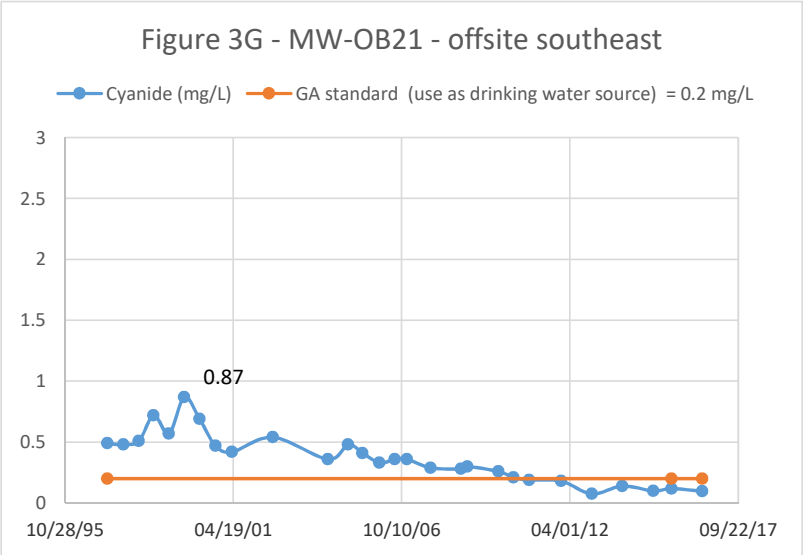




Figures 3E - 3G
Cyanide Concentrations in Groundwater versus Time
Pretreatment Plant Annual Groundwater & Surface Water Sampling - July 2016







ATTACHMENT 1
Purge and Sample Logs

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

July 2016 Semi-Annual Groundwater & Surface Water Sampling Event

Sampling Personnel: Katie Angel
Weather: overcast, 81, humid
Well ID: MW-OB17
Date: 7/25/2016
Time In: 12:01 Time Out: 12:49

WELL INFORMATION

Depth to Water (from TOC):	(feet)	8.39	Well Type:	Flushmount ☐	Stick-Up ☒
Depth to Water(From TOC) With Pump in place:	(feet)	8.42	Well Locked:	Yes ☒	No ☐
Total Depth (from TOC):	(feet)	13.56	Measuring Point Marked:	Yes ☒	No ☐
Length of Water Column :	(feet)	5.17	Well Condition:	Good ☒	Poor ☐
Well Diameter:	(inches)	2	Well Condition Comments:	—	

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.84
Pumping Rate of Pump:	(mL/min)	250
Total Volume Removed:	(mL or gal)	3.1

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

EVACUATION INFORMATION

Pump ID: 02 446 2 Pump Size: 1/4 60 × 3/8 OD tubing Depth of Pump Intake: tubing bottom @ 11.50 ft

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

Water Quality Meter (type/Serial Number): SPD42MHS

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

Final Depth to Water (prior to turning off pump): 8.59
Barometric Pressure (At time of sampling) in mm/Hg: 752.464

FIELD PARAMETER READINGS:

Time	12:05	12:07	12:09	12:11	12:13	12:15	12:20	12:25	12:30	12:35	12:40	12:45		
Rate (ml/min)	250	250	250	250	250	250	250	250	250	250	250	250		
Depth to Water (ft. TOC)	8.57	8.60	8.60	8.60	8.59	8.60	8.60	8.60	8.62	8.61	8.62	8.62		
Temperature (°C)	21.53	21.67	21.75	21.78	21.77	21.74	21.68	21.71	21.82	21.93	22.19	22.24		
pH	5.61	5.96	6.00	6.06	6.03	6.05	6.07	6.15	6.25	6.33	6.43	6.46		
Conductivity (mS/cm)	0.428	0.417	0.405	0.398	0.393	0.392	0.393	0.393	0.395	0.390	0.385	0.379	BR	
Dissolved Oxygen (mg/L)	6.06	3.12	2.33	1.88	1.78	1.94	1.45	1.13	0.91	0.88	0.89	0.92		
Turbidity (NTU)	13.5	11.6	12.3	11.2	9.9	9.7	9.4	5.0	5.9	3.9	3.4	2.0		
ORP (mV)	227	280	293	302	268	198	176	169	169	180	185	185		

SAMPLE INFORMATION

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

Sample ID: MW-OB17_20160725
Start Time: 12:48
End Time: 12:49
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 2
Sampled By: Katie Angel

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

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

Observations (water color, clarity, etc.):
Water was clear throughout pumping event
Horiba #: SPD42MHS
sample taken 12:48

UNIT STABILITY

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

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

July 2016 Semi-Annual Groundwater & Surface Water Sampling Event

Sampling Personnel: Jeff Kmiotek
Well ID: MW-08I8
Weather: 85°F partly cloudy
Date: 7/25/2016
Time In: 12:25 Time Out: 13:32

WELL INFORMATION

Depth to Water (from TOC):	(feet)	09.46	Well Type:	Flushmount ☐	Stick-Up ☒
Depth to Water(From TOC) With Pump in place:	(feet)	09.51	Well Locked:	Yes ☒	No ☐
Total Depth (from TOC):	(feet)	12.52	Measuring Point Marked:	Yes ☒	No ☐
Length of Water Column :	(feet)	3.01	Well Condition:	Good ☒	Poor ☐
Well Diameter:	(inches)	2	Well Condition Comments:	~~752.182~~ BR	

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.49 gal (1,857 mL)
Pumping Rate of Pump:	(mL/min)	140
Total Volume Removed:	(mL or gal)	5,700 mL

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

EVACUATION INFORMATION

Pump ID: 200414 Pump Size: Depth of Pump Intake:
Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐
Tubing Used: Teflon ☒ Polyethylene ☐ N/A ☐
Water Quality Meter (type/Serial Number): Horiba AMfms502
Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐
Did well go dry? Yes ☐ No ☒
Final Depth to Water (prior to turning off pump): 11.51
Barometric Pressure (At time of sampling) in mm/Hg: 752.182

FIELD PARAMETER READINGS:

Time	12:25	12:27	12:29	12:31	12:33	12:35	12:40	12:45	12:50	12:55	13:00	13:05	13:10	13:15
Rate (ml/min)		140	140	140	140	140	140	120	120	120	120	120	120	120
Depth to Water (ft. TOC)		9.55	9.72	9.83	9.96	10.07	10.25	10.42	10.53	10.68	10.85	11.03	11.20	11.31
Temperature (°C)		22.36	22.26	22.41	21.10	20.40	20.17	19.75	19.45	19.25	19.01	19.22	19.28	19.37
pH		6.86	6.91	7.21	7.30	7.33	7.33	7.35	7.35	7.36	7.38	7.39	7.41	7.42
Conductivity (mS/cm)		0.673	0.661	0.602	0.575	0.552	0.543	0.535	0.532	0.539	0.549	0.564	0.569	0.573
Dissolved Oxygen (mg/L)		2.07	1.96	1.81	1.97	1.74	1.68	1.16	1.03	0.73	0.53	0.26	0.20	0.18
Turbidity (NTU)		5.2	5.3	5.3	5.8	5.3	5.4	5.1	3.7	2.3	1.9	1.8	1.8	1.8
ORP (mV)		153	148	151	162	185	181	203	218	226	226	220	212	206

SAMPLE INFORMATION

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

Sample ID: ~~13:30~~ MW-08I8_20160725
Start Time: ~~13:27~~ 13:20
End Time: 13:27
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 2
Sampled By: JK

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

Observations (water color, clarity, etc.):

UNIT STABILITY

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

2, MW

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

July 2016 Semi-Annual Groundwater & Surface Water Sampling Event

Sampling Personnel:	Michelle Pompano	Well ID:	MW-0819
Weather:	80s sunny	Date:	7/25/16
		Time In:	12:13
		Time Out:	12:54

WELL INFORMATION

Depth to Water (from TOC):	(feet)	8.35	Well Type:	Flushmount ☐	Stick-Up ☒
Depth to Water(From TOC) With Pump in place:	(feet)	8.35	Well Locked:	Yes ☒	No ☐
Total Depth (from TOC):	(feet)	9.45 / 9.65	Measuring Point Marked:	Yes ☐	No ☒
Length of Water Column :	(feet)	0.90	Well Condition:	Good ☒	Poor ☐
Well Diameter:	(inches)	2"	Well Condition Comments:	Good	

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.2 l gal
Pumping Rate of Pump:	(mL/min)	~100
Total Volume Removed:	(mL or gal)	1.0

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

EVACUATION INFORMATION

Pump ID: 052-W2554POU Pump Size: Depth of Pump Intake:

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

Water Quality Meter (type/Serial Number):

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

Final Depth to Water (prior to turning off pump): 9.64

Barometric Pressure (At time of sampling) in mm/Hg: 751.02

FIELD PARAMETER READINGS:

Time	12:24	12:26	12:28	12:30	12:32	12:34	12:39	12:44	12:49	12:54	14:32	14:34		
Rate (ml/min)	250	100	100	175	125	125	100	100	100		150	150		
Depth to Water (ft. TOC)	8.94	8.98	8.98	8.95	8.94	8.95	9.14	9.35	9.59		9.00	9.15		
Temperature (°C)	20.08	20.70	21.56	22.32	22.69	22.97	22.96	19.25	18.48		20.45	20.51		
pH	6.93	6.93	7.03	7.09	7.13	7.15	7.20	7.15	7.18		7.25	7.09		
Conductivity (mS/cm)	0.341	0.311	0.307	0.307	0.306	0.306	0.314	0.305	0.293		0.303	0.297		
Dissolved Oxygen (mg/L)	7.32	3.16	3.59	4.13	4.60	4.79	4.31	1.06	0.00		3.89	4.01		
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
ORP (mV)	-97	-101	-101	-96	-93	-91	-86	-100	-100		-40	-18		

SAMPLE INFORMATION

Sample List:

- Dissolved Chromium
- Hexavalent Chromium
- Total Cyanide ☒
- Free Cyanide ☒
- Total Dissolved Solids (TDS) ☒ MP
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID:	MW-0819-20160725
Start Time:	14:35
End Time:	14:45
MS/MSD: Yes ☐ No ☒	
Duplicate: Yes ☐ No ☒	
Total Bottles:	2
Sampled By:	MP

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

Observations (water color, clarity, etc.):

water clear, well ran dry @ 12:54 went back to well @ 14:30 - water recharged to 8.65ft → 85% of what it was earlier - ~~purge / well casing~~ and sample field 2 readings

UNIT STABILITY

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

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

July 2016 Semi-Annual Groundwater & Surface Water Sampling Event

Sampling Personnel:	—	Well ID:	MW-DB20
Weather:	Overcast, 85°F	Date:	7/25/2016
		Time In:	1300
		Time Out:	1300

WELL INFORMATION

Depth to Water (from TOC):	(feet)	DRY	Well Type:	Flushmount ☐	Stick-Up ☒
Depth to Water(From TOC) With Pump in place:	(feet)	—	Well Locked:	Yes ☒	No ☐
Total Depth (from TOC):	(feet)	10.20	Measuring Point Marked:	Yes ☒	No ☐
Length of Water Column :	(feet)	—	Well Condition:	Good ☒	Poor ☐
Well Diameter:	(inches)	2"	Well Condition Comments:	—	

WELL WATER INFORMATION

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

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

EVACUATION INFORMATION

Pump ID:	—	Pump Size:	—	Depth of Pump Intake:	—		
Evacuation Method:	Bailer ☐	Peristaltic ☐	Bladder ☐	Other ☐			
Tubing Used:	Teflon ☐	Polyethylene ☐	N/A ☒				
Water Quality Meter (type/Serial Number):							
Sampling Method:	Bailer ☐	Peristaltic ☐	Bladder ☐	Other ☐			
Did well go dry?	Yes ☒	No ☐					
Final Depth to Water (prior to turning off pump):	—						
Barometric Pressure (At time of sampling) in mm/Hg:	—						

FIELD PARAMETER READINGS:

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

Bar Rdg

SAMPLE INFORMATION

Sample List:

- Dissolved Chromium ☐
- Hexavalent Chromium ☐
- Total Cyanide ☐ BR
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

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

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

Observations (water color, clarity, etc.):

Well dry upon gauging.

UNIT STABILITY

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

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

July 2016 Semi-Annual Groundwater & Surface Water Sampling Event

Sampling Personnel:	Carolyn Clemmens	Well ID:	MW-0B21
Weather:	83° F, cloudy	Date:	07-25-2016
		Time In:	14:44
		Time Out:	15:40 (DTW: 15:11)

WELL INFORMATION

Depth to Water (from TOC):	(feet)	13.40	Well Type:	Flushmount ☐	Stick-Up ☒
Depth to Water(From TOC) With Pump in place:	(feet)	13.47	Well Locked:	Yes ☒	No ☐
Total Depth (from TOC):	(feet)	16.65	Measuring Point Marked:	Yes ☒	No ☐
Length of Water Column :	(feet)	3.25	Well Condition:	Good ☒	Poor ☐
Well Diameter:	(inches)	2"	Well Condition Comments:		

WELL WATER INFORMATION

Volume of Water in Well:	(mL or gal)	0.53 gal
Pumping Rate of Pump:	(mL/min)	~125
Total Volume Removed:	(mL or gal)	4675 purged, 170 in tubing ~200 before purge

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

EVACUATION INFORMATION

Pump ID:	Peri Pump 20044	Pump Size:	NA	Depth of Pump Intake:	15.05		
Evacuation Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐			
Tubing Used:	Teflon ☐	Polyethylene ☒	N/A ☐				
Water Quality Meter (type/Serial Number):	XTVCUF7P						
Sampling Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other ☐			
Did well go dry?	Yes ☐	No ☒					
Final Depth to Water (prior to turning off pump):	15.11						
Barometric Pressure (At time of sampling) in mm/Hg:	750.99						

+ placed mid water column

FIELD PARAMETER READINGS:

Time	14:48	14:50	14:52	14:54	14:56	14:58	15:00	15:05	15:10	15:15	15:20	15:25		
Rate (ml/min)	150	125	125	125	125	125	125	125	125	125	125	125		
Depth to Water (ft. TOC)	13.90	14.00	14.05	14.11	14.18	14.23	14.29	14.41	14.55	14.68	14.80	14.96		
Temperature (°C)	20.37	19.75	18.41	17.92	17.66	17.58	17.53	17.56	17.68	17.66	17.60	17.54		
pH	6.12	6.32	6.44	6.48	6.50	6.51	6.52	6.54	6.56	6.57	6.58	6.59		
Conductivity (mS/cm)	0.614	0.568	0.569	0.570	0.564	0.560	0.556	0.547	0.538	0.533	.530	.528		
Dissolved Oxygen (mg/L)	3.83	2.12	1.26	0.94	0.78	0.66	0.45	0.46	0.17	0.09	0.09	0.08		
Turbidity (NTU)	18.6	7.7	10	12.6	13.6	13.8	12.8	7.9	4.0	3.3	2.2	1.5		
ORP (mV)	209	71	41	36	38	41	50	80	86	86	83	80		

SAMPLE INFORMATION

Sample List:

- Dissolved Chromium ☐
- Hexavalent Chromium ☐
- Total Cyanide ☒
- Free Cyanide ☒
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

Sample ID:	MW-0B21-20160725
Start Time:	15:26
End Time:	15:40
MS/MSD:	Yes ☒ No ☐
Duplicate:	Yes ☒ No ☐
Total Bottles:	2
Sampled By:	Carolyn C.

Duplicate ID:	DUP2-20160725
Sample Time:	15:30
Total Bottles:	2
Sampled By:	Carolyn C.
MS/MSD ID:	MW-0B21-20160725
Sample Time:	15:34
Total Bottles:	2
Sampled By:	Carolyn C.

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

UNIT STABILITY

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

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

July 2016 Semi-Annual Groundwater & Surface Water Sampling Event

Sampling Personnel: Katie Argl
Weather: Overcast, 85°, humid
Well ID: MW-OB23
Date: 7/25/16
Time In: 14:25 Time Out: 15:07

WELL INFORMATION

Depth to Water (from TOC):	(feet)	6.22	Well Type:	Flushmount ☐	Stick-Up ☒
Depth to Water(From TOC) With Pump in place:	(feet)	6.19	Well Locked:	Yes ☒	No ☐
Total Depth (from TOC):	(feet)	8.22	Measuring Point Marked:	Yes ☐	No ☒
Length of Water Column :	(feet)	2	Well Condition:	Good ☒	Poor ☐
Well Diameter:	(inches)	2	Well Condition Comments:	—	

WELL WATER INFORMATION

Volume of Water in Well:	(mL or (gal))	0.33
Pumping Rate of Pump:	(mL/min)	100 - 175
Total Volume Removed:	(mL or (gal))	2

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

EVACUATION INFORMATION

Pump ID: 024462 Pump Size: Depth of Pump Intake: 8.00

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☒ N/A ☐

Water Quality Meter (type/Serial Number): SRD42MH9

Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☒

Final Depth to Water (prior to turning off pump): 7.32

Barometric Pressure (At time of sampling) in mm/Hg: 751.244

FIELD PARAMETER READINGS:

Time	1428	1430	1432	1434	1436	1438	1443	1448	1453	1458	1503
Rate (ml/min)	150	175	175	150	150	100	100	100	100	100	100
Depth to Water (ft. TOC)	6.59	6.76	6.91	6.97	7.12	7.17	7.19	7.22	7.23	7.26	7.27
Temperature (°C)	21.15	20.03	20.04	19.75	19.48	19.24	19.18	19.20	19.25	19.22	19.24
pH	6.66	6.37	6.31	6.31	6.34	6.40	6.48	6.52	6.55	6.58	6.59
Conductivity (mS/cm)	0.540	0.552	0.553	0.553	0.553	0.555	0.557	0.551	0.546	0.542	0.539
Dissolved Oxygen (mg/L)	2.06	0.59	0.08	0	0	0	0	0	0.05	0.06	0.07
Turbidity (NTU)	10.9	11.4	8.8	8.7	8.7	9.1	7.7	5.8	3.6	2.3	1.5
ORP (mV)	8	-16	-38	-42	-43	-45	-46	-41	-32	-26	-23

SAMPLE INFORMATION

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

Sample ID: MW-OB23-20160725
Start Time: 15:05
End Time: 15:09
MS/MSD: Yes ☐ No ☒
Duplicate: Yes ☐ No ☒
Total Bottles: 2
Sampled By: Katie Argl

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

Observations (water color, clarity, etc.):
water remained clear throughout pumping event

UNIT STABILITY

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

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

July 2016 Semi-Annual Groundwater & Surface Water Sampling Event

Sampling Personnel:	Bryan Reles	Well ID:	SG-7
Weather:	Overcast, 85°F	Date:	7/25/2016
		Time In:	1300
		Time Out:	1300

WELL INFORMATION

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

WELL WATER INFORMATION

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

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

EVACUATION INFORMATION

Pump ID: Grab Sample Pump Size: — Depth of Pump Intake: —

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☐ Other ☐

Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒

Water Quality Meter (type/Serial Number):

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☐ Other ☐

Did well go dry? Yes ☐ No ☐

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

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

FIELD PARAMETER READINGS:

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

BR

SAMPLE INFORMATION

Sample List:

- Dissolved Chromium ☐
- Hexavalent Chromium ☐
- Total Cyanide ☐
- Free Cyanide ☐
- Total Dissolved Solids ☐
- Hardness ☐
- VOCs (Dichlorobenzenes) ☐

BR

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

BR

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

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

BR

Observations (water color, clarity, etc.):

@ 1300, check sample location. Area wet, but not submerged.
@ 1330, Discover Feeder Canal in process of being drained (Weir Brook gate valve open).

UNIT STABILITY

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

GROUNDWATER SAMPLING LOG

Ashland Glens Falls, NY

July 2016 Semi-Annual Groundwater & Surface Water Sampling Event

Sampling Personnel: Bryan Reles
Weather: Overcast, 82°F, humid

Well ID: SG-11
Date: 7/25/16
Time In: 1335 Time Out: 1400

WELL INFORMATION

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

WELL WATER INFORMATION

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

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

EVACUATION INFORMATION

Pump ID: ~~Peristaltic~~ N/A Pump Size: NA Depth of Pump Intake: N/A

Evacuation Method: Bailer ☐ Peristaltic ☐ Bladder ☐ Other ☒

Tubing Used: Teflon ☐ Polyethylene ☐ N/A ☒

Water Quality Meter (type/Serial Number): ~~YSI~~ SRD 42MH9

Sampling Method: Bailer ☐ Peristaltic ☐ Bladder ☐ Other ☒

Did well go dry? Yes ☐ No ☒

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

Barometric Pressure (At time of sampling) in mm/Hg: 752.305

FIELD PARAMETER READINGS:

Time	1344	1346												
Rate (ml/min)	—	—												
Depth to Water (ft. TOC)	—	—												
Temperature (°C)	26.05	26.35												
pH	7.41	7.21												
Conductivity (mS/cm)	0.101	0.102												
Dissolved Oxygen (mg/L)	8.75	6.07												
Turbidity (NTU)	1.5	1.1												
ORP (mV)	138	153												

Br Reles

SAMPLE INFORMATION

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

Sample ID: SG-11-20160725
Start Time: 13:45
End Time: 1400
MS/MSD: Yes ☒ No ☒
Duplicate: Yes ☒ No ☒
Total Bottles: 2
Sampled By: Bryan Reles

Duplicate ID: Dup 1-20160725
Sample Time: —
Total Bottles: 2 —
Sampled By: B. Reles

MS/MSD ID: SG-11-20160725
Sample Time: 13:45
Total Bottles: 2 —
Sampled By: B. Reles

Observations (water color, clarity, etc.):

Grab sample from canal.
For parameter reading used grab cup / not flow through
* Canal in process of being drained. Noticed @ 1345. Was not being drained this morning.

UNIT STABILITY

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

ATTACHMENT 2
Laboratory Analytical Reports

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 480-103690-1

Job Description: Hercules Glens Falls O&M 2016 SA

For:
Ashland Inc
5200 Blazer Parkway
DS-4
Dublin, OH 43017

Attention: Mr. Jim Vondracek

Approved for release.
Kathryn E Smith
Project Manager II
8/8/2016 7:58 AM

Kathryn E Smith, Project Manager II
5102 LaRoche Avenue, Savannah, GA, 31404
(912)354-7858
kathy.smith@testamericainc.com
08/08/2016

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC: 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC: 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA; WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

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Table of Contents

CASE NARRATIVE

Client: Ashland Inc

Project: Hercules Glens Falls O&M 2016 SA

Report Number: 480-103690-1

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

RECEIPT

The samples were received on 07/27/2016; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.2º C and 0.5º C.

TOTAL CYANIDE

Samples EB_20160725 (480-103690-1), MW-OB17_20160725 (480-103690-2), MW-OB18_20160725 (480-103690-3), SG-11_20160725 (480-103690-4), DUP1_20160725 (480-103690-5), MW-OB19_20160725 (480-103690-6), MW-OB23_20160725 (480-103690-7), MW-OB21_20160725 (480-103690-8) and DUP2_20160725 (480-103690-9) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared on 08/02/2016 and analyzed on 08/03/2016.

Sample MW-OB23_20160725 (480-103690-7)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Sample Summary

Client: Ashland Inc
Project/Site: Hercules Glens Falls O&M 2016 SA

TestAmerica Job ID: 480-103690-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-103690-1	EB_20160725	Water	07/25/16 11:33	07/27/16 01:30
480-103690-2	MW-OB17_20160725	Water	07/25/16 12:48	07/27/16 01:30
480-103690-3	MW-OB18_20160725	Water	07/25/16 13:20	07/27/16 01:30
480-103690-4	SG-11_20160725	Water	07/25/16 13:45	07/27/16 01:30
480-103690-5	DUP1_20160725	Water	07/25/16 00:00	07/27/16 01:30
480-103690-6	MW-OB19_20160725	Water	07/25/16 14:45	07/27/16 01:30
480-103690-7	MW-OB23_20160725	Water	07/25/16 15:05	07/27/16 01:30
480-103690-8	MW-OB21_20160725	Water	07/25/16 15:34	07/27/16 01:30
480-103690-9	DUP2_20160725	Water	07/25/16 00:00	07/27/16 01:30

Detection Summary

Client: Ashland Inc
Project/Site: Hercules Glens Falls O&M 2016 SA

TestAmerica Job ID: 480-103690-1

Client Sample ID: EB_20160725 — Lab Sample ID: 480-103690-1

No Detections.

Client Sample ID: MW-OB17_20160725 — Lab Sample ID: 480-103690-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	370		10	5.0	ug/L	1		9012B	Total/NA

Client Sample ID: MW-OB18_20160725 — Lab Sample ID: 480-103690-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	57		10	5.0	ug/L	1		9012B	Total/NA

Client Sample ID: SG-11_20160725 — Lab Sample ID: 480-103690-4

No Detections.

Client Sample ID: DUP1_20160725 — Lab Sample ID: 480-103690-5

No Detections.

Client Sample ID: MW-OB19_20160725 — Lab Sample ID: 480-103690-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	140		10	5.0	ug/L	1		9012B	Total/NA

Client Sample ID: MW-OB23_20160725 — Lab Sample ID: 480-103690-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	2500		100	50	ug/L	10		9012B	Total/NA

Client Sample ID: MW-OB21_20160725 — Lab Sample ID: 480-103690-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	96		10	5.0	ug/L	1		9012B	Total/NA

Client Sample ID: DUP2_20160725 — Lab Sample ID: 480-103690-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	97		10	5.0	ug/L	1		9012B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Ashland Inc
Project/Site: Hercules Glens Falls O&M 2016 SA

TestAmerica Job ID: 480-103690-1

Method	Method Description	Protocol	Laboratory
9012B	Cyanide, Total andor Amenable	SW846	TAL BUF

Protocol References:

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

Laboratory References:

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

Client Sample ID: EB_20160725
Lab Sample ID: 480-103690-1
Date Collected: 07/25/16 11:33
Matrix: Water
Date Received: 07/27/16 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	10	U	10	5.0	ug/L		08/02/16 16:55	08/03/16 11:18	1

Client Sample ID: MW-OB17_20160725
Lab Sample ID: 480-103690-2
Date Collected: 07/25/16 12:48
Matrix: Water
Date Received: 07/27/16 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**370**		10	5.0	ug/L		08/02/16 16:55	08/03/16 11:19	1

Client Sample ID: MW-OB18_20160725
Lab Sample ID: 480-103690-3
Date Collected: 07/25/16 13:20
Matrix: Water
Date Received: 07/27/16 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**57**		10	5.0	ug/L		08/02/16 16:55	08/03/16 11:21	1

Client Sample ID: SG-11_20160725
Lab Sample ID: 480-103690-4
Date Collected: 07/25/16 13:45
Matrix: Water
Date Received: 07/27/16 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	10	U	10	5.0	ug/L		08/02/16 16:55	08/03/16 11:22	1

Client Sample ID: DUP1_20160725
Lab Sample ID: 480-103690-5
Date Collected: 07/25/16 00:00
Matrix: Water
Date Received: 07/27/16 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	10	U	10	5.0	ug/L		08/02/16 16:55	08/03/16 11:26	1

Client Sample ID: MW-OB19_20160725
Lab Sample ID: 480-103690-6
Date Collected: 07/25/16 14:45
Matrix: Water
Date Received: 07/27/16 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**140**		10	5.0	ug/L		08/02/16 16:55	08/03/16 11:28	1

Client Sample ID: MW-OB23_20160725
Lab Sample ID: 480-103690-7
Date Collected: 07/25/16 15:05
Matrix: Water
Date Received: 07/27/16 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**2500**		100	50	ug/L		08/02/16 16:55	08/03/16 12:10	10

Client Sample ID: MW-OB21_20160725
Lab Sample ID: 480-103690-8

Date Collected: 07/25/16 15:34
Matrix: Water
Date Received: 07/27/16 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	96		10	5.0	ug/L		08/02/16 20:10	08/03/16 11:38	1

Client Sample ID: DUP2_20160725
Lab Sample ID: 480-103690-9

Date Collected: 07/25/16 00:00
Matrix: Water
Date Received: 07/27/16 01:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	97		10	5.0	ug/L		08/02/16 20:10	08/03/16 11:42	1

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 480-314090/1-A
Matrix: Water
Analysis Batch: 314249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314090

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	10	U	10	5.0	ug/L		08/02/16 16:55	08/03/16 10:59	1

Lab Sample ID: LCS 480-314090/2-A
Matrix: Water
Analysis Batch: 314249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314090

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	250	244		ug/L		98	90 - 110

Lab Sample ID: 480-103690-4 MS
Matrix: Water
Analysis Batch: 314249

Client Sample ID: SG-11_20160725
Prep Type: Total/NA
Prep Batch: 314090

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	10	U	100	93.0		ug/L		93	90 - 110

Lab Sample ID: 480-103690-4 MSD
Matrix: Water
Analysis Batch: 314249

Client Sample ID: SG-11_20160725
Prep Type: Total/NA
Prep Batch: 314090

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	10	U	100	101		ug/L		101	90 - 110	8	15

Lab Sample ID: MB 480-314091/1-A
Matrix: Water
Analysis Batch: 314249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314091

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	10	U	10	5.0	ug/L		08/02/16 20:10	08/03/16 11:34	1

Lab Sample ID: LCS 480-314091/2-A
Matrix: Water
Analysis Batch: 314282

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314091

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	250	256		ug/L		102	90 - 110

Lab Sample ID: 480-103690-8 MS
Matrix: Water
Analysis Batch: 314249

Client Sample ID: MW-OB21_20160725
Prep Type: Total/NA
Prep Batch: 314091

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	96		100	186		ug/L		90	90 - 110

Lab Sample ID: 480-103690-8 MSD
Matrix: Water
Analysis Batch: 314249

Client Sample ID: MW-OB21_20160725
Prep Type: Total/NA
Prep Batch: 314091

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	96		100	203		ug/L		107	90 - 110	9	15

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Ashland Inc
Project/Site: Hercules Glens Falls O&M 2016 SA

TestAmerica Job ID: 480-103690-1

General Chemistry

Prep Batch: 314090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-103690-1	EB_20160725	Total/NA	Water	9012B	
480-103690-2	MW-OB17_20160725	Total/NA	Water	9012B	
480-103690-3	MW-OB18_20160725	Total/NA	Water	9012B	
480-103690-4	SG-11_20160725	Total/NA	Water	9012B	
480-103690-5	DUP1_20160725	Total/NA	Water	9012B	
480-103690-6	MW-OB19_20160725	Total/NA	Water	9012B	
480-103690-7	MW-OB23_20160725	Total/NA	Water	9012B	
MB 480-314090/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-314090/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-103690-4 MS	SG-11_20160725	Total/NA	Water	9012B	
480-103690-4 MSD	SG-11_20160725	Total/NA	Water	9012B	

Prep Batch: 314091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-103690-8	MW-OB21_20160725	Total/NA	Water	9012B	
480-103690-9	DUP2_20160725	Total/NA	Water	9012B	
MB 480-314091/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-314091/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-103690-8 MS	MW-OB21_20160725	Total/NA	Water	9012B	
480-103690-8 MSD	MW-OB21_20160725	Total/NA	Water	9012B	

Analysis Batch: 314249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-103690-1	EB_20160725	Total/NA	Water	9012B	314090
480-103690-2	MW-OB17_20160725	Total/NA	Water	9012B	314090
480-103690-3	MW-OB18_20160725	Total/NA	Water	9012B	314090
480-103690-4	SG-11_20160725	Total/NA	Water	9012B	314090
480-103690-5	DUP1_20160725	Total/NA	Water	9012B	314090
480-103690-6	MW-OB19_20160725	Total/NA	Water	9012B	314090
480-103690-7	MW-OB23_20160725	Total/NA	Water	9012B	314090
480-103690-8	MW-OB21_20160725	Total/NA	Water	9012B	314091
480-103690-9	DUP2_20160725	Total/NA	Water	9012B	314091
MB 480-314090/1-A	Method Blank	Total/NA	Water	9012B	314090
MB 480-314091/1-A	Method Blank	Total/NA	Water	9012B	314091
LCS 480-314090/2-A	Lab Control Sample	Total/NA	Water	9012B	314090
480-103690-4 MS	SG-11_20160725	Total/NA	Water	9012B	314090
480-103690-4 MSD	SG-11_20160725	Total/NA	Water	9012B	314090
480-103690-8 MS	MW-OB21_20160725	Total/NA	Water	9012B	314091
480-103690-8 MSD	MW-OB21_20160725	Total/NA	Water	9012B	314091

Analysis Batch: 314282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-314091/2-A	Lab Control Sample	Total/NA	Water	9012B	314091

Client Sample ID: EB_20160725
Lab Sample ID: 480-103690-1
Date Collected: 07/25/16 11:33
Matrix: Water
Date Received: 07/27/16 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			314090	08/02/16 16:55	CLT	TAL BUF
Total/NA	Analysis	9012B		1	314249	08/03/16 11:18	MDL	TAL BUF

Client Sample ID: MW-OB17_20160725
Lab Sample ID: 480-103690-2
Date Collected: 07/25/16 12:48
Matrix: Water
Date Received: 07/27/16 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			314090	08/02/16 16:55	CLT	TAL BUF
Total/NA	Analysis	9012B		1	314249	08/03/16 11:19	MDL	TAL BUF

Client Sample ID: MW-OB18_20160725
Lab Sample ID: 480-103690-3
Date Collected: 07/25/16 13:20
Matrix: Water
Date Received: 07/27/16 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			314090	08/02/16 16:55	CLT	TAL BUF
Total/NA	Analysis	9012B		1	314249	08/03/16 11:21	MDL	TAL BUF

Client Sample ID: SG-11_20160725
Lab Sample ID: 480-103690-4
Date Collected: 07/25/16 13:45
Matrix: Water
Date Received: 07/27/16 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			314090	08/02/16 16:55	CLT	TAL BUF
Total/NA	Analysis	9012B		1	314249	08/03/16 11:22	MDL	TAL BUF

Client Sample ID: DUP1_20160725
Lab Sample ID: 480-103690-5
Date Collected: 07/25/16 00:00
Matrix: Water
Date Received: 07/27/16 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			314090	08/02/16 16:55	CLT	TAL BUF
Total/NA	Analysis	9012B		1	314249	08/03/16 11:26	MDL	TAL BUF

Client Sample ID: MW-OB19_20160725
Lab Sample ID: 480-103690-6
Date Collected: 07/25/16 14:45
Matrix: Water
Date Received: 07/27/16 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			314090	08/02/16 16:55	CLT	TAL BUF
Total/NA	Analysis	9012B		1	314249	08/03/16 11:28	MDL	TAL BUF

Lab Chronicle

Client: Ashland Inc
Project/Site: Hercules Glens Falls O&M 2016 SA

TestAmerica Job ID: 480-103690-1

Client Sample ID: MW-OB23_20160725
Lab Sample ID: 480-103690-7
Date Collected: 07/25/16 15:05
Matrix: Water
Date Received: 07/27/16 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			314090	08/02/16 16:55	CLT	TAL BUF
Total/NA	Analysis	9012B		10	314249	08/03/16 12:10	MDL	TAL BUF

Client Sample ID: MW-OB21_20160725
Lab Sample ID: 480-103690-8
Date Collected: 07/25/16 15:34
Matrix: Water
Date Received: 07/27/16 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			314091	08/02/16 20:10	CLT	TAL BUF
Total/NA	Analysis	9012B		1	314249	08/03/16 11:38	MDL	TAL BUF

Client Sample ID: DUP2_20160725
Lab Sample ID: 480-103690-9
Date Collected: 07/25/16 00:00
Matrix: Water
Date Received: 07/27/16 01:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			314091	08/02/16 20:10	CLT	TAL BUF
Total/NA	Analysis	9012B		1	314249	08/03/16 11:42	MDL	TAL BUF

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

Certification Summary

Client: Ashland Inc
TestAmerica Job ID: 480-103690-1
Project/Site: Hercules Glens Falls O&M 2016 SA

Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-17
California	State Program	9	1169CA	09-30-17
Connecticut	State Program	1	PH-0568	09-30-16
Florida	NELAP	4	E87672	06-30-16 *
Georgia	State Program	4	N/A	03-31-17
Georgia	State Program	4	956	03-31-17
Illinois	NELAP	5	200003	09-30-16
Iowa	State Program	7	374	03-01-17
Kansas	NELAP	7	E-10187	10-31-16
Kentucky (DW)	State Program	4	90029	12-31-16
Kentucky (UST)	State Program	4	30	03-31-17
Kentucky (WW)	State Program	4	90029	12-31-16
Louisiana	NELAP	6	02031	06-30-17
Maine	State Program	1	NY00044	12-04-16
Maryland	State Program	3	294	03-31-17
Massachusetts	State Program	1	M-NY044	06-30-17
Michigan	State Program	5	9937	03-31-16 *
Minnesota	NELAP	5	036-999-337	12-31-16
New Hampshire	NELAP Primary AB	1	2973	09-11-16
New Hampshire	NELAP Secondary AB	1	2337	11-17-16
New Jersey	NELAP	2	NY455	06-30-17
New York	NELAP	2	10026	03-31-17
North Dakota	State Program	8	R-176	03-31-17
Oklahoma	State Program	6	9421	08-31-16
Oregon	NELAP	10	NY200003	06-09-17
Pennsylvania	NELAP	3	68-00281	07-31-17
Rhode Island	State Program	1	LAO00328	12-30-16
Tennessee	State Program	4	TN02970	03-31-17
Texas	NELAP	6	T104704412-15-6	07-31-17
USDA	Federal		P330-11-00386	11-26-17
Virginia	NELAP	3	460185	09-14-16
Washington	State Program	10	C784	02-10-17
West Virginia DEP	State Program	3	252	09-30-16
Wisconsin	State Program	5	998310390	08-31-16

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-17
Alaska (UST)	State Program	10	UST-104	11-05-16
Arkansas DEQ	State Program	6	88-0692	01-31-17
California	State Program	9	2939	07-31-16 *
Colorado	State Program	8	N/A	12-31-16
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-17
GA Dept. of Agriculture	State Program	4	N/A	06-12-17

* Certification renewal pending - certification considered valid.

Laboratory: TestAmerica Savannah (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Georgia	State Program	4	N/A	06-30-17
Georgia	State Program	4	803	06-30-17
Guam	State Program	9	15-005r	04-16-17
Hawaii	State Program	9	N/A	06-30-17
Illinois	NELAP	5	200022	11-30-16
Indiana	State Program	5	N/A	06-30-17
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-16
Kentucky (UST)	State Program	4	18	06-30-17
Kentucky (WW)	State Program	4	90084	12-31-16
Louisiana	NELAP	6	30690	06-30-17
Louisiana (DW)	NELAP	6	LA160019	12-31-16
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-16
Massachusetts	State Program	1	M-GA006	06-30-17
Michigan	State Program	5	9925	06-30-17
Mississippi	State Program	4	N/A	06-30-16 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16 *
New Jersey	NELAP	2	GA769	06-30-17
New Mexico	State Program	6	N/A	06-30-17
New York	NELAP	2	10842	03-31-17
North Carolina (DW)	State Program	4	13701	07-31-16 *
North Carolina (WW/SW)	State Program	4	269	12-31-16
Oklahoma	State Program	6	9984	08-31-16
Pennsylvania	NELAP	3	68-00474	06-30-17
Puerto Rico	State Program	2	GA00006	12-31-16
South Carolina	State Program	4	98001	06-30-16 *
Tennessee	State Program	4	TN02961	06-30-16 *
Texas	NELAP	6	T104704185-14-7	11-30-16
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-17
Washington	State Program	10	C805	06-10-16 *
West Virginia (DW)	State Program	3	9950C	12-31-16
West Virginia DEP	State Program	3	094	08-31-16
Wisconsin	State Program	5	999819810	08-31-16
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Certification renewal pending - certification considered valid.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job Number: 480-103690-1

SDG No.:

Project: Hercules Glens Falls O&M 2016 SA

Client Sample ID	Lab Sample ID
EB_20160725	480-103690-1
MW-OB17_20160725	480-103690-2
MW-OB18_20160725	480-103690-3
SG-11_20160725	480-103690-4
DUP1_20160725	480-103690-5
MW-OB19_20160725	480-103690-6
MW-OB23_20160725	480-103690-7
MW-OB21_20160725	480-103690-8
DUP2_20160725	480-103690-9

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: EB_20160725 Lab Sample ID: 480-103690-1

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG ID.:

Matrix: Water Date Sampled: 07/25/2016 11:33

Reporting Basis: WET Date Received: 07/27/2016 01:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	10	10	5.0	ug/L	U		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MW-OB17_20160725 Lab Sample ID: 480-103690-2

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG ID.:

Matrix: Water Date Sampled: 07/25/2016 12:48

Reporting Basis: WET Date Received: 07/27/2016 01:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	370	10	5.0	ug/L			1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MW-OB18_20160725 Lab Sample ID: 480-103690-3

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG ID.:

Matrix: Water Date Sampled: 07/25/2016 13:20

Reporting Basis: WET Date Received: 07/27/2016 01:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	57	10	5.0	ug/L			1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: SG-11_20160725 Lab Sample ID: 480-103690-4

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG ID.:

Matrix: Water Date Sampled: 07/25/2016 13:45

Reporting Basis: WET Date Received: 07/27/2016 01:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	10	10	5.0	ug/L	U		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: DUP1_20160725 Lab Sample ID: 480-103690-5

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG ID.:

Matrix: Water Date Sampled: 07/25/2016 00:00

Reporting Basis: WET Date Received: 07/27/2016 01:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	10	10	5.0	ug/L	U		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MW-OB19_20160725 Lab Sample ID: 480-103690-6

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG ID.:

Matrix: Water Date Sampled: 07/25/2016 14:45

Reporting Basis: WET Date Received: 07/27/2016 01:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	140	10	5.0	ug/L			1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MW-OB23_20160725 Lab Sample ID: 480-103690-7

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG ID.:

Matrix: Water Date Sampled: 07/25/2016 15:05

Reporting Basis: WET Date Received: 07/27/2016 01:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	2500	100	50	ug/L			10	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MW-OB21_20160725 Lab Sample ID: 480-103690-8

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG ID.:

Matrix: Water Date Sampled: 07/25/2016 15:34

Reporting Basis: WET Date Received: 07/27/2016 01:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	96	10	5.0	ug/L			1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: DUP2_20160725 Lab Sample ID: 480-103690-9

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG ID.:

Matrix: Water Date Sampled: 07/25/2016 00:00

Reporting Basis: WET Date Received: 07/27/2016 01:30

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	97	10	5.0	ug/L			1	9012B

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Analyst: MDL Batch Start Date: 08/03/2016

Reporting Units: mg/L Analytical Batch No.: 314249

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
49	CCV	10:56	Cyanide, Total	0.233	0.250	93	90-110		CN CCV_00390
50	CCB	10:58	Cyanide, Total	0.010				U	
61	CCV	11:13	Cyanide, Total	0.233	0.250	93	90-110		CN CCV_00390
62	CCB	11:15	Cyanide, Total	0.010				U	
73	CCV	11:31	Cyanide, Total	0.233	0.250	93	90-110		CN CCV_00390
74	CCB	11:32	Cyanide, Total	0.010				U	
85	CCV	11:48	Cyanide, Total	0.233	0.250	93	90-110		CN CCV_00390
86	CCB	11:49	Cyanide, Total	0.010				U	
97	CCV	12:05	Cyanide, Total	0.237	0.250	95	90-110		CN CCV_00390
98	CCB	12:07	Cyanide, Total	0.010				U	
101	CCV	12:11	Cyanide, Total	0.232	0.250	93	90-110		CN CCV_00390
102	CCB	12:12	Cyanide, Total	0.010				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Analyst: MDL Batch Start Date: 08/03/2016

Reporting Units: mg/L Analytical Batch No.: 314282

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	14:24	Cyanide, Total	0.232	0.250	93	90-110		CN CCV_00390
2	CCB	14:25	Cyanide, Total	0.010				U	
5	CCV	14:30	Cyanide, Total	0.251	0.250	100	90-110		CN CCV_00390
6	CCB	14:31	Cyanide, Total	0.010				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 314249	Date: 08/03/2016 10:59	Prep Batch: 314090	Date: 08/02/2016 16:55				
9012B	MB 480-314090/1-A	Cyanide, Total	10	U	ug/L	10	1
Batch ID: 314249	Date: 08/03/2016 11:34	Prep Batch: 314091	Date: 08/02/2016 20:10				
9012B	MB 480-314091/1-A	Cyanide, Total	10	U	ug/L	10	1

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 314249	Date: 08/03/2016 11:23		Prep Batch: 314090		Date: 08/02/2016 16:55						
9012B	480-103690-4	Cyanide, Total	10	U	ug/L						
9012B	480-103690-4 MS	Cyanide, Total	93.0		ug/L	100	93	90-110			
Batch ID: 314249	Date: 08/03/2016 11:39		Prep Batch: 314091		Date: 08/02/2016 20:10						
9012B	480-103690-8	Cyanide, Total	96		ug/L						
9012B	480-103690-8 MS	Cyanide, Total	186		ug/L	100	90	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 314249	Date: 08/03/2016 11:25		Prep Batch: 314090		Date: 08/02/2016 16:55						
9012B	480-103690-4 MSD	Cyanide, Total	101		ug/L	100	101	90-110	8	15	
Batch ID: 314249	Date: 08/03/2016 11:41		Prep Batch: 314091		Date: 08/02/2016 20:10						
9012B	480-103690-8 MSD	Cyanide, Total	203		ug/L	100	107	90-110	9	15	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 314249	Date: 08/03/2016 11:00		Prep Batch: 314090			Date: 08/02/2016 16:55					
						LCS Source: WC_CN_50ppm_00167					
9012B	LCS 480-314090/2-A	Cyanide, Total	244		ug/L	250	98	90-110			
Batch ID: 314282	Date: 08/03/2016 14:27		Prep Batch: 314091			Date: 08/02/2016 20:10					
						LCS Source: WC_CN_50ppm_00167					
9012B	LCS 480-314091/2-A	Cyanide, Total	256		ug/L	250	102	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job Number: 480-103690-1

SDG Number:

Matrix: Water Instrument ID: LACHAT2

Method: 9012B MDL Date: 01/29/2010 00:00

Prep Method: 9012B

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Cyanide, Total		0.01	0.005

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job Number: 480-103690-1

SDG Number:

Matrix: Water Instrument ID: LACHAT2

Method: 9012B XMDL Date: 01/29/2010 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Cyanide, Total		0.01	0.005

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 480-314090/1-A	08/02/2016 16:55	314090		50	50
LCS 480-314090/2-A	08/02/2016 16:55	314090		50	50
480-103690-1	08/02/2016 16:55	314090		50	50
480-103690-2	08/02/2016 16:55	314090		50	50
480-103690-3	08/02/2016 16:55	314090		50	50
480-103690-4	08/02/2016 16:55	314090		50	50
480-103690-4 MS	08/02/2016 16:55	314090		50	50
480-103690-4 MSD	08/02/2016 16:55	314090		50	50
480-103690-5	08/02/2016 16:55	314090		50	50
480-103690-6	08/02/2016 16:55	314090		50	50
480-103690-7	08/02/2016 16:55	314090		50	50

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 480-314091/1-A	08/02/2016 20:10	314091		50	50
LCS 480-314091/2-A	08/02/2016 20:10	314091		50	50
480-103690-8	08/02/2016 20:10	314091		50	50
480-103690-8 MS	08/02/2016 20:10	314091		50	50
480-103690-8 MSD	08/02/2016 20:10	314091		50	50
480-103690-9	08/02/2016 20:10	314091		50	50

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Instrument ID: LACHAT2 Method: 9012B

Start Date: 08/03/2016 09:47 End Date: 08/03/2016 12:12

Lab Sample ID	D / F	Type	Time	Analytes																			
				CN																			
CCV 480-314249/1			09:47																				
CCB 480-314249/2			09:49																				
ZZZZZZ			09:50																				
ZZZZZZ			09:51																				
ZZZZZZ			09:53																				
ZZZZZZ			09:54																				
ZZZZZZ			09:56																				
ZZZZZZ			09:57																				
ZZZZZZ			09:59																				
ZZZZZZ			10:00																				
ZZZZZZ			10:02																				
ZZZZZZ			10:03																				
CCV 480-314249/13			10:04																				
CCB 480-314249/14			10:06																				
ZZZZZZ			10:07																				
ZZZZZZ			10:09																				
ZZZZZZ			10:10																				
ZZZZZZ			10:12																				
ZZZZZZ			10:13																				
ZZZZZZ			10:14																				
ZZZZZZ			10:16																				
ZZZZZZ			10:17																				
ZZZZZZ			10:19																				
ZZZZZZ			10:20																				
CCV 480-314249/25			10:22																				
CCB 480-314249/26			10:23																				
ZZZZZZ			10:25																				
ZZZZZZ			10:26																				
ZZZZZZ			10:27																				
ZZZZZZ			10:29																				
ZZZZZZ			10:30																				
ZZZZZZ			10:32																				
ZZZZZZ			10:33																				
ZZZZZZ			10:35																				
ZZZZZZ			10:36																				
ZZZZZZ			10:37																				
CCV 480-314249/37			10:39																				
CCB 480-314249/38			10:40																				
ZZZZZZ			10:42																				
ZZZZZZ			10:43																				
ZZZZZZ			10:45																				
ZZZZZZ			10:46																				

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Instrument ID: LACHAT2 Method: 9012B

Start Date: 08/03/2016 09:47 End Date: 08/03/2016 12:12

Lab Sample ID	D/F	Type	Time	Analytes																				
				CN																				
ZZZZZZ			10:48																					
ZZZZZZ			10:49																					
ZZZZZZ			10:50																					
ZZZZZZ			10:52																					
ZZZZZZ			10:53																					
ZZZZZZ			10:55																					
CCV 480-314249/49	1		10:56	X																				
CCB 480-314249/50	1		10:58	X																				
MB 480-314090/1-A	1	T	10:59	X																				
LCS 480-314090/2-A	1	T	11:00	X																				
ZZZZZZ			11:02																					
ZZZZZZ			11:03																					
ZZZZZZ			11:05																					
ZZZZZZ			11:06																					
ZZZZZZ			11:08																					
ZZZZZZ			11:09																					
ZZZZZZ			11:11																					
ZZZZZZ			11:12																					
CCV 480-314249/61	1		11:13	X																				
CCB 480-314249/62	1		11:15	X																				
ZZZZZZ			11:16																					
480-103690-1	1	T	11:18	X																				
480-103690-2	1	T	11:19	X																				
480-103690-3	1	T	11:21	X																				
480-103690-4	1	T	11:22	X																				
480-103690-4 MS	1	T	11:23	X																				
480-103690-4 MSD	1	T	11:25	X																				
480-103690-5	1	T	11:26	X																				
480-103690-6	1	T	11:28	X																				
ZZZZZZ			11:29																					
CCV 480-314249/73	1		11:31	X																				
CCB 480-314249/74	1		11:32	X																				
MB 480-314091/1-A	1	T	11:34	X																				
ZZZZZZ			11:35																					
ZZZZZZ			11:36																					
480-103690-8	1	T	11:38	X																				
480-103690-8 MS	1	T	11:39	X																				
480-103690-8 MSD	1	T	11:41	X																				
480-103690-9	1	T	11:42	X																				
ZZZZZZ			11:44																					
ZZZZZZ			11:45																					
ZZZZZZ			11:47																					

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Instrument ID: LACHAT2 Method: 9012B

Start Date: 08/03/2016 09:47 End Date: 08/03/2016 12:12

Lab Sample ID	D / F	Type	Time	Analytes																				
				CN																				
CCV 480-314249/85	1		11:48	X																				
CCB 480-314249/86	1		11:49	X																				
ZZZZZZ			11:51																					
ZZZZZZ			11:52																					
ZZZZZZ			11:54																					
ZZZZZZ			11:55																					
ZZZZZZ			11:57																					
ZZZZZZ			11:58																					
ZZZZZZ			11:59																					
ZZZZZZ			12:01																					
ZZZZZZ			12:02																					
ZZZZZZ			12:04																					
CCV 480-314249/97	1		12:05	X																				
CCB 480-314249/98	1		12:07	X																				
ZZZZZZ			12:08																					
480-103690-7	10	T	12:10	X																				
CCV 480-314249/101	1		12:11	X																				
CCB 480-314249/102	1		12:12	X																				

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Instrument ID: LACHAT2 Method: 9012B

Start Date: 08/03/2016 14:24 End Date: 08/03/2016 14:31

Lab Sample ID	D / F	Type	Time	Analytes																			
				CN																			
CCV 480-314282/1	1		14:24	X																			
CCB 480-314282/2	1		14:25	X																			
LCS 480-314091/2-A	1	T	14:27	X																			
ZZZZZZ			14:28																				
CCV 480-314282/5	1		14:30	X																			
CCB 480-314282/6	1		14:31	X																			

Prep Types

T = Total/NA

314249, 314259, 314282

Solutions:
Cyanide 335.4/9012/335.1/4500

Potassium Phosphate Buffer	**3523938**	**Exp. 02/02/2017**
Pyridine Barbituric Acid	**3525734**	**Exp. 08/10/2016**
Chloramine-T	**3525735**	**Exp. 08/04/2016**
50ppm INT STD	**3523979**	**Exp. 08/09/2016**
CN .25ppm CCV Std	**3523981**	**Exp. 08/03/2016**

LCS = 0.4mg/L, 0.25mg/L
CCV = 0.25mg/L
MS/SD = 0.1mg/L

ERA D083-541	**Actual = 101 mg/Kg** **Range = 31.4 – 170 mg/Kg**
ERA D081-541	**Actual = 54.8 mg/Kg** **Range = 20.6 - 97.8 mg/Kg**
ERA D087-541	**Actual= 39.6 mg/Kg** **Range= 13.2 - 77.3 mg/Kg**

314249

Author: BufLachat2

Date : 8/3/2016

Original Run Filename: OM_8-3-2016_09-46-52AM.OMN Created: 8/3/2016 9:46:52 AM
Original Run Author's Signature: [BufLachat2]
Current Run Filename: OM_8-3-2016_09-46-52AM.OMN Last Modified: 8/3/2016 12:15:54 PM
Current Run Author's Signature: [BufLachat2]
Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide Conc. (mg/L)	Area (V.s)	Height (V)	Detection Time
CCV	1	S9	0.234	25.4	0.664	8/3/2016@9:47:35 AM
	Known Conc:		1.50			
	Calibration:		Table/Fig. : 1			
CCB	1	S10	-0.0155	-1.11	-0.0591	8/3/2016@9:49:01 AM
	Known Conc:		0.00			
MB 480-314018/1-A	1	1	0.142	15.6	1.11	8/3/2016@9:50:28 AM
LCS 480-314018/2-A	1	2	0.389	41.7	1.10	8/3/2016@9:51:55 AM
LCS 480-314018/3-A	1	3	0.238	25.8	0.689	8/3/2016@9:53:22 AM
CCVL 480-314018/4-A	1	4	0.0831	9.35	0.249	8/3/2016@9:54:49 AM
480-103844-D-5-A	1	5	-4.09e-3	0.104	4.18e-3	8/3/2016@9:56:16 AM
480-103844-D-5-B MS	1	6	0.0960	10.7	0.282	8/3/2016@9:57:42 AM
480-103844-D-6-A	1	7	-6.14e-3	-0.113	1.76e-3	8/3/2016@9:59:09 AM
480-103844-D-6-B DU	1	8	-5.43e-3	-0.0381	-2.13e-3	8/3/2016@10:00:35 AM
480-103844-D-7-A	1	9	-6.83e-3	-0.187	-5.10e-3	8/3/2016@10:02:01 AM
480-103844-D-8-A	1	10	-4.61e-3	0.0488	3.43e-3	8/3/2016@10:03:27 AM
CCV	1	S9	0.233	25.3	0.663	8/3/2016@10:04:53 AM
	Known Conc:		100			
CCB	1	S10	-6.35e-3	-0.136	-4.59e-3	8/3/2016@10:06:19 AM
	Known Conc:		100			
480-103844-D-9-A	1	11	-5.77e-3	-0.0745	-3.27e-3	8/3/2016@10:07:45 AM
480-103844-D-9-B MS	1	12	0.0965	10.8	0.284	8/3/2016@10:09:11 AM
480-103844-D-10-A	1	13	-8.86e-3	-0.402	-0.0134	8/3/2016@10:10:37 AM
480-103844-D-11-A	1	14	-5.31e-3	-0.0255	-1.30e-3	8/3/2016@10:12:03 AM
480-103844-D-12-A	1	15	-4.62e-3	0.0475	2.75e-3	8/3/2016@10:13:28 AM
480-103844-D-13-A	1	16	-5.18e-3	-0.0112	-2.58e-3	8/3/2016@10:14:55 AM
480-103927-D-1-A	1	17	-4.44e-3	0.0674	5.97e-3	8/3/2016@10:16:22 AM
480-103927-D-2-A	1	18	-5.75e-3	-0.0724	-2.35e-3	8/3/2016@10:17:49 AM
480-103927-D-3-A	1	19	-7.03e-3	-0.208	-5.46e-3	8/3/2016@10:19:16 AM
480-103927-D-4-A	1	20	-4.07e-3	0.107	2.87e-3	8/3/2016@10:20:43 AM
CCV	1	S9	0.232	25.1	0.655	8/3/2016@10:22:09 AM
	Known Conc:		100			
CCB	1	S10	-4.75e-3	0.0341	7.72e-3	8/3/2016@10:23:35 AM
	Known Conc:		100			
MB 480-314047/1-A	1	21	-2.28e-3	0.297	0.0161	8/3/2016@10:25:01 AM
LCSSRM 480-314047/2-A^2	1	22	0.212	23.0	0.609	8/3/2016@10:26:28 AM
480-103645-E-1-A	1	23	-5.72e-3	-0.0690	-2.90e-3	8/3/2016@10:27:54 AM
480-103645-A-2-A	1	24	-4.19e-3	0.0932	4.43e-3	8/3/2016@10:29:20 AM
480-103645-B-6-C	1	25	-4.10e-3	0.103	5.74e-3	8/3/2016@10:30:46 AM
480-103645-E-9-A	1	26	-6.04e-3	-0.103	-3.52e-3	8/3/2016@10:32:13 AM
480-103645-E-1-B MS	1	27	0.0685	7.80	0.206	8/3/2016@10:33:38 AM
480-103645-A-2-B DU	1	28	-4.47e-3	0.0641	-0.0129	8/3/2016@10:35:04 AM
MB 480-314048/1-A	1	29	2.99e-3	0.855	0.414	8/3/2016@10:36:30 AM
LCS 480-314048/2-A	1	30	0.237	25.7	0.682	8/3/2016@10:37:55 AM
ccv	1	S9	0.235	25.5	0.670	8/3/2016@10:39:21 AM
	Known Conc:		100			
CCB	1	S10	-5.69e-3	-0.0655	-2.40e-3	8/3/2016@10:40:48 AM
	Known Conc:		100			
CCVL 480-314048/3-A	1	31	0.0818	9.21	0.240	8/3/2016@10:42:14 AM
480-103750-E-1-A	1	32	-4.48e-3	0.0625	0.0796	8/3/2016@10:43:41 AM
480-103750-E-1-B MS	1	33	0.0962	10.7	0.312	8/3/2016@10:45:09 AM
480-103750-E-2-A	1	34	-3.62e-3	0.154	8.16e-3	8/3/2016@10:46:35 AM
480-103750-E-2-B DU	1	35	-3.93e-3	0.121	3.54e-3	8/3/2016@10:48:02 AM
480-103750-E-3-A	1	36	-1.19e-3	0.412	0.0130	8/3/2016@10:49:29 AM
480-103750-E-4-A	1	37	-5.46e-3	-0.0410	-1.91e-3	8/3/2016@10:50:55 AM
480-103750-E-5-A	1	38	-1.26e-3	0.404	0.0106	8/3/2016@10:52:22 AM
480-103750-E-6-A	1	39	-2.16e-3	0.309	8.13e-3	8/3/2016@10:53:47 AM
480-103750-E-6-B MS	1	40	0.0913	10.2	0.272	8/3/2016@10:55:14 AM
ccv	1	S9	0.233	25.3	0.677	8/3/2016@10:56:40 AM

	Known Conc:		100			
CCB	1	S10	-4.99e-3	8.64e-3	3.14e-3	8/3/2016@10:58:06 AM
	Known Conc:		100			
MB 480-314090/1-A	1	41	-4.19e-3	0.0933	3.44e-3	8/3/2016@10:59:32 AM
LCS 480-314090/2-A	1	42	0.244	26.4	0.724	8/3/2016@11:00:58 AM
CCVL 480-314090/3-A	1	43	0.0881	9.88	0.268	8/3/2016@11:02:23 AM
480-103624-G-1-A	1	44	-6.37e-3	-0.138	-7.05e-3	8/3/2016@11:03:49 AM
480-103624-G-1-B DU	1	45	-4.03e-3	0.110	0.0102	8/3/2016@11:05:14 AM
480-103624-G-2-A	1	46	-5.86e-3	-0.0837	-3.97e-3	8/3/2016@11:06:42 AM
480-103624-G-2-B MS	1	47	0.0876	9.82	0.268	8/3/2016@11:08:09 AM
480-103624-G-3-A	1	48	-4.92e-3	0.0161	3.35e-3	8/3/2016@11:09:36 AM
480-103624-G-4-A	1	49	-6.96e-4	0.464	0.469	8/3/2016@11:11:02 AM
480-103624-G-5-A	1	50	1.61e-3	0.709	0.0231	8/3/2016@11:12:29 AM
CCV	1	S9	0.233	25.3	0.664	8/3/2016@11:13:55 AM
	Known Conc:		100			
CCB	1	S10	-6.56e-3	-0.157	-3.94e-3	8/3/2016@11:15:21 AM
	Known Conc:		100			
480-103624-G-6-A	1	51	-2.65e-3	0.256	0.0182	8/3/2016@11:16:48 AM
480-103690-A-1-A	1	52	-7.07e-3	-0.212	-6.78e-3	8/3/2016@11:18:14 AM
480-103690-A-2-A	1	53	0.370	39.8	1.18	8/3/2016@11:19:41 AM
480-103690-A-3-A	1	54	0.0569	6.58	0.191	8/3/2016@11:21:07 AM
480-103690-A-4-A	1	55	-3.64e-3	0.152	-7.08e-3	8/3/2016@11:22:33 AM
480-103690-A-4-B MS	1	56	0.0930	10.4	0.293	8/3/2016@11:23:59 AM
480-103690-A-4-C MSD	1	57	0.101	11.3	0.325	8/3/2016@11:25:25 AM
480-103690-A-5-A	1	58	-6.72e-3	-0.175	-5.41e-3	8/3/2016@11:26:51 AM
480-103690-A-6-A	1	59	0.141	15.5	0.404	8/3/2016@11:28:16 AM
480-103690-A-7-A	1	60	2.69	286	7.29	8/3/2016@11:29:42 AM
CCV	1	S9	0.233	25.3	0.688	8/3/2016@11:31:08 AM
	Known Conc:		100			
CCB	1	S10	-5.96e-3	-0.0946	-9.13e-3	8/3/2016@11:32:34 AM
	Known Conc:		100			
MB 480-314091/1-A	1	61	-4.62e-3	0.0474	-0.0158	8/3/2016@11:34:01 AM
LCS 480-314091/2-A	1	62	0.218	23.6	0.677	8/3/2016@11:35:28 AM
CCVL 480-314091/3-A	1	63	0.0758	8.57	0.238	8/3/2016@11:36:55 AM
480-103690-A-8-A	1	64	0.0964	10.8	0.296	8/3/2016@11:38:29 AM
480-103690-A-8-B MS	1	65	0.186	20.2	0.619	8/3/2016@11:39:49 AM
480-103690-A-8-C MSD	1	66	0.203	22.1	0.620	8/3/2016@11:41:15 AM
480-103690-A-9-A	1	67	0.0966	10.8	0.293	8/3/2016@11:42:42 AM
480-103678-Q-1-A	1	68	-2.28e-3	0.296	9.56e-3	8/3/2016@11:44:08 AM
480-103678-S-2-A	1	69	-1.08e-3	0.423	0.0570	8/3/2016@11:45:42 AM
480-103678-S-3-A	1	70	-4.10e-3	0.103	0.0104	8/3/2016@11:47:00 AM
CCV	1	S9	0.233	25.2	0.654	8/3/2016@11:48:26 AM
	Known Conc:		100			
CCB	1	S10	-5.92e-3	-0.0903	-0.0169	8/3/2016@11:49:52 AM
	Known Conc:		100			
480-103678-Q-4-A	1	71	-5.51e-3	-0.0468	4.12e-3	8/3/2016@11:51:19 AM
480-103678-Q-5-A	1	72	-4.88e-3	0.0209	5.18e-3	8/3/2016@11:52:44 AM
480-103678-Q-6-A	1	73	-5.40e-3	-0.0346	-5.67e-3	8/3/2016@11:54:10 AM
480-103678-Q-7-A	1	74	-3.56e-3	0.160	4.36e-3	8/3/2016@11:55:36 AM
480-103678-Q-7-B MS	1	75	0.0928	10.4	0.304	8/3/2016@11:57:02 AM
480-103678-S-8-A	1	76	-6.16e-3	-0.116	-0.0292	8/3/2016@11:58:29 AM
480-103678-S-9-A	1	77	3.71e-4	0.577	0.441	8/3/2016@11:59:56 AM
480-103678-S-10-A	1	78	-2.94e-3	0.226	-0.0116	8/3/2016@12:01:23 PM
480-103687-B-1-A	1	79	0.616	65.9	1.77	8/3/2016@12:02:50 PM
480-103687-B-2-A	1	80	8.68e-4	0.630	0.0195	8/3/2016@12:04:17 PM
CCV	1	S9	0.237	25.6	0.692	8/3/2016@12:05:42 PM
	Known Conc:		100			
CCB	1	S10	-3.82e-3	0.133	0.155	8/3/2016@12:07:09 PM
	Known Conc:		100			
MB 480-314018/1-A	1	81	-4.03e-3	0.110	6.69e-3	8/3/2016@12:08:35 PM
480-103690-A-7-A^10	1	82	0.247	26.7	0.704	8/3/2016@12:10:02 PM
CCV	1	S9	0.232	25.1	0.719	8/3/2016@12:11:27 PM
	Known Conc:		100			
CCB	1	S10	-5.55e-3	-0.0503	-7.76e-3	8/3/2016@12:12:54 PM
	Known Conc:		100			

314249

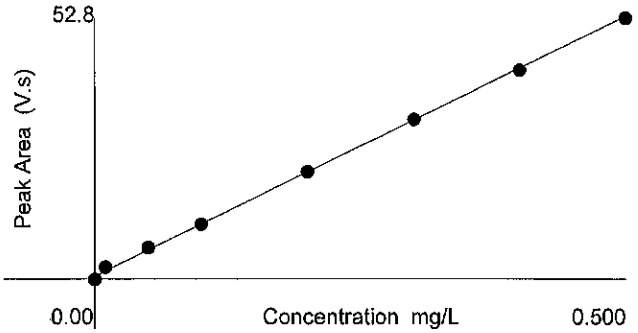
Author: BufLachat2

Date : 8/3/2016

Table : 1 (Cyanide)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	0.500	1	52.8	1.39	0.0	0.9	0.492	8/3/2016	9:22:02 AM
2	0.400	1	42.2	1.10	0.0	1.2	0.393	8/3/2016	9:23:28 AM
3	0.300	1	32.2	0.847	0.0	0.0	0.298	8/3/2016	9:24:54 AM
4	0.200	1	21.6	0.572	0.0	0.3	0.198	8/3/2016	9:26:21 AM
5	0.100	1	11.0	0.287	0.0	0.6	0.0989	8/3/2016	9:27:48 AM
6	0.0500	1	6.26	0.165	0.0	-7.4	0.0539	8/3/2016	9:29:16 AM
7	0.0100	1	2.27	0.0612	0.0	-40.8	0.0163	8/3/2016	9:30:43 AM
8	0.00	1	-0.154	-4.31e-3			-6.52e-3	8/3/2016	9:32:10 AM

Figure : 1 (Cyanide)



Area = 105 * Conc + 0.558
Conc = 9.43e-3 * Area - 5.07e-3
Correlation Coefficient (r) = 0.99944

Weighting : 1/x

Author: BufLachat2

314259

Date : 8/3/2016

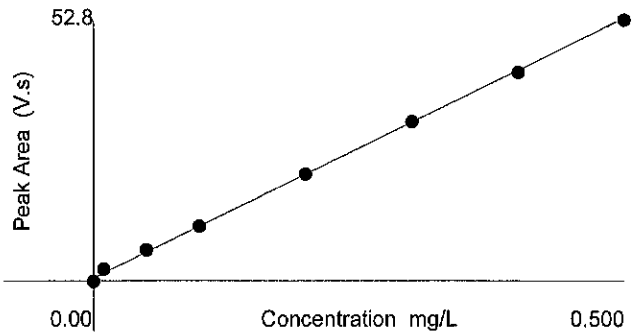
Original Run Filename: OM_8-3-2016_12-50-42PM.OMN Created: 8/3/2016 12:50:42 PM
Original Run Author's Signature: [BufLachat2]
Current Run Filename: OM_8-3-2016_12-50-42PM.OMN Last Modified: 8/3/2016 1:00:09 PM
Current Run Author's Signature: [BufLachat2]
Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide Conc. (mg/L)	Area (V.s)	Height (V)	Detection Time
CCV	1	S9	0.239	25.9	0.697	8/3/2016@12:51:24 PM
		Known Conc:	1.50			
		Calibration:	Table/Fig. : 1			
CCB	1	S10	-5.71e-3	-0.0676	-4.54e-3	8/3/2016@12:52:50 PM
		Known Conc:	0.00			
480-103687-B-1-A^2	1	1	0.311	33.5	0.937	8/3/2016@12:54:17 PM
CCV	1	S9	0.245	26.5	0.713	8/3/2016@12:55:43 PM
		Known Conc:	100			
CCB	1	S10	-3.91e-3	0.124	0.135	8/3/2016@12:57:09 PM
		Known Conc:	100			

Table : 1 (Cyanide)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	0.500	1	52.8	1.39	0.0	0.9	0.492	8/3/2016	9:22:02 AM
2	0.400	1	42.2	1.10	0.0	1.2	0.393	8/3/2016	9:23:28 AM
3	0.300	1	32.2	0.847	0.0	0.0	0.298	8/3/2016	9:24:54 AM
4	0.200	1	21.6	0.572	0.0	0.3	0.198	8/3/2016	9:26:21 AM
5	0.100	1	11.0	0.287	0.0	0.6	0.0989	8/3/2016	9:27:48 AM
6	0.0500	1	6.26	0.165	0.0	-7.4	0.0539	8/3/2016	9:29:16 AM
7	0.0100	1	2.27	0.0612	0.0	-40.8	0.0163	8/3/2016	9:30:43 AM
8	0.00	1	-0.154	-4.31e-3			-6.52e-3	8/3/2016	9:32:10 AM

Figure : 1 (Cyanide)



Area = 105 * Conc + 0.558
Conc = 9.43e-3 * Area - 5.07e-3
Correlation Coefficient (r) = 0.99944

Weighting : 1/x

314282

Author: BufLachat2

Date : 8/3/2016

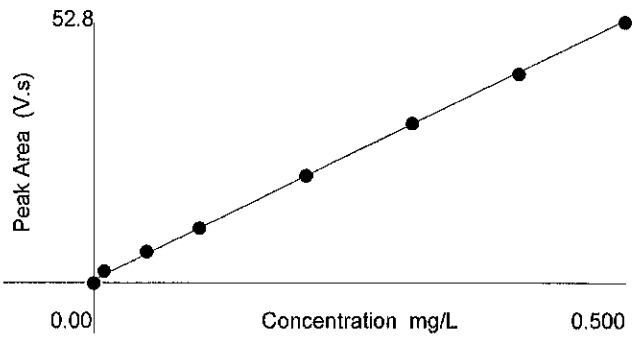
Original Run Filename: OM_8-3-2016_02-22-43PM.OMN Created: 8/3/2016 2:22:43 PM
Original Run Author's Signature: [BufLachat2]
Current Run Filename: OM_8-3-2016_02-22-43PM.OMN Last Modified: 8/3/2016 2:34:28 PM
Current Run Author's Signature: [BufLachat2]
Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide Conc. (mg/L)	Area (V.s)	Height (V)	Detection Time
CCV	1	S9	0.232	25.2	0.716	8/3/2016@2:24:15 PM
	Known Conc:		1.50			
	Calibration:		Table/Fig. : 1			
CCB	1	S10	-4.98e-3	9.69e-3	2.09e-3	8/3/2016@2:25:41 PM
	Known Conc:		0.00			
LCS 480-314091/2-A	1	1	0.256	27.7	0.727	8/3/2016@2:27:09 PM
LCS 480-314091/2-A	1	2	0.257	27.8	0.725	8/3/2016@2:28:36 PM
CCV	1	S9	0.251	27.2	0.724	8/3/2016@2:30:02 PM
	Known Conc:		100			
CCB	1	S10	-5.30e-3	-0.0240	-2.95e-3	8/3/2016@2:31:28 PM
	Known Conc:		100			

Table : 1 (Cyanide)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	0.500	1	52.8	1.39	0.0	0.9	0.492	8/3/2016	9:22:02 AM
2	0.400	1	42.2	1.10	0.0	1.2	0.393	8/3/2016	9:23:28 AM
3	0.300	1	32.2	0.847	0.0	0.0	0.298	8/3/2016	9:24:54 AM
4	0.200	1	21.6	0.572	0.0	0.3	0.198	8/3/2016	9:26:21 AM
5	0.100	1	11.0	0.287	0.0	0.6	0.0989	8/3/2016	9:27:48 AM
6	0.0500	1	6.26	0.165	0.0	-7.4	0.0539	8/3/2016	9:29:16 AM
7	0.0100	1	2.27	0.0612	0.0	-40.8	0.0163	8/3/2016	9:30:43 AM
8	0.00	1	-0.154	-4.31e-3			-6.52e-3	8/3/2016	9:32:10 AM

Figure : 1 (Cyanide)



Area = 105 * Conc + 0.558
Conc = 9.43e-3 * Area - 5.07e-3
Correlation Coefficient (r) = 0.99944

Weighting : 1/x

Historical Data Summary Report

For Batch 314249

Lab Sample ID	Client Sample	Method	Analyte	Prep Type	Unit	Data Points	Dilution	Result	Fail	3-Sigma Limits	Fail	Client Limits
480-103624-G-1-A	M20A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-2-A	M20B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-3-A	M4A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-4-A	M4B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-5-A	M22A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-6-A	M22B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-Q-1-A	M8A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-Q-4-A	M23A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-Q-5-A	M23B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-Q-6-A	M23Z	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0.007	☐	0 - 0.006
480-103678-Q-7-A	M24A	9012B	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-S-10-A	M25B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-S-2-A	M8B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0.008	☐	0 - 0.008
480-103678-S-3-A	M8Z	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-S-8-A	M24B	9012B	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-S-9-A	M25A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-10-A	G108	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-11-A	G117	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-12-A	G142	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-13-A	R126	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-5-A	G121	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-6-A	G125	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-7-A	G127	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-8-A	G128	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-9-A	G145	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103927-D-1-A	G122	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103927-D-2-A	G123	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103927-D-3-A	R124	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103927-D-4-A	G147	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0

Analyst: JL Date: 8-8-16
TALS Batch #: 314018

TestAmerica BUFFALO
Cyanide Distillation Logbook Logbook # A16-02-15

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	Blank	1	50				
LCS	400	2			400 mL	✓	
LCS	250	3			250 mL	✓	
CCVL	100	4			100 mL	✓	
103844	D-5	5					
	D-5 ms	6			100 mL	✓	
	D-6	7					
	D-6 DU	8					
	D-7	9					
	D-8	10					
	D-9	11					
	D-9 ms	12			100 mL	✓	
	D-10	13					
	D-11	14					
	D-12	15					
	D-13	16					
103927	D-1	17					
	D-2	18					
	D-3	19					
	D-4	20					

Start Time: 11:00
End Time: 12:45
Cl_2 Check: ✓
H_2S Check: ✓

Complex Cyanide Standard: 349599
Free Cyanide Standard: 351371H
$NaCH_3COO$: ~
$ZnCH_3COO$: ~
ERA Soil Lot: ~

0.25N NaOH: 351385
$MgCl_2$: 352169
H_3NSO_3: 352170
H_2SO_4: 352167
ERA Water Lot: ~

Block Temperature Check:
Block #1: Measured Temp. (°C): 124.6 Corrected Temp. (°C): 125.0 Cell #: 4
Block #2: Measured Temp. (°C): 125.0 Corrected Temp. (°C): 125.4 Cell #: 5

Reviewed By: JL Date: 8/12/16

Analyst: JL Date: 8/2/16
TALS Batch #: 314647/314648

TestAmerica BUFFALO
Cyanide Distillation Logbook Logbook # A16-02-15

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	Blank	21	50	.5712			
LCSSRM		22		.5403			
103645	E-1	23		.5985			
	A-2	24		.5355			
	B-6	25		.5141			
	E-9	26		.5681			
	E-1 ms	27		.5972	100µL	✓	
	A-2 DU	28		.5860			
MB	Blank	29					
LCS	250	30			250µL	✓	
CCVL	10c	31			100µL	✓	
103750	E-1	32					
	E-1 ms	33			100µL	✓	
	E-2	34					
	E-2 DU	35					
	E-3	36					
	E-4	37					
	E-5	38					
	E-6	39					
	E-6 ms	40			100µL	✓	

Start Time: 14:00
End Time: 15:45
Cl_2 Check: ✓
H_2S Check: ✓

Complex Cyanide Standard: 3499899
Free Cyanide Standard: 3513714
$NaCH_3COO$: —
$ZnCH_3COO$: —
ERA Soil Lot: 308640c

0.25N NaOH: 3513882
$MgCl_2$: 352 1696
H_3NSO_3: 352 1700
H_2SO_4: 3521697
ERA Water Lot: —

Block Temperature Check:
Block #1: Measured Temp. (°C): 124.9 Corrected Temp. (°C): 125.3 Cell #: 4
Block #2: Measured Temp. (°C): 125.2 Corrected Temp. (°C): 125.6 Cell #: 6

Reviewed By: JL Date: 8/2/16

Analyst: CT Date: 8-2-16
TALS Batch #: 314090

TestAmerica BUFFALO
Cyanide Distillation Logbook Logbook # A16-02-15

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	Blk	1	50ml				
LCS	@250	2			250ml	✓	
CCVL	@140	3			100ml	✓	
103624	G-1	4					
	G-1DK	5					
	G-2	6					
	G-2MS	7			100ml	✓	
	G-3	8					
	G-4	9					
	G-5	10					
~~103690~~ CT 8-2-16	~~A-16~~	11					
103690	A-1	12					
	A-2	13					
	A-3	14					
	A-4MS	15			CT 8-2-16 ~~100ml~~		
	A-4MSD	16			100ml	✓	
	A-4MSP	17			100ml	✓	
	A-5	18					
	A6	19					
	A-7	20					

Start Time: 16:55
End Time: 18:25
Cl_2 Check: ✓
H_2S Check: ✓

Complex Cyanide Standard: 3499599
Free Cyanide Standard: 3513714
$NaCH_3COO$: —
$ZnCH_3COO$: —
ERA Soil Lot: —

0.25N NaOH: 3513882
$MgCl_2$: 3521696
H_3NSO_3: 3521700
H_2SO_4: 3521697
ERA Water Lot: —

Block Temperature Check:
Block #1: Measured Temp. (°C): 124.4 Corrected Temp. (°C): 124.8 Cell #: 5
Block #2: Measured Temp. (°C): 126 Corrected Temp. (°C): 126.4 Cell #: 5

Reviewed By: CT Date: 8/2/16

Analyst: CT / DJS Date: 8-2-16
TALS Batch #: 314091

TestAmerica BUFFALO
Cyanide Distillation Logbook Logbook # A16-02-15

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	BLK	21	50ml				
LCS	@250	22			250ml	✓	
CCVL	@100	23			100ml	✓	
103690	A-8	24					
	A-8MS	25			100ml	✓	
	A-8MSD	26			100ml	✓	
	A-9	27					
103678	Q-1	28					
	S-2	29					
	S-3	30					
	Q-4	31					
	Q-5	32					
	Q-6	33					
	Q-7	34					
	Q-7MS	35			100ml	✓	
	S-8	36					
	S-9	37					
	S-10	38					
103687	B-1	39					
	B-2	40					

Start Time: 20:10
End Time: 21:40
Cl_2 Check: ✓
H_2S Check: ✓

Complex Cyanide Standard: 3499597
Free Cyanide Standard: 3513714
$NaCH_3COO$: —
$ZnCH_3COO$: —
ERA Soil Lot: —

0.25N NaOH: 3513882
$MgCl_2$: 3521696
H_3NSO_3: 3521700
H_2SO_4: 3521697
ERA Water Lot: —

Block Temperature Check: 125.2 CT 8-2-16
Block #1: Measured Temp. (°C): 124.9 Corrected Temp. (°C): 125.6 Cell #: 4
Block #2: Measured Temp. (°C): 124.4 Corrected Temp. (°C): 124.8 Cell #: 4

Reviewed By: CT Date: 8/2/16

Cyanide Distillation BF-WC-LB-004
Rev. 1 March 22, 2016

92/200

314249, 314259, 314282

Solutions:
Cyanide 335.4/9012/335.1/4500

Potassium Phosphate Buffer	**3523938**	**Exp. 02/02/2017**
Pyridine Barbituric Acid	**3525734**	**Exp. 08/10/2016**
Chloramine-T	**3525735**	**Exp. 08/04/2016**
50ppm INT STD	**3523979**	**Exp. 08/09/2016**
CN .25ppm CCV Std	**3523981**	**Exp. 08/03/2016**

LCS = 0.4mg/L, 0.25mg/L
CCV = 0.25mg/L
MS/SD = 0.1mg/L

ERA D083-541	**Actual = 101 mg/Kg** **Range = 31.4 – 170 mg/Kg**
ERA D081-541	**Actual = 54.8 mg/Kg** **Range = 20.6 - 97.8 mg/Kg**
ERA D087-541	**Actual= 39.6 mg/Kg** **Range= 13.2 - 77.3 mg/Kg**

314249

Author: BufLachat2

Date : 8/3/2016

Original Run Filename: OM_8-3-2016_09-46-52AM.OMN Created: 8/3/2016 9:46:52 AM
Original Run Author's Signature: [BufLachat2]
Current Run Filename: OM_8-3-2016_09-46-52AM.OMN Last Modified: 8/3/2016 12:15:54 PM
Current Run Author's Signature: [BufLachat2]
Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide Conc. (mg/L)	Area (V.s)	Height (V)	Detection Time
CCV	1	S9	0.234	25.4	0.664	8/3/2016@9:47:35 AM
	Known Conc:		1.50			
	Calibration:		Table/Fig. : 1			
CCB	1	S10	-0.0155	-1.11	-0.0591	8/3/2016@9:49:01 AM
	Known Conc:		0.00			
MB 480-314018/1-A	1	1	0.142	15.6	1.11	8/3/2016@9:50:28 AM
LCS 480-314018/2-A	1	2	0.389	41.7	1.10	8/3/2016@9:51:55 AM
LCS 480-314018/3-A	1	3	0.238	25.8	0.689	8/3/2016@9:53:22 AM
CCVL 480-314018/4-A	1	4	0.0831	9.35	0.249	8/3/2016@9:54:49 AM
480-103844-D-5-A	1	5	-4.09e-3	0.104	4.18e-3	8/3/2016@9:56:16 AM
480-103844-D-5-B MS	1	6	0.0960	10.7	0.282	8/3/2016@9:57:42 AM
480-103844-D-6-A	1	7	-6.14e-3	-0.113	1.76e-3	8/3/2016@9:59:09 AM
480-103844-D-6-B DU	1	8	-5.43e-3	-0.0381	-2.13e-3	8/3/2016@10:00:35 AM
480-103844-D-7-A	1	9	-6.83e-3	-0.187	-5.10e-3	8/3/2016@10:02:01 AM
480-103844-D-8-A	1	10	-4.61e-3	0.0488	3.43e-3	8/3/2016@10:03:27 AM
CCV	1	S9	0.233	25.3	0.663	8/3/2016@10:04:53 AM
	Known Conc:		100			
CCB	1	S10	-6.35e-3	-0.136	-4.59e-3	8/3/2016@10:06:19 AM
	Known Conc:		100			
480-103844-D-9-A	1	11	-5.77e-3	-0.0745	-3.27e-3	8/3/2016@10:07:45 AM
480-103844-D-9-B MS	1	12	0.0965	10.8	0.284	8/3/2016@10:09:11 AM
480-103844-D-10-A	1	13	-8.86e-3	-0.402	-0.0134	8/3/2016@10:10:37 AM
480-103844-D-11-A	1	14	-5.31e-3	-0.0255	-1.30e-3	8/3/2016@10:12:03 AM
480-103844-D-12-A	1	15	-4.62e-3	0.0475	2.75e-3	8/3/2016@10:13:28 AM
480-103844-D-13-A	1	16	-5.18e-3	-0.0112	-2.58e-3	8/3/2016@10:14:55 AM
480-103927-D-1-A	1	17	-4.44e-3	0.0674	5.97e-3	8/3/2016@10:16:22 AM
480-103927-D-2-A	1	18	-5.75e-3	-0.0724	-2.35e-3	8/3/2016@10:17:49 AM
480-103927-D-3-A	1	19	-7.03e-3	-0.208	-5.46e-3	8/3/2016@10:19:16 AM
480-103927-D-4-A	1	20	-4.07e-3	0.107	2.87e-3	8/3/2016@10:20:43 AM
CCV	1	S9	0.232	25.1	0.655	8/3/2016@10:22:09 AM
	Known Conc:		100			
CCB	1	S10	-4.75e-3	0.0341	7.72e-3	8/3/2016@10:23:35 AM
	Known Conc:		100			
MB 480-314047/1-A	1	21	-2.28e-3	0.297	0.0161	8/3/2016@10:25:01 AM
LCSSRM 480-314047/2-A^2	1	22	0.212	23.0	0.609	8/3/2016@10:26:28 AM
480-103645-E-1-A	1	23	-5.72e-3	-0.0690	-2.90e-3	8/3/2016@10:27:54 AM
480-103645-A-2-A	1	24	-4.19e-3	0.0932	4.43e-3	8/3/2016@10:29:20 AM
480-103645-B-6-C	1	25	-4.10e-3	0.103	5.74e-3	8/3/2016@10:30:46 AM
480-103645-E-9-A	1	26	-6.04e-3	-0.103	-3.52e-3	8/3/2016@10:32:13 AM
480-103645-E-1-B MS	1	27	0.0685	7.80	0.206	8/3/2016@10:33:38 AM
480-103645-A-2-B DU	1	28	-4.47e-3	0.0641	-0.0129	8/3/2016@10:35:04 AM
MB 480-314048/1-A	1	29	2.99e-3	0.855	0.414	8/3/2016@10:36:30 AM
LCS 480-314048/2-A	1	30	0.237	25.7	0.682	8/3/2016@10:37:55 AM
ccv	1	S9	0.235	25.5	0.670	8/3/2016@10:39:21 AM
	Known Conc:		100			
CCB	1	S10	-5.69e-3	-0.0655	-2.40e-3	8/3/2016@10:40:48 AM
	Known Conc:		100			
CCVL 480-314048/3-A	1	31	0.0818	9.21	0.240	8/3/2016@10:42:14 AM
480-103750-E-1-A	1	32	-4.48e-3	0.0625	0.0796	8/3/2016@10:43:41 AM
480-103750-E-1-B MS	1	33	0.0962	10.7	0.312	8/3/2016@10:45:09 AM
480-103750-E-2-A	1	34	-3.62e-3	0.154	8.16e-3	8/3/2016@10:46:35 AM
480-103750-E-2-B DU	1	35	-3.93e-3	0.121	3.54e-3	8/3/2016@10:48:02 AM
480-103750-E-3-A	1	36	-1.19e-3	0.412	0.0130	8/3/2016@10:49:29 AM
480-103750-E-4-A	1	37	-5.46e-3	-0.0410	-1.91e-3	8/3/2016@10:50:55 AM
480-103750-E-5-A	1	38	-1.26e-3	0.404	0.0106	8/3/2016@10:52:22 AM
480-103750-E-6-A	1	39	-2.16e-3	0.309	8.13e-3	8/3/2016@10:53:47 AM
480-103750-E-6-B MS	1	40	0.0913	10.2	0.272	8/3/2016@10:55:14 AM
ccv	1	S9	0.233	25.3	0.677	8/3/2016@10:56:40 AM

	Known Conc:		100			
CCB	1	S10	-4.99e-3	8.64e-3	3.14e-3	8/3/2016@10:58:06 AM
	Known Conc:		100			
MB 480-314090/1-A	1	41	-4.19e-3	0.0933	3.44e-3	8/3/2016@10:59:32 AM
LCS 480-314090/2-A	1	42	0.244	26.4	0.724	8/3/2016@11:00:58 AM
CCVL 480-314090/3-A	1	43	0.0881	9.88	0.268	8/3/2016@11:02:23 AM
480-103624-G-1-A	1	44	-6.37e-3	-0.138	-7.05e-3	8/3/2016@11:03:49 AM
480-103624-G-1-B DU	1	45	-4.03e-3	0.110	0.0102	8/3/2016@11:05:14 AM
480-103624-G-2-A	1	46	-5.86e-3	-0.0837	-3.97e-3	8/3/2016@11:06:42 AM
480-103624-G-2-B MS	1	47	0.0876	9.82	0.268	8/3/2016@11:08:09 AM
480-103624-G-3-A	1	48	-4.92e-3	0.0161	3.35e-3	8/3/2016@11:09:36 AM
480-103624-G-4-A	1	49	-6.96e-4	0.464	0.469	8/3/2016@11:11:02 AM
480-103624-G-5-A	1	50	1.61e-3	0.709	0.0231	8/3/2016@11:12:29 AM
CCV	1	S9	0.233	25.3	0.664	8/3/2016@11:13:55 AM
	Known Conc:		100			
CCB	1	S10	-6.56e-3	-0.157	-3.94e-3	8/3/2016@11:15:21 AM
	Known Conc:		100			
480-103624-G-6-A	1	51	-2.65e-3	0.256	0.0182	8/3/2016@11:16:48 AM
480-103690-A-1-A	1	52	-7.07e-3	-0.212	-6.78e-3	8/3/2016@11:18:14 AM
480-103690-A-2-A	1	53	0.370	39.8	1.18	8/3/2016@11:19:41 AM
480-103690-A-3-A	1	54	0.0569	6.58	0.191	8/3/2016@11:21:07 AM
480-103690-A-4-A	1	55	-3.64e-3	0.152	-7.08e-3	8/3/2016@11:22:33 AM
480-103690-A-4-B MS	1	56	0.0930	10.4	0.293	8/3/2016@11:23:59 AM
480-103690-A-4-C MSD	1	57	0.101	11.3	0.325	8/3/2016@11:25:25 AM
480-103690-A-5-A	1	58	-6.72e-3	-0.175	-5.41e-3	8/3/2016@11:26:51 AM
480-103690-A-6-A	1	59	0.141	15.5	0.404	8/3/2016@11:28:16 AM
480-103690-A-7-A	1	60	2.69	286	7.29	8/3/2016@11:29:42 AM
CCV	1	S9	0.233	25.3	0.688	8/3/2016@11:31:08 AM
	Known Conc:		100			
CCB	1	S10	-5.96e-3	-0.0946	-9.13e-3	8/3/2016@11:32:34 AM
	Known Conc:		100			
MB 480-314091/1-A	1	61	-4.62e-3	0.0474	-0.0158	8/3/2016@11:34:01 AM
LCS 480-314091/2-A	1	62	0.218	23.6	0.677	8/3/2016@11:35:28 AM
CCVL 480-314091/3-A	1	63	0.0758	8.57	0.238	8/3/2016@11:36:55 AM
480-103690-A-8-A	1	64	0.0964	10.8	0.296	8/3/2016@11:38:29 AM
480-103690-A-8-B MS	1	65	0.186	20.2	0.619	8/3/2016@11:39:49 AM
480-103690-A-8-C MSD	1	66	0.203	22.1	0.620	8/3/2016@11:41:15 AM
480-103690-A-9-A	1	67	0.0966	10.8	0.293	8/3/2016@11:42:42 AM
480-103678-Q-1-A	1	68	-2.28e-3	0.296	9.56e-3	8/3/2016@11:44:08 AM
480-103678-S-2-A	1	69	-1.08e-3	0.423	0.0570	8/3/2016@11:45:42 AM
480-103678-S-3-A	1	70	-4.10e-3	0.103	0.0104	8/3/2016@11:47:00 AM
CCV	1	S9	0.233	25.2	0.654	8/3/2016@11:48:26 AM
	Known Conc:		100			
CCB	1	S10	-5.92e-3	-0.0903	-0.0169	8/3/2016@11:49:52 AM
	Known Conc:		100			
480-103678-Q-4-A	1	71	-5.51e-3	-0.0468	4.12e-3	8/3/2016@11:51:19 AM
480-103678-Q-5-A	1	72	-4.88e-3	0.0209	5.18e-3	8/3/2016@11:52:44 AM
480-103678-Q-6-A	1	73	-5.40e-3	-0.0346	-5.67e-3	8/3/2016@11:54:10 AM
480-103678-Q-7-A	1	74	-3.56e-3	0.160	4.36e-3	8/3/2016@11:55:36 AM
480-103678-Q-7-B MS	1	75	0.0928	10.4	0.304	8/3/2016@11:57:02 AM
480-103678-S-8-A	1	76	-6.16e-3	-0.116	-0.0292	8/3/2016@11:58:29 AM
480-103678-S-9-A	1	77	3.71e-4	0.577	0.441	8/3/2016@11:59:56 AM
480-103678-S-10-A	1	78	-2.94e-3	0.226	-0.0116	8/3/2016@12:01:23 PM
480-103687-B-1-A	1	79	0.616	65.9	1.77	8/3/2016@12:02:50 PM
480-103687-B-2-A	1	80	8.68e-4	0.630	0.0195	8/3/2016@12:04:17 PM
CCV	1	S9	0.237	25.6	0.692	8/3/2016@12:05:42 PM
	Known Conc:		100			
CCB	1	S10	-3.82e-3	0.133	0.155	8/3/2016@12:07:09 PM
	Known Conc:		100			
MB 480-314018/1-A	1	81	-4.03e-3	0.110	6.69e-3	8/3/2016@12:08:35 PM
480-103690-A-7-A^10	1	82	0.247	26.7	0.704	8/3/2016@12:10:02 PM
CCV	1	S9	0.232	25.1	0.719	8/3/2016@12:11:27 PM
	Known Conc:		100			
CCB	1	S10	-5.55e-3	-0.0503	-7.76e-3	8/3/2016@12:12:54 PM
	Known Conc:		100			

314249

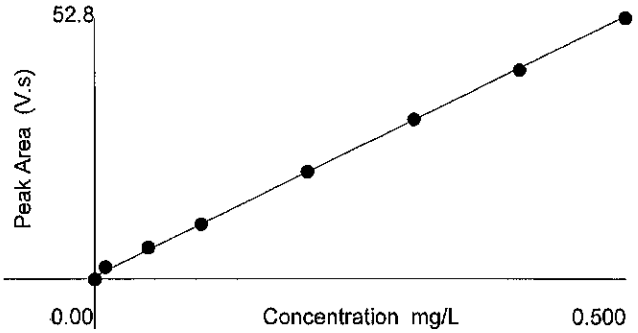
Author: BufLachat2

Date : 8/3/2016

Table : 1 (Cyanide)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	0.500	1	52.8	1.39	0.0	0.9	0.492	8/3/2016	9:22:02 AM
2	0.400	1	42.2	1.10	0.0	1.2	0.393	8/3/2016	9:23:28 AM
3	0.300	1	32.2	0.847	0.0	0.0	0.298	8/3/2016	9:24:54 AM
4	0.200	1	21.6	0.572	0.0	0.3	0.198	8/3/2016	9:26:21 AM
5	0.100	1	11.0	0.287	0.0	0.6	0.0989	8/3/2016	9:27:48 AM
6	0.0500	1	6.26	0.165	0.0	-7.4	0.0539	8/3/2016	9:29:16 AM
7	0.0100	1	2.27	0.0612	0.0	-40.8	0.0163	8/3/2016	9:30:43 AM
8	0.00	1	-0.154	-4.31e-3			-6.52e-3	8/3/2016	9:32:10 AM

Figure : 1 (Cyanide)



Area = 105 * Conc + 0.558
Conc = 9.43e-3 * Area - 5.07e-3
Correlation Coefficient (r) = 0.99944

Weighting : 1/x

Author: BufLachat2

314259

Date : 8/3/2016

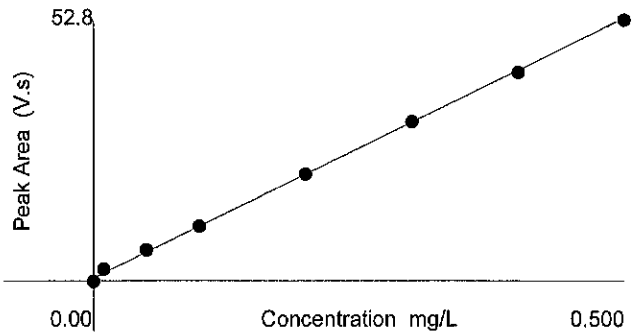
Original Run Filename: OM_8-3-2016_12-50-42PM.OMN Created: 8/3/2016 12:50:42 PM
Original Run Author's Signature: [BufLachat2]
Current Run Filename: OM_8-3-2016_12-50-42PM.OMN Last Modified: 8/3/2016 1:00:09 PM
Current Run Author's Signature: [BufLachat2]
Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide Conc. (mg/L)	Area (V.s)	Height (V)	Detection Time
CCV	1	S9	0.239	25.9	0.697	8/3/2016@12:51:24 PM
	Known Conc:		1.50			
	Calibration:		Table/Fig. : 1			
CCB	1	S10	-5.71e-3	-0.0676	-4.54e-3	8/3/2016@12:52:50 PM
	Known Conc:		0.00			
480-103687-B-1-A^2	1	1	0.311	33.5	0.937	8/3/2016@12:54:17 PM
CCV	1	S9	0.245	26.5	0.713	8/3/2016@12:55:43 PM
	Known Conc:		100			
CCB	1	S10	-3.91e-3	0.124	0.135	8/3/2016@12:57:09 PM
	Known Conc:		100			

Table : 1 (Cyanide)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	0.500	1	52.8	1.39	0.0	0.9	0.492	8/3/2016	9:22:02 AM
2	0.400	1	42.2	1.10	0.0	1.2	0.393	8/3/2016	9:23:28 AM
3	0.300	1	32.2	0.847	0.0	0.0	0.298	8/3/2016	9:24:54 AM
4	0.200	1	21.6	0.572	0.0	0.3	0.198	8/3/2016	9:26:21 AM
5	0.100	1	11.0	0.287	0.0	0.6	0.0989	8/3/2016	9:27:48 AM
6	0.0500	1	6.26	0.165	0.0	-7.4	0.0539	8/3/2016	9:29:16 AM
7	0.0100	1	2.27	0.0612	0.0	-40.8	0.0163	8/3/2016	9:30:43 AM
8	0.00	1	-0.154	-4.31e-3			-6.52e-3	8/3/2016	9:32:10 AM

Figure : 1 (Cyanide)



Area = 105 * Conc + 0.558
Conc = 9.43e-3 * Area - 5.07e-3
Correlation Coefficient (r) = 0.99944

Weighting : 1/x

314282

Author: BufLachat2

Date : 8/3/2016

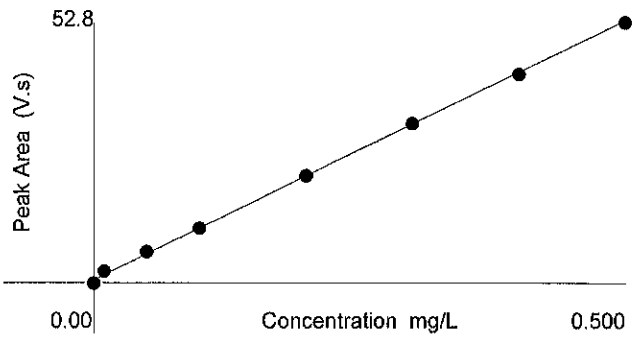
Original Run Filename: OM_8-3-2016_02-22-43PM.OMN Created: 8/3/2016 2:22:43 PM
Original Run Author's Signature: [BufLachat2]
Current Run Filename: OM_8-3-2016_02-22-43PM.OMN Last Modified: 8/3/2016 2:34:28 PM
Current Run Author's Signature: [BufLachat2]
Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide Conc. (mg/L)	Area (V.s)	Height (V)	Detection Time
CCV	1	S9	0.232	25.2	0.716	8/3/2016@2:24:15 PM
	Known Conc:		1.50			
	Calibration:		Table/Fig. : 1			
CCB	1	S10	-4.98e-3	9.69e-3	2.09e-3	8/3/2016@2:25:41 PM
	Known Conc:		0.00			
LCS 480-314091/2-A	1	1	0.256	27.7	0.727	8/3/2016@2:27:09 PM
LCS 480-314091/2-A	1	2	0.257	27.8	0.725	8/3/2016@2:28:36 PM
CCV	1	S9	0.251	27.2	0.724	8/3/2016@2:30:02 PM
	Known Conc:		100			
CCB	1	S10	-5.30e-3	-0.0240	-2.95e-3	8/3/2016@2:31:28 PM
	Known Conc:		100			

Table : 1 (Cyanide)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	0.500	1	52.8	1.39	0.0	0.9	0.492	8/3/2016	9:22:02 AM
2	0.400	1	42.2	1.10	0.0	1.2	0.393	8/3/2016	9:23:28 AM
3	0.300	1	32.2	0.847	0.0	0.0	0.298	8/3/2016	9:24:54 AM
4	0.200	1	21.6	0.572	0.0	0.3	0.198	8/3/2016	9:26:21 AM
5	0.100	1	11.0	0.287	0.0	0.6	0.0989	8/3/2016	9:27:48 AM
6	0.0500	1	6.26	0.165	0.0	-7.4	0.0539	8/3/2016	9:29:16 AM
7	0.0100	1	2.27	0.0612	0.0	-40.8	0.0163	8/3/2016	9:30:43 AM
8	0.00	1	-0.154	-4.31e-3			-6.52e-3	8/3/2016	9:32:10 AM

Figure : 1 (Cyanide)



Area = 105 * Conc + 0.558
Conc = 9.43e-3 * Area - 5.07e-3
Correlation Coefficient (r) = 0.99944

Weighting : 1/x

Historical Data Summary Report

For Batch 314249

Lab Sample ID	Client Sample	Method	Analyte	Prep Type	Unit	Data Points	Dilution	Result	Fail	3-Sigma Limits	Fail	Client Limits
480-103624-G-1-A	M20A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-2-A	M20B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-3-A	M4A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-4-A	M4B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-5-A	M22A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103624-G-6-A	M22B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-Q-1-A	M8A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-Q-4-A	M23A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-Q-5-A	M23B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-Q-6-A	M23Z	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0.007	☐	0 - 0.006
480-103678-Q-7-A	M24A	9012B	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-S-10-A	M25B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-S-2-A	M8B	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0.008	☐	0 - 0.008
480-103678-S-3-A	M8Z	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-S-8-A	M24B	9012B	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103678-S-9-A	M25A	9012B	Cyanide, Total	Total/NA	mg/L	6	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-10-A	G108	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-11-A	G117	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-12-A	G142	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-13-A	R126	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-5-A	G121	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-6-A	G125	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-7-A	G127	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-8-A	G128	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103844-D-9-A	G145	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103927-D-1-A	G122	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103927-D-2-A	G123	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103927-D-3-A	R124	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0
480-103927-D-4-A	G147	335.4	Cyanide, Total	Total/NA	mg/L	8	1.0	ND	☐	0 - 0	☐	0 - 0

Analyst: JL Date: 8-8-16
TALS Batch #: 314018

TestAmerica BUFFALO
Cyanide Distillation Logbook Logbook # A16-02-15

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	Blank	1	50				
LCS	400	2			400 mL	✓	
LCS	250	3			250 mL	✓	
CCVL	100	4			100 mL	✓	
103844	D-5	5					
	D-5 ms	6			100 mL	✓	
	D-6	7					
	D-6 DU	8					
	D-7	9					
	D-8	10					
	D-9	11					
	D-9 ms	12			100 mL	✓	
	D-10	13					
	D-11	14					
	D-12	15					
	D-13	16					
103927	D-1	17					
	D-2	18					
	D-3	19					
	D-4	20					

Start Time: 11:00
End Time: 12:45
Cl_2 Check: ✓
H_2S Check: ✓

Complex Cyanide Standard: 349599
Free Cyanide Standard: 351371
$NaCH_3COO$: ~
$ZnCH_3COO$: ~
ERA Soil Lot: ~

0.25N NaOH: 351385
$MgCl_2$: 352169
H_3NSO_3: 352170
H_2SO_4: 352167
ERA Water Lot: ~

Block Temperature Check:
Block #1: Measured Temp. (°C): 12.6 Corrected Temp. (°C): 12.8 Cell #: 4
Block #2: Measured Temp. (°C): 12.8 Corrected Temp. (°C): 12.4 Cell #: 5

Reviewed By: JL Date: 8/12/16

Analyst: JL Date: 8/2/16
TALS Batch #: 314647/314648

TestAmerica BUFFALO
Cyanide Distillation Logbook Logbook # A16-02-15

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	Blank	21	50	.5712			
LCSSRM		22		.5403			
103645	E-1	23		.5985			
	A-2	24		.5355			
	B-6	25		.5141			
	E-9	26		.5681			
	E-1 ms	27		.5972	100µL	✓	
	A-2 DU	28		.5860			
MB	Blank	29					
LCS	250	30			250µL	✓	
CCVL	10c	31			100µL	✓	
103750	E-1	32					
	E-1 ms	33			100µL	✓	
	E-2	34					
	E-2 DU	35					
	E-3	36					
	E-4	37					
	E-5	38					
	E-6	39					
	E-6 ms	40			100µL	✓	

Start Time: 14:00
End Time: 15:45
Cl_2 Check: ✓
H_2S Check: ✓

Complex Cyanide Standard: 3499899
Free Cyanide Standard: 3513714
$NaCH_3COO$: —
$ZnCH_3COO$: —
ERA Soil Lot: 308640c

0.25N NaOH: 3513882
$MgCl_2$: 352 1696
H_3NSO_3: 352 1700
H_2SO_4: 3521697
ERA Water Lot: —

Block Temperature Check:
Block #1: Measured Temp. (°C): 124.9 Corrected Temp. (°C): 125.3 Cell #: 4
Block #2: Measured Temp. (°C): 125.2 Corrected Temp. (°C): 125.6 Cell #: 6

Reviewed By: JL Date: 8/2/16

Analyst: CT Date: 8-2-16
TALS Batch #: 314090

TestAmerica BUFFALO
Cyanide Distillation Logbook Logbook # A16-02-15

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	Blk	1	50ml				
LCS	@250	2			250ml	✓	
CCVL	@140	3			100ml	✓	
103624	G-1	4					
	G-1DK	5					
	G-2	6					
	G-2MS	7			100ml	✓	
	G-3	8					
	G-4	9					
	G-5	10					
~~103690~~ CT 8-2-16	~~A-16~~	11					
103690	A-1	12					
	A-2	13					
	A-3	14					
	A-4MS	15			CT 8-2-16 ~~100ml~~		
	A-4MSD	16			100ml	✓	
	A-4MSP	17			100ml	✓	
	A-5	18					
	A6	19					
	A-7	20					

Start Time: 16:55
End Time: 18:25
Cl_2 Check: ✓
H_2S Check: ✓

Complex Cyanide Standard: 3499599
Free Cyanide Standard: 3513714
$NaCH_3COO$: —
$ZnCH_3COO$: —
ERA Soil Lot: —

0.25N NaOH: 3513882
$MgCl_2$: 3521696
H_3NSO_3: 3521700
H_2SO_4: 3521697
ERA Water Lot: —

Block Temperature Check:
Block #1: Measured Temp. (°C): 124.4 Corrected Temp. (°C): 124.8 Cell #: 5
Block #2: Measured Temp. (°C): 126 Corrected Temp. (°C): 126.4 Cell #: 5

Reviewed By: CT Date: 8/2/16

Analyst: CT / DJS Date: 8-2-16
TALS Batch #: 314091

TestAmerica BUFFALO
Cyanide Distillation Logbook Logbook # A16-02-15

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	BLK	21	50ml				
LCS	@250	22			250ml	✓	
CCVL	@100	23			100ml	✓	
103690	A-8	24					
	A-8MS	25			100ml	✓	
	A-8MSD	26			100ml	✓	
	A-9	27					
103678	Q-1	28					
	S-2	29					
	S-3	30					
	Q-4	31					
	Q-5	32					
	Q-6	33					
	Q-7	34					
	Q-7MS	35			100ml	✓	
	S-8	36					
	S-9	37					
	S-10	38					
103687	B-1	39					
	B-2	40					

Start Time: 20:10
End Time: 21:40
Cl_2 Check: ✓
H_2S Check: ✓

Complex Cyanide Standard: 3499597
Free Cyanide Standard: 3513714
$NaCH_3COO$: —
$ZnCH_3COO$: —
ERA Soil Lot: —

0.25N NaOH: 3513882
$MgCl_2$: 3521696
H_3NSO_3: 3521700
H_2SO_4: 3521697
ERA Water Lot: —

Block Temperature Check: 125.2 ct 8-2-16
Block #1: Measured Temp. (°C): 124.9 Corrected Temp. (°C): 125.6 Cell #: 4
Block #2: Measured Temp. (°C): 124.4 Corrected Temp. (°C): 124.8 Cell #: 4

Reviewed By: CT Date: 8/2/16

Cyanide Distillation BF-WC-LB-004
Rev. 1 March 22, 2016

92/200

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Batch Number: 314090 Batch Start Date: 08/02/16 16:55 Batch Analyst: Thomas, Christine L

Batch Method: 9012B Batch End Date: 08/02/16 18:25

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	WC_CN_50ppm 00167			
MB 480-314090/1		9012B, 9012B		50 mL	50 mL				
LCS 480-314090/2		9012B, 9012B		50 mL	50 mL	250 uL			
480-103690-A-1	EB_20160725	9012B, 9012B	T	50 mL	50 mL				
480-103690-A-2	MW-OB17_20160725	9012B, 9012B	T	50 mL	50 mL				
480-103690-A-3	MW-OB18_20160725	9012B, 9012B	T	50 mL	50 mL				
480-103690-A-4	SG-11_20160725	9012B, 9012B	T	50 mL	50 mL				
480-103690-A-4 MS	SG-11_20160725	9012B, 9012B	T	50 mL	50 mL	100 uL			
480-103690-A-4 MSD	SG-11_20160725	9012B, 9012B	T	50 mL	50 mL	100 uL			
480-103690-A-5	DUP1_20160725	9012B, 9012B	T	50 mL	50 mL				
480-103690-A-6	MW-OB19_20160725	9012B, 9012B	T	50 mL	50 mL				
480-103690-A-7	MW-OB23_20160725	9012B, 9012B	T	50 mL	50 mL				

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Batch Number: 314091 Batch Start Date: 08/02/16 20:10 Batch Analyst: Thomas, Christine L

Batch Method: 9012B Batch End Date: 08/02/16 21:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	WC_CN_50ppm 00167			
MB 480-314091/1		9012B, 9012B		50 mL	50 mL				
LCS 480-314091/2		9012B, 9012B		50 mL	50 mL	250 uL			
480-103690-A-8	MW-OB21_20160725	9012B, 9012B	T	50 mL	50 mL				
480-103690-A-8 MS	MW-OB21_20160725	9012B, 9012B	T	50 mL	50 mL	100 uL			
480-103690-A-8 MSD	MW-OB21_20160725	9012B, 9012B	T	50 mL	50 mL	100 uL			
480-103690-A-9	DUP2_20160725	9012B, 9012B	T	50 mL	50 mL				

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Batch Number: 314249 Batch Start Date: 08/03/16 09:47 Batch Analyst: Leader, Michael D

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CCV 00390			
CCV 480-314249/49		9012B		5 mL	5 mL	5 mL			
CCB 480-314249/50		9012B		5 mL	5 mL				
MB 480-314090/1-A		9012B		5 mL	5 mL				
LCS 480-314090/2-A		9012B		5 mL	5 mL				
CCV 480-314249/61		9012B		5 mL	5 mL	5 mL			
CCB 480-314249/62		9012B		5 mL	5 mL				
480-103690-A-1-A	EB_20160725	9012B	T	5 mL	5 mL				
480-103690-A-2-A	MW-OB17_20160725	9012B	T	5 mL	5 mL				
480-103690-A-3-A	MW-OB18_20160725	9012B	T	5 mL	5 mL				
480-103690-A-4-A	SG-11_20160725	9012B	T	5 mL	5 mL				
480-103690-A-4-B MS	SG-11_20160725	9012B	T	5 mL	5 mL				
480-103690-A-4-C MSD	SG-11_20160725	9012B	T	5 mL	5 mL				
480-103690-A-5-A	DUP1_20160725	9012B	T	5 mL	5 mL				
480-103690-A-6-A	MW-OB19_20160725	9012B	T	5 mL	5 mL				
CCV 480-314249/73		9012B		5 mL	5 mL	5 mL			
CCB 480-314249/74		9012B		5 mL	5 mL				
MB 480-314091/1-A		9012B		5 mL	5 mL				
480-103690-A-8-A	MW-OB21_20160725	9012B	T	5 mL	5 mL				
480-103690-A-8-B MS	MW-OB21_20160725	9012B	T	5 mL	5 mL				
480-103690-A-8-C MSD	MW-OB21_20160725	9012B	T	5 mL	5 mL				
480-103690-A-9-A	DUP2_20160725	9012B	T	5 mL	5 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Batch Number: 314249 Batch Start Date: 08/03/16 09:47 Batch Analyst: Leader, Michael D

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CCV 00390			
CCV 480-314249/85		9012B		5 mL	5 mL	5 mL			
CCB 480-314249/86		9012B		5 mL	5 mL				
CCV 480-314249/97		9012B		5 mL	5 mL	5 mL			
CCB 480-314249/98		9012B		5 mL	5 mL				
480-103690-A-7-A ^10	MW-OB23_20160725	9012B	T	5 mL	5 mL				
CCV 480-314249/101		9012B		5 mL	5 mL	5 mL			
CCB 480-314249/102		9012B		5 mL	5 mL				

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-103690-1

SDG No.:

Batch Number: 314282 Batch Start Date: 08/03/16 14:24 Batch Analyst: Leader, Michael D

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CCV 00390			
CCV 480-314282/1		9012B		5 mL	5 mL	5 mL			
CCB 480-314282/2		9012B		5 mL	5 mL				
LCS 480-314091/2-A		9012B		5 mL	5 mL				
CCV 480-314282/5		9012B		5 mL	5 mL	5 mL			
CCB 480-314282/6		9012B		5 mL	5 mL				

Batch Notes	

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

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

480501-Albany

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRO

480-103690 COC

Client Information	Sampler: Bryan Reles	Lab PM: Smith, Kathryn E	Carrier Tracking No(s):	COC No: 680-76228-31646.1
Client Contact: Mr. Jim Vondracek	Phone: 607-765-1480	E-Mail: kathy.smith@testamericainc.com		Page: Page 1 of 1
Company: Ashland Inc				Job #:
Address: 5200 Blazer Parkway DS-4	Due Date Requested:			
City: Dublin	TAT Requested (days):			
State, Zip: OH, 43017				
Phone: 614-790-6146(Tel)	PO #: 4502471936			
Email: jevondracek@ashland.com	WO #:			
Project Name: Hercules Glens Falls O&M 2016 Semi-Annual July 2016	Project #: 68000956			
Site: Ashland Glens Falls	SSOW#:			

Analysis Requ

480-103690 Chain of Custody

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9012B - Cyanide, Total	7196A - Chromium, hexavalent	6020A - Dissolved Chromium	2540C_Calcd - Total Dissolved Solids	2340C - Hardness as calcium carbonate	8260C - (MOD) TCL list OLM04.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:				B	N	D	N	D	A		
EB_20160725	7/25/2016	1133	G	Water	N	N	X						1	
MW-0B17_20160725	7/25/2016	1248	G	Water	N	N	X						1	
MW-0B18_20160725	7/25/2016	1320	G	Water	N	N	X						1	
SG-11-20160725	7/25/2016	1345	G	Water	N	Y	X						2	Run MS/MSD
DUP1_20160725	7/25/2016	0000	G	Water	N	N	X						1	
~~MW-0B19_20160725~~ BR MW-0B19_20160725	7/25/2016	1445	G	Water	N	N	X						1	
MW-0B23_20160725	7/25/2016	1505	G	Water	N	N	X						1	
MW-0B21_20160725	7/25/2016	1534	G	Water	N	Y	X						2	Run MS/MSD
DUP2_20160725	7/26/2016	0000	G	Water	N	N	X						1	
				Water										
				Water										

Bryan Reles

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: Run samples separate from other chains.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Bryan Reles	7/26/2016 @1604	Antea Group			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	7/26/16 1800	TA-ALB		7-27-16 0130	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.2, 0.5 #1

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08/08/2016

Login Sample Receipt Checklist

Client: Ashland Inc

Job Number: 480-103690-1

Login Number: 103690
List Number: 2
Creator: Williams, Christopher S

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	MS/MSD volume are shared containers.
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	

ALS Environmental

Work Order: 1608014

Project Name:

Ashland Glens Falls, NY

EHS Support LLC

Arlene Lillie

22 Brockman Dr.

Charleston, SC 29412

(843) 974-5875

11-Aug-2016

NELAP ACCREDITED TNI LABORATORY

Certificate No: MN 998501

Contents

Section I

CASE NARRATIVE

ADDRESS 3352 128th Avenue, Holland Michigan 49424-9236 USA | PHONE +1 616 399 6070 | FAX +1 616 399 6185
ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

ALS Group USA, Corp

Date: 11-Aug-16

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014

Case Narrative

Samples for the above noted Work Order were received on 07/30/16. 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.

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

Wet Chemistry:
No deviations or anomalies were noted.

Section II

SAMPLE RECEIPT

-Sample Summary

-Shipping Documents*

-Chain of Custody

-Receipt Checklist

(* = As applicable)

ALS Group USA, Corp

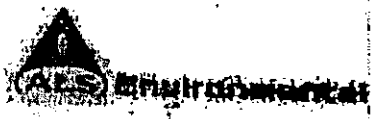
Date: 10-Aug-16

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1608014-01	EB_20160725	Groundwater		7/25/2016 11:33	7/30/2016 09:45	☐
1608014-02	MW-OB17_20160725	Groundwater		7/25/2016 12:48	7/30/2016 09:45	☐
1608014-03	MW-OB18_20160725	Groundwater		7/25/2016 13:20	7/30/2016 09:45	☐
1608014-04	SG-11_20160725	Groundwater		7/25/2016 13:45	7/30/2016 09:45	☐
1608014-05	DUP1_20160725	Groundwater		7/25/2016	7/30/2016 09:45	☐
1608014-06	MW-OB19_20160725	Groundwater		7/25/2016 14:45	7/30/2016 09:45	☐
1608014-07	MW-OB23_20160725	Groundwater		7/25/2016 15:05	7/30/2016 09:45	☐
1608014-08	MW-OB21_20160725	Groundwater		7/25/2016 15:34	7/30/2016 09:45	☐
1608014-09	DUP2_20160725	Groundwater		7/25/2016	7/30/2016 09:45	☐

CUSTODY SEAL



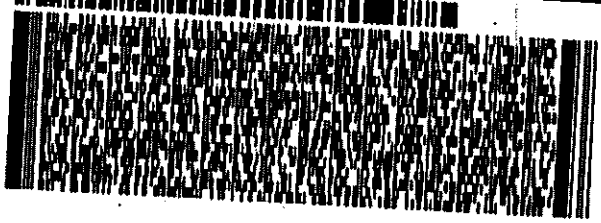
ORIGIN ID:BCHA
SHIPPING
ALS ENVIRONMENTAL
23 A WALKER WAY
SECTION 2
ALBANY, NY 12205
UNITED STATES US

SHIP DATE: 29JUL18
ACTWGT: 48.5 LB
CAD: 528485/CAFE3815
DIMS: 24x14x14 IN
BILL RECIPIENT

TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070

REF:
DEPT:



FedEx Express

2 of 2

MPS# 0289 6470 8309 8412

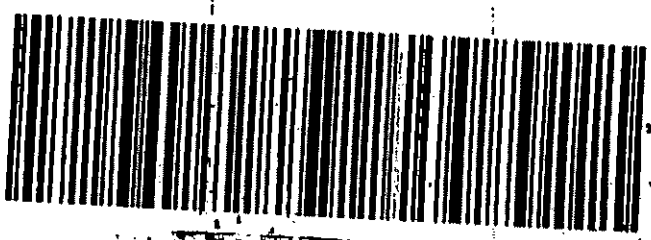
Mstr# 6470 8309 8401

0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO HLMA

49424
MI-US GRR



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

Chain of Custody Form

Page 1 of 1

COC ID: 35941

ALS Environmental

ALS Project Manager: TBB | ALS Work Order #: 1608014

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Ashland Glens Falls, NY	A	Free Cyanide (OIA-1677)
Work Order		Project Number		B	Run MS/MSD on 2nd Volume
Company Name	EHS Support LLC	Bill To Company	EHS Support LLC	C	
Send Report To	Arlene Lillis	Invoice Attn	Arlene Lillis	D	
Address	22 Brookman Dr.	Address	22 Brookman Dr.	E	
				F	
City/State/Zip	Charleston, SC 29412	City/State/Zip	Charleston, SC 29412	G	
Phone	(843) 974-5875	Phone	(843) 974-5875	H	
Fax		Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	EB_20160725	7/25/2016	1133	GW	NaOH	1	X										
2	MW-0817_20160725	7/25/2016	1248	GW	NaOH	1	X										
3	MW-0818_20160725	7/25/2016	1320	GW	NaOH	1	X										
4	SG-11_20160725	7/25/2016	1345	GW	NaOH	2	X	X									
5	DUP1_20160725	7/25/2016	0000	GW	NaOH	1	X										
6	MW-0819_20160725	7/25/2016	1445	GW	NaOH	1	X										
7	MW-0823_20160725	7/25/2016	1505	GW	NaOH	1	X										
8	MW-0821_20160725	7/25/2016	1534	GW	NaOH	2	X	X									
9	DUP2_20160725	7/25/2016	0000	GW	NaOH	1	X										
10																	

Sampler(s) Please Print & Sign: Bryan Rebs - Bryan Rebs

Shipment Method:

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

Results Due Date:

Relinquished by: Bryan Rebs — Date: 7/29/2016 — Time: 1435

Received by: — Date: 7/30/16 — Time: 0945

Notes: Batch all samples that accompany together. Run samples separate from other chains.

Relinquished by: — Date: 7/29/16 — Time: 1700

Received by (Laboratory): — Date: 7/30/16 — Time: 0945

Logged by (Laboratory): DES — Date: 8/1/16 — Time: 1115

Checked by (Laboratory): TBB

Cooler ID	Cooler Temp
	2.9 c

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

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4°C 9-5035

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

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **EHSSUPP-CHARLESTON** Date/Time Received: **30-Jul-16 09:45**

Work Order: **1608014** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 01-Aug-16 (Date) Reviewed by: Tom Bramick (eSignature) 01-Aug-16 (Date)

Matrices: Groundwater
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.4/2.4 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/1/2016 11:37:18 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Section III

MISCELLANEOUS

-Qualifiers, Acronyms, Units

-Accreditations

ADDRESS 3352 128th Avenue, Holland Michigan 49424-9236 USA | PHONE +1 616 399 6070 | FAX +1 616 399 6185
ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

ALS Group USA, Corp

Date: 10-Aug-16

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
WorkOrder: 1608014

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

Accreditations

Laboratory	Authority	Type	Certification #	Expires
ALS-Holland,MI	USDA	Soil Import	P330-13-00161	5/28/2016
ALS-Holland,MI	Kansas	Secondary NELAP	E-10411	5/31/2016
ALS-Holland,MI	Florida	Secondary NELAP	E871106	6/30/2016
ALS-Holland,MI	Pennsylvania	Secondary NELAP	010-001	7/31/2016
ALS-Holland,MI	West Virginia	State	355	8/31/2016
ALS-Holland,MI	Wisconsin	State	399084510	8/31/2016
ALS-Holland,MI	Minnesota	Primary NELAP	998501	12/31/2016
ALS-Holland,MI	Kentucky	State-Waste Water	98004	12/31/2016
ALS-Holland,MI	Kentucky	State-UST	87	12/31/2016
ALS-Holland,MI	Illinois	Secondary NELAP	003775	12/31/2016
ALS-Holland,MI	North Dakota	Secondary NELAP	R-192	12/31/2016
ALS-Holland,MI	Ohio	State/VAP	CL-103	12/23/2017
ALS-Holland,MI	Texas	Secondary NELAP	T104704494-16-7	1/31/2017
ALS-Holland,MI	Iowa	State & UST	403	9/1/2017
ALS-Holland,MI	Michigan	State/Drinking Water	0022	9/4/2017
ALS-Holland,MI	Indiana	State/Drinking Water	C-MI-08	9/4/2017

Section IV

SAMPLE RESULTS

-Analysis Data Sheet

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ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

1

CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

EB_20160725

Lab Name: ALS Group USA, Corp

Lab Code: MI01262 Case No. SAS No. SDG No. 1608014

Matrix: Water Lab Sample ID: 1608014-01A

Level (low/med): LOW Date Received: 7/30/2016

% Moisture: not dec. 0 Date Prep:

CONCENTRATION UNITS: µg/L

CAS NO.	COMPOUND	CONCENTRATION	C	Q	M
57-12-5	Cyanide, Free	2.0	U		

1

CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW-OB17_20160725

Lab Name: ALS Group USA, Corp

Lab Code: MI01262 Case No. SAS No. SDG No. 1608014

Matrix: Water Lab Sample ID: 1608014-02A

Level (low/med): LOW Date Received: 7/30/2016

% Moisture: not dec. 0 Date Prep:

CONCENTRATION UNITS: µg/L

CAS NO.	COMPOUND	CONCENTRATION	C	Q	M
57-12-5	Cyanide, Free	2.6			

1

CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW-OB18_20160725

Lab Name: ALS Group USA, Corp

Lab Code: MI01262 Case No. SAS No. SDG No. 1608014

Matrix: Water Lab Sample ID: 1608014-03A

Level (low/med): LOW Date Received: 7/30/2016

% Moisture: not dec. 0 Date Prep:

CONCENTRATION UNITS: µg/L

CAS NO.	COMPOUND	CONCENTRATION	C	Q	M
57-12-5	Cyanide, Free	3.6			

1

CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

SG-11_20160725

Lab Name: ALS Group USA, Corp

Lab Code: MI01262 Case No. SAS No. SDG No. 1608014

Matrix: Water Lab Sample ID: 1608014-04A

Level (low/med): LOW Date Received: 7/30/2016

% Moisture: not dec. 0 Date Prep:

CONCENTRATION UNITS: µg/L

CAS NO.	COMPOUND	CONCENTRATION	C	Q	M
57-12-5	Cyanide, Free	2.0	JU		

1

CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

DUP1_20160725

Lab Name: ALS Group USA, Corp

Lab Code: MI01262 Case No. SAS No. SDG No. 1608014

Matrix: Water Lab Sample ID: 1608014-05A

Level (low/med): LOW Date Received: 7/30/2016

% Moisture: not dec. 0 Date Prep:

CONCENTRATION UNITS: µg/L

CAS NO.	COMPOUND	CONCENTRATION	C	Q	M
57-12-5	Cyanide, Free	2.0	U		

1 CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW-OB19_20160725

Lab Name: ALS Group USA, Corp

Lab Code: MI01262 Case No. SAS No. SDG No. 1608014

Matrix: Water Lab Sample ID: 1608014-06A

Level (low/med): LOW Date Received: 7/30/2016

% Moisture: not dec. 0 Date Prep:

CONCENTRATION UNITS: µg/L

CAS NO.	COMPOUND	CONCENTRATION	C	Q	M
57-12-5	Cyanide, Free	2.0	JU		

1

CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW-OB23_20160725

Lab Name: ALS Group USA, Corp

Lab Code: MI01262 Case No. SAS No. SDG No. 1608014

Matrix: Water Lab Sample ID: 1608014-07A

Level (low/med): LOW Date Received: 7/30/2016

% Moisture: not dec. 0 Date Prep:

CONCENTRATION UNITS: µg/L

CAS NO.	COMPOUND	CONCENTRATION	C	Q	M
57-12-5	Cyanide, Free	11			

1

CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MW-OB21_20160725

Lab Name: ALS Group USA, Corp

Lab Code: MI01262 Case No. SAS No. SDG No. 1608014

Matrix: Water Lab Sample ID: 1608014-08A

Level (low/med): LOW Date Received: 7/30/2016

% Moisture: not dec. 0 Date Prep:

CONCENTRATION UNITS: µg/L

CAS NO.	COMPOUND	CONCENTRATION	C	Q	M
57-12-5	Cyanide, Free	2.0	U		

1

CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

DUP2_20160725

Lab Name: ALS Group USA, Corp

Lab Code: MI01262 Case No. SAS No. SDG No. 1608014

Matrix: Water Lab Sample ID: 1608014-09A

Level (low/med): LOW Date Received: 7/30/2016

% Moisture: not dec. 0 Date Prep:

CONCENTRATION UNITS: µg/L

CAS NO.	COMPOUND	CONCENTRATION	C	Q	M
57-12-5	Cyanide, Free	2.0	JU		

Section V

QC SUMMARY

-Summary Forms*

-QC Batch Report

(* = As applicable)

ADDRESS 3352 128th Avenue, Holland Michigan 49424-9236 USA | PHONE +1 616 399 6070 | FAX +1 616 399 6185
ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

ALS Group USA, Corp

Date: 10-Aug-16

Client: EHS Support LLC

Work Order: 1608014

Project: Ashland Glens Falls, NY

QC BATCH REPORT

Batch ID: R193177 Instrument ID FS3100 Method: OIA 1677

MBLK	Sample ID: MB-R193177-R193177			Units: µg/L			Analysis Date: 8/5/2016 09:30 AM			
Client ID:	Run ID: FS3100_160805A			SeqNo: 3964144		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	ND	2.0								

LCS	Sample ID: LCS-R193177-R193177			Units: µg/L			Analysis Date: 8/5/2016 09:30 AM			
Client ID:	Run ID: FS3100_160805A			SeqNo: 3964145		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	50.91	2.0	50	0	102	82-132	0			

MS	Sample ID: 1608014-04AMS			Units: µg/L			Analysis Date: 8/5/2016 09:30 AM			
Client ID: SG-11_20160725	Run ID: FS3100_160805A			SeqNo: 3964139		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	53.69	2.0	50	1.01	105	82-130	0			

MSD	Sample ID: 1608014-04AMSD			Units: µg/L			Analysis Date: 8/5/2016 09:30 AM			
Client ID: SG-11_20160725	Run ID: FS3100_160805A			SeqNo: 3964140		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	51.02	2.0	50	1.01	100	82-130	53.69	5.1	11	

The following samples were analyzed in this batch:

1608014-01A	1608014-02A	1608014-03A
1608014-04A	1608014-05A	1608014-06A
1608014-07A		

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

Client: EHS Support LLC
Work Order: 1608014
Project: Ashland Glens Falls, NY

QC BATCH REPORT

Batch ID: R193178 Instrument ID FS3100 Method: OIA 1677

MBLK Sample ID: MB-R193178-R193178 Units: µg/L Analysis Date: 8/5/2016 09:30 AM
Client ID: Run ID: FS3100_160805B SeqNo: 3964146 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	ND	2.0								

LCS Sample ID: LCS-R193178-R193178 Units: µg/L Analysis Date: 8/5/2016 09:30 AM
Client ID: Run ID: FS3100_160805B SeqNo: 3964147 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	52.17	2.0	50	0	104	82-132		0		

MS Sample ID: 1608014-08AMS Units: µg/L Analysis Date: 8/5/2016 09:30 AM
Client ID: MW-OB21_20160725 Run ID: FS3100_160805B SeqNo: 3964149 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	53.83	2.0	50	0.95	106	82-130		0		

MS Sample ID: 1608015-03AMS Units: µg/L Analysis Date: 8/5/2016 09:30 AM
Client ID: Run ID: FS3100_160805B SeqNo: 3964155 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	55.26	2.0	50	1.25	108	82-130		0		

MSD Sample ID: 1608014-08AMSD Units: µg/L Analysis Date: 8/5/2016 09:30 AM
Client ID: MW-OB21_20160725 Run ID: FS3100_160805B SeqNo: 3964150 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	53.31	2.0	50	0.95	105	82-130	53.83	0.971	11	

MSD Sample ID: 1608015-03AMSD Units: µg/L Analysis Date: 8/5/2016 09:30 AM
Client ID: Run ID: FS3100_160805B SeqNo: 3964156 Prep Date: DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	55.04	2.0	50	1.25	108	82-130	55.26	0.399	11	

The following samples were analyzed in this batch: 1608014-08A 1608014-09A

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

Section VI

SAMPLE DATA

-Instrument Data*

-Field Samples*

-Initial Calibration*

-Continuing Calibration*

-Instrument Tune*

-QC Samples*

-Sequence Logs*

-Preparation Logs*

(* = As applicable)

File name: C:\FLOW_4\RESULTS\WADCN\2016\160805A.RST
Date: 05-Aug-16
Operator: M

Peak	Cup	Name	R	Type	Dil	Wt	Area	Calc. (mg/L)	Flags
1	101	Sync	1	SYNC	1	1	4100154	0.09838	
2	900	Carry Over	1	CO	1	1	20316	0.00028	
3	101	STABILIZATION	1	BLNK	1	1	4132217	0.09924	
4	101	STABILIZATION	2	BLNK	1	1	4157027	0.09991	
5	101	STABILIZATION	3	BLNK	1	1	4157482	0.09992	
6	900	Blank	1	BLNK	1	1	10283	0.00006	
B	900	Read Baseline	1	RB	1	1	14	-0.00015	BL
8	101	Cal 0.100 mg/L	1	C	1	1	416120	0.10002	
9	102	Cal 0.050 mg/L	1	C	1	1	220195	0.04991	
10	103	Cal 0.025 mg/L	1	C	1	1	1141618	0.02498	
11	104	Cal 0.010 mg/L	1	C	1	1	47960	0.01019	
12	105	Cal 0.005 mg/L	1	C	1	1	246164	0.00511	
13	106	Cal 0.002 mg/L	1	C	1	1	98541	0.00194	
14	107	Cal 0.000 mg/L	1	C	1	1	-1251	-0.00017	LO
15	108	ICV 0.050	1	U	1	1	2151173	0.04868	
16	109	ICB	1	U	1	1	5832	-0.00002	LO
17	161	CCV 0.050	1	CCV	1	1	2262715	0.05139	
18	110	CCV LOW	1	U	1	1	10882	0.00216	
19	162	CCB	1	U	1	1	6554	-0.00001	LO
20	900	Blank	1	BLNK	1	1	-445	-0.00016	LO
B	900	Read Baseline	1	RB	1	1	-142	-0.00015	BL
22	111	MBLK	1	U	1	1	164	-0.00011	LO
23	112	LCS	1	U	1	1	2242992	0.05091	
24	113	1608013-01A	1	U	1	1	2169519	0.04913	
25	114	1608013-02A	1	U	1	1	10736	0.00007	
26	115	1608013-03A	1	U	1	1	380112	0.00802	
27	116	1608014-01A	1	U	1	1	36238	0.00062	
28	117	1608014-02A	1	U	1	1	130719	0.00263	
29	118	1608014-03A	1	U	1	1	176008	0.00360	
30	119	1608014-04A	1	U	1	1	54656	0.00101	
31	120	1608014-04A MS	1	U	1	1	2357402	0.05369	
32	161	CCV 0.050	1	CCV	1	1	2341652	0.05331	
33	162	CCB	1	U	1	1	22169	0.00032	
34	900	Blank	1	BLNK	1	1	9897	0.00006	
B	900	Read Baseline	1	RB	1	1	1477	-0.00011	BL
36	121	1608014-04A MS	1	U	1	1	2247733	0.05102	
37	122	1608014-05A	1	U	1	1	42537	0.00075	
38	123	1608014-06A	1	U	1	1	74623	0.00143	
39	124	1608014-07A	1	U	1	1	522508	0.01113	
40	111	MBLK	1	U	1	1	7458	0.00000	
41	112	LCS	1	U	1	1	2294918	0.05217	
42	129	1608014-08A MS	1	U	1	1	2341492	0.05331	
43	130	1608014-09A	1	U	1	1	55905	0.00103	
44	161	CCV 0.050	1	CCV	1	1	2306646	0.05246	
45	162	CCB	1	U	1	1	3531	-0.00007	LO
46	900	Blank	1	BLNK	1	1	952	-0.00013	LO
B	900	Read Baseline	1	RB	1	1	-1012	-0.00017	BL
48	127	1608014-08A	1	U	1	1	51845	0.00095	
49	128	1608014-08A MS	1	U	1	1	2362828	0.05383	
50	131	1608015-01A	1	U	1	1	78769	0.00152	
51	132	1608015-02A	1	U	1	1	75264	0.00145	
52	133	1608015-03A	1	U	1	1	65942	0.00125	
53	134	1608015-03A MS	1	U	1	1	2421244	0.05526	
54	135	1608015-03A MS	1	U	1	1	2412196	0.05504	

Peak	Cup	Name	R	Type	Dil	Wt	Area	Calc. (mg/L)	Flags
55	136	1608015-04A	1	U	1	1	83823	0.00163	
56	137	1608015-05A	1	U	1	1	70032	0.00134	
57	161	CCV 0.050	1	CCV	1	1	2325468	0.05291	
58	162	CCB	1	U	1	1	13912	0.00014	
59	900	Blank	1	BLNK	1	1	4480	-0.00005	LO
B	900	Read Baseline	1	RB	1	1	-983	-0.00017	BL

Channel 3: Available CN
Counts (pA) (E+05)
Time (sec)
Sync: 0.0983818
Carry Over: 0.000281519
STABILIZATION: 0.0992427
STABILIZATION: 0.0993098
STABILIZATION: 0.0993221
Blank: 6.82582e-05
Read Baseline: -0.000149882
Cal 0.100 mg/L: 0.100022
Cal 0.050 mg/L: 0.049915
Cal 0.025 mg/L: 0.0249809
Cal 0.010 mg/L: 0.0101911
Cal 0.005 mg/L: 0.00511844
Cal 0.002 mg/L: 0.00194897
Cal 0.000 mg/L: -0.000176742
ICV 0.050: 0.0486866
ICB: -2.63236e-05
CCV 0.050: 0.0513904
CCV LOW: 0.00216872
CB: -1.09857e-05
Blank: -0.00015962
Read Baseline: -0.000153198
MBLK: -0.00015356
LCS: 0.0509109
1608013-01A: 0.0491296
1608013-02A: -7.78781e-05
1608013-03A: 0.00802004
1608014-01A: 0.000620241
1608014-02A: 0.00263732
1608014-03A: 0.00360849
1608014-04A: 0.00101247
1608014-04A MS: 0.0536994
CCV 0.050: 0.0533144
CB: 0.000320919
Blank: 6.04776e-05
Read Baseline: -0.00011882
1608014-D4A MSD: 0.0510261
1608014-05A: 0.00607543 25
1608014-06A: 0.00143824
1608014-07A: 0.0111315
MBLK: 8.23708e-06
LCS: 0.0521743
1608014-08A MSD: 0.0533106
1608014-09A: 0.00103891
CCV 0.050: 0.0524601
CB: -7.51851e-05
Blank: -0.000129971
Read Baseline: -0.000171659
1608014-08A: 0.000952578
1608014-08A MS: 0.0538321
1608015-01A: 0.00152672
1608015-02A: 0.00145191
1608015-03A: 0.00125307
1608015-03A MS: 0.0552631
1608015-03A MSD: 0.0550412
1608015-04A: 0.00163346
1608015-05A: 0.00134103
CCV 0.050: 0.0529193
CB: 0.000145372
Blank: -5.50432e-05
Read Baseline: -0.000171058
0
1000
2000
3000
4000
5000
6000
7000
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
-0.200
-0.400

Available CN:Calibration 1: Peak 8-60

File name: C:\FLOW_4\RESULTS\WADCN\2016\160805A.RST
Date: 05-Aug-16
Operator: M

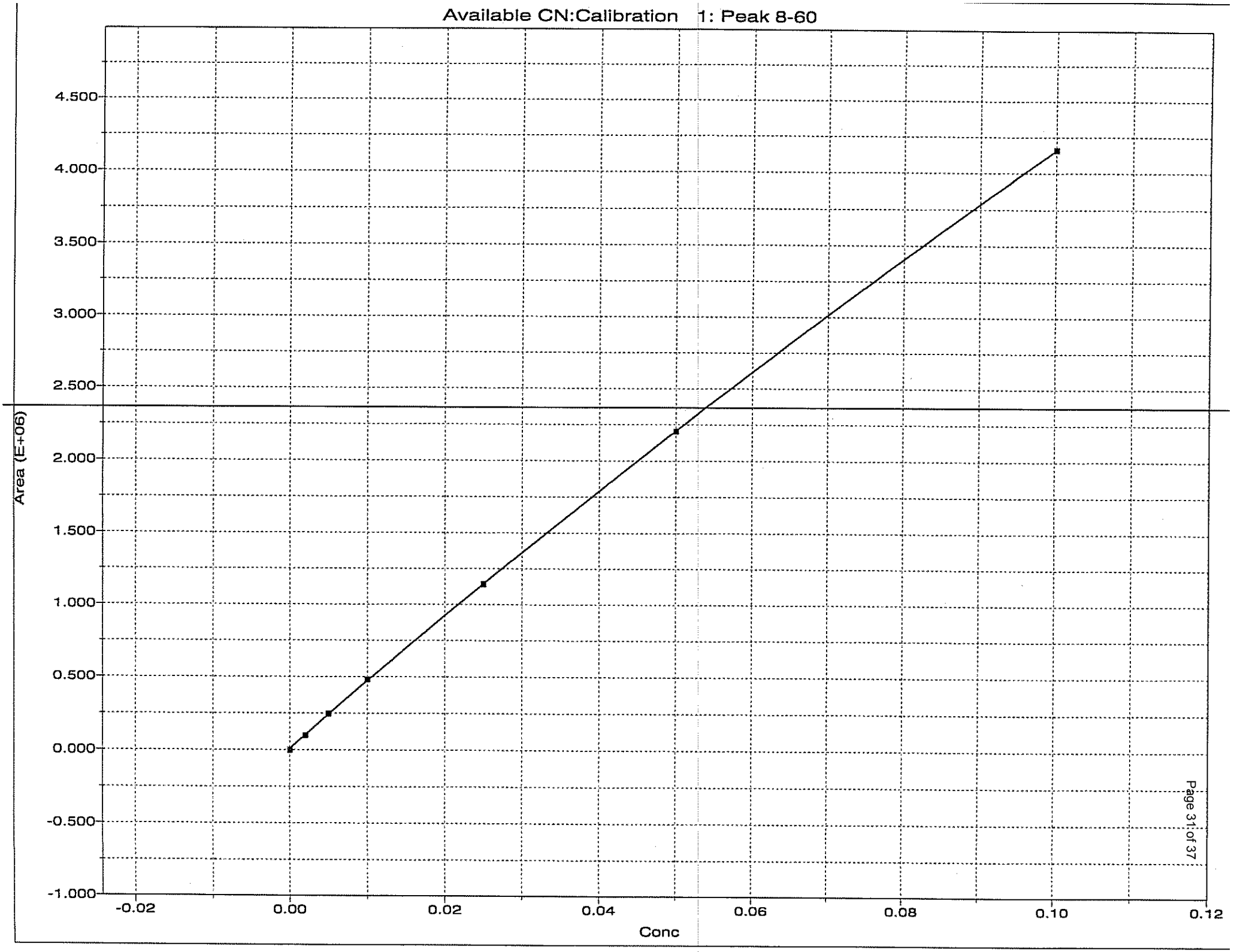
*	Name	Conc	Area
*	Cal 0.100 mg/L	0.100000	4161205.500000
*	Cal 0.050 mg/L	0.050000	2201950.500000
*	Cal 0.025 mg/L	0.025000	1141617.500000
*	Cal 0.010 mg/L	0.010000	479600.500000
*	Cal 0.005 mg/L	0.005000	246163.578125
*	Cal 0.002 mg/L	0.002000	98541.312500
*	Cal 0.000 mg/L	0.000000	-1250.924072

Calib Coef:
x=cyy+by+a
a: (intercept) -1.5018e-0
b: 2.1235e-0
c: 6.8199e-1

Corr Coef: 0.99999

Carryover: 0.496%

No Drift Peaks


Available CN:Calibration 1: Peak 8-60
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
-1.000
Area (E+06)
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
Conc

File name: C:\FLOW_4\160805A.TBL
Date: 05-Aug-16

Cup	Name	Type	R	Dil	Wt	Vial
101	Sync	SYNC	1	1	1	
900	Carry Over	CO	1	1	1	
101	STABILIZATION	BLNK	3	1	1	
900	Blank	BLNK	1	1	1	
900	Read Baseline	RB	1	1	1	
101	Cal 0.100 mg/L	C	1	1	1	
102	Cal 0.050 mg/L	C	1	1	1	
103	Cal 0.025 mg/L	C	1	1	1	
104	Cal 0.010 mg/L	C	1	1	1	
105	Cal 0.005 mg/L	C	1	1	1	
106	Cal 0.002 mg/L	C	1	1	1	
107	Cal 0.000 mg/L	C	1	1	1	
108	ICV 0.050	U	1	1	1	
109	ICB	U	1	1	1	
161	CCV 0.050	CCV	1	1	1	
110	CCV LOW	U	1	1	1	
162	CCB	U	1	1	1	
900	Blank	BLNK	1	1	1	
900	Read Baseline	RB	1	1	1	
111	MBLK	U	1	1	1	
112	LCS	U	1	1	1	
113	1608013-01A	U	1	1	1	
114	1608013-02A	U	1	1	1	
115	1608013-03A	U	1	1	1	
116	1608014-01A	U	1	1	1	
117	1608014-02A	U	1	1	1	
118	1608014-03A	U	1	1	1	
119	1608014-04A	U	1	1	1	
120	1608014-04A MS	U	1	1	1	
161	CCV 0.050	CCV	1	1	1	
162	CCB	U	1	1	1	
900	Blank	BLNK	1	1	1	
900	Read Baseline	RB	1	1	1	
121	1608014-04A MSD	U	1	1	1	
122	1608014-05A	U	1	1	1	
123	1608014-06A	U	1	1	1	
124	1608014-07A	U	1	1	1	
111	MBLK	U	1	1	1	
112	LCS	U	1	1	1	
127	1608014-08A	U	0	1	1	
128	1608014-08A MS	U	0	1	1	
129	1608014-08A MSD	U	1	1	1	
130	1608014-09A	U	1	1	1	
161	CCV 0.050	CCV	1	1	1	
162	CCB	U	1	1	1	
900	Blank	BLNK	1	1	1	

Cup	Name	Type	R	Dil	Wt	Vial
900	Read Baseline	RB	1	1	1	
131	1608015-01A	U	1	1	1	
132	1608015-02A	U	1	1	1	
133	1608015-03A	U	1	1	1	
134	1608015-03A MS	U	1	1	1	
135	1608015-03A MSD	U	1	1	1	
136	1608015-04A	U	1	1	1	
137	1608015-05A	U	1	1	1	
161	CCV 0.050	CCV	1	1	1	
162	CCB	U	1	1	1	
900	Blank	BLNK	1	1	1	
900	Read Baseline	RB	1	1	1	

Cup	Name	Comment
101	Sync	BPL#2054-45-5
900	Carry Over	
101	STABILIZATION	
900	Blank	
900	Read Baseline	
101	Cal 0.100 mg/L	BPL#2054-45-5
102	Cal 0.050 mg/L	BPL#2054-45-5
103	Cal 0.025 mg/L	BPL#2054-45-5
104	Cal 0.010 mg/L	BPL#2054-45-5
105	Cal 0.005 mg/L	BPL#2054-45-5
106	Cal 0.002 mg/L	BPL#2054-45-5
107	Cal 0.000 mg/L	
108	ICV 0.050	BPL#2054-45-7
109	ICB	
161	CCV 0.050	BPL#2054-45-6
110	CCV LOW	BPL#2054-45-5
162	CCB	
900	Blank	
900	Read Baseline	
111	MBLK	
112	LCS	BPL#2054-45-6
113	1608013-01A	
114	1608013-02A	
115	1608013-03A	
116	1608014-01A	
117	1608014-02A	
118	1608014-03A	
119	1608014-04A	
120	1608014-04A MS	BPL#2054-45-2
161	CCV 0.050	BPL#2054-45-6
162	CCB	
900	Blank	
900	Read Baseline	
121	1608014-04A MSD	BPL#2054-45-2
122	1608014-05A	
123	1608014-06A	
124	1608014-07A	
111	MBLK	
112	LCS	BPL#2054-45-6
127	1608014-08A	
128	1608014-08A MS	BPL#2054-45-2
129	1608014-08A MSD	BPL#2054-45-2
130	1608014-09A	
161	CCV 0.050	BPL#2054-45-6
162	CCB	
900	Blank	
900	Read Baseline	
131	1608015-01A	
132	1608015-02A	
133	1608015-03A	

Cup	Name	Comment
134	1608015-03A MS	BPL#2054-45-2
135	1608015-03A MSD	BPL#2054-45-2
136	1608015-04A	
137	1608015-05A	
161	CCV 0.050	BPL#2054-45-6
162	CCB	
900	Blank	
900	Read Baseline	

CN Free Reagent Identification Numbers

REAGENT	BPL#	EXP
1 M Sodium Hydroxide	1995-169-10	4-12-17
Alt. WAD Acid Reagent	2054-52-10	7-28-17
0.1M NaOH	1995-87-8	11-13-16
Sample Tubes lot #	1021072050505	N/A
KCN Std (curve)	2054-45-5	8-21-16
KCN Std (ICV)	2054-45-7	8-21-16
KCN Std (LCS, CCV)	2054-45-6	8-21-16
KCN Std (MS, MSD)	2054-45-2	8-21-16

Section VII

ATTACHMENTS

-Previously Issued Report(s)

ADDRESS 3352 128th Avenue, Holland Michigan 49424-9236 USA | PHONE +1 616 399 6070 | FAX +1 616 399 6185
ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

11-Aug-2016

Arlene Lillie
EHS Support LLC
22 Brockman Dr.
Charleston, SC 29412

Re: **Ashland Glens Falls, NY** Work Order: **1608014**

Dear Arlene,

ALS Environmental received 9 samples on 30-Jul-2016 for the analyses presented in the following report.

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

Sample results are compliant with NELAP standard requirements and QC 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 18.

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

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Client Services Coordinator

Certificate No: MN 998501

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 11-Aug-16

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: **1608014**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1608014-01	EB_20160725	Groundwater		07/25/16 11:33	07/30/16 09:45	☐
1608014-02	MW-OB17_20160725	Groundwater		07/25/16 12:48	07/30/16 09:45	☐
1608014-03	MW-OB18_20160725	Groundwater		07/25/16 13:20	07/30/16 09:45	☐
1608014-04	SG-11_20160725	Groundwater		07/25/16 13:45	07/30/16 09:45	☐
1608014-05	DUP1_20160725	Groundwater		07/25/16	07/30/16 09:45	☐
1608014-06	MW-OB19_20160725	Groundwater		07/25/16 14:45	07/30/16 09:45	☐
1608014-07	MW-OB23_20160725	Groundwater		07/25/16 15:05	07/30/16 09:45	☐
1608014-08	MW-OB21_20160725	Groundwater		07/25/16 15:34	07/30/16 09:45	☐
1608014-09	DUP2_20160725	Groundwater		07/25/16	07/30/16 09:45	☐

ALS Group USA, Corp

Date: 11-Aug-16

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
WorkOrder: **1608014**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group USA, Corp

Date: 11-Aug-16

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014

Case Narrative

Samples for the above noted Work Order were received on 07/30/16. 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.

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

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group USA, Corp

Date: *11-Aug-16*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014
Sample ID: EB_20160725
Lab ID: 1608014-01
Collection Date: 07/25/16 11:33 AM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	08/05/16 09:30 AM

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

ALS Group USA, Corp

Date: *11-Aug-16*

Client:	EHS Support LLC		
Project:	Ashland Glens Falls, NY	**Work Order:**	1608014
Sample ID:	MW-OB17_20160725	**Lab ID:**	1608014-02
Collection Date:	07/25/16 12:48 PM	**Matrix:**	GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	**2.6**		**2.0**	**µg/L**	1	08/05/16 09:30 AM

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

ALS Group USA, Corp

Date: *11-Aug-16*

Client:	EHS Support LLC		
Project:	Ashland Glens Falls, NY	**Work Order:**	1608014
Sample ID:	MW-OB18_20160725	**Lab ID:**	1608014-03
Collection Date:	07/25/16 01:20 PM	**Matrix:**	GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	**3.6**		**2.0**	**µg/L**	1	08/05/16 09:30 AM

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

ALS Group USA, Corp

Date: *11-Aug-16*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014
Sample ID: SG-11_20160725
Lab ID: 1608014-04
Collection Date: 07/25/16 01:45 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	08/05/16 09:30 AM

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

ALS Group USA, Corp

Date: *11-Aug-16*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014
Sample ID: DUP1_20160725
Lab ID: 1608014-05
Collection Date: 07/25/16
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	08/05/16 09:30 AM

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

ALS Group USA, Corp

Date: *11-Aug-16*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014
Sample ID: MW-OB19_20160725
Lab ID: 1608014-06
Collection Date: 07/25/16 02:45 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	08/05/16 09:30 AM

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

ALS Group USA, Corp

Date: *11-Aug-16*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014
Sample ID: MW-OB23_20160725
Lab ID: 1608014-07
Collection Date: 07/25/16 03:05 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	**11**		**2.0**	**µg/L**	1	08/05/16 09:30 AM

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

ALS Group USA, Corp

Date: *11-Aug-16*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014
Sample ID: MW-OB21_20160725
Lab ID: 1608014-08
Collection Date: 07/25/16 03:34 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	08/05/16 09:30 AM

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

ALS Group USA, Corp

Date: *11-Aug-16*

Client: EHS Support LLC
Project: Ashland Glens Falls, NY
Work Order: 1608014
Sample ID: DUP2_20160725
Lab ID: 1608014-09
Collection Date: 07/25/16
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, FREE			**OIA 1677**			Analyst: **MB**
Cyanide, Free	ND		2.0	µg/L	1	08/05/16 09:30 AM

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

ALS Group USA, Corp

Date: 11-Aug-16

Client: EHS Support LLC

QC BATCH REPORT

Work Order: 1608014

Project: Ashland Glens Falls, NY

Batch ID: **R193177** Instrument ID **FS3100** Method: **OIA 1677**

MBLK	Sample ID: **MB-R193177-R193177**				Units: **µg/L**			Analysis Date: **08/05/16 09:30 AM**			
Client ID:	Run ID: **FS3100_160805A**				SeqNo: **3964144**		Prep Date:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Cyanide, Free	ND	2.0									

LCS	Sample ID: **LCS-R193177-R193177**				Units: **µg/L**			Analysis Date: **08/05/16 09:30 AM**			
Client ID:	Run ID: **FS3100_160805A**				SeqNo: **3964145**		Prep Date:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Cyanide, Free	50.91	2.0	50	0	102	82-132	0				

MS	Sample ID: **1608014-04AMS**				Units: **µg/L**			Analysis Date: **08/05/16 09:30 AM**			
Client ID: **SG-11_20160725**	Run ID: **FS3100_160805A**				SeqNo: **3964139**		Prep Date:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Cyanide, Free	53.69	2.0	50	1.01	105	82-130	0				

MSD	Sample ID: **1608014-04AMSD**				Units: **µg/L**			Analysis Date: **08/05/16 09:30 AM**			
Client ID: **SG-11_20160725**	Run ID: **FS3100_160805A**				SeqNo: **3964140**		Prep Date:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Cyanide, Free	51.02	2.0	50	1.01	100	82-130	53.69	5.1	11		

The following samples were analyzed in this batch:

1608014-01A	1608014-02A	1608014-03A
1608014-04A	1608014-05A	1608014-06A
1608014-07A		

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

Client: EHS Support LLC
Work Order: 1608014
Project: Ashland Glens Falls, NY

QC BATCH REPORT

Batch ID: **R193178** Instrument ID **FS3100** Method: **OIA 1677**

MBLK Sample ID: **MB-R193178-R193178** Units: **µg/L** Analysis Date: **08/05/16 09:30 AM**
Client ID: Run ID: **FS3100_160805B** SeqNo: **3964146** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	ND	2.0								

LCS Sample ID: **LCS-R193178-R193178** Units: **µg/L** Analysis Date: **08/05/16 09:30 AM**
Client ID: Run ID: **FS3100_160805B** SeqNo: **3964147** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	52.17	2.0	50	0	104	82-132	0			

MS Sample ID: **1608014-08AMS** Units: **µg/L** Analysis Date: **08/05/16 09:30 AM**
Client ID: **MW-OB21_20160725** Run ID: **FS3100_160805B** SeqNo: **3964149** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	53.83	2.0	50	0.95	106	82-130	0			

MS Sample ID: **1608015-03AMS** Units: **µg/L** Analysis Date: **08/05/16 09:30 AM**
Client ID: Run ID: **FS3100_160805B** SeqNo: **3964155** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	55.26	2.0	50	1.25	108	82-130	0			

MSD Sample ID: **1608014-08AMSD** Units: **µg/L** Analysis Date: **08/05/16 09:30 AM**
Client ID: **MW-OB21_20160725** Run ID: **FS3100_160805B** SeqNo: **3964150** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	53.31	2.0	50	0.95	105	82-130	53.83	0.971	11	

MSD Sample ID: **1608015-03AMSD** Units: **µg/L** Analysis Date: **08/05/16 09:30 AM**
Client ID: Run ID: **FS3100_160805B** SeqNo: **3964156** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Free	55.04	2.0	50	1.25	108	82-130	55.26	0.399	11	

The following samples were analyzed in this batch: 1608014-08A 1608014-09A

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

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

Chain of Custody Form

Page 1 of 1

COC ID: 35941

ALS Environmental

ALS Project Manager: TBB | ALS Work Order #: 1608014

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Ashland Glens Falls, NY	A	Free Cyanide (OIA-1677)
Work Order		Project Number		B	Run MS/MSD on 2nd Volume
Company Name	EHS Support LLC	Bill To Company	EHS Support LLC	C	
Send Report To	Arlene Lillie	Invoice Attn	Arlene Lillie	D	
Address	22 Brookman Dr.	Address	22 Brookman Dr.	E	
				F	
City/State/Zip	Charleston, SC 29412	City/State/Zip	Charleston, SC 29412	G	
Phone	(843) 974-5875	Phone	(843) 974-5875	H	
Fax		Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	EB_20160725	7/25/2016	1133	GW	NaOH	1	X										
2	MW-0817_20160725	7/25/2016	1248	GW	NaOH	1	X										
3	MW-0818_20160725	7/25/2016	1320	GW	NaOH	1	X										
4	SG-11_20160725	7/25/2016	1345	GW	NaOH	2	X	X									
5	DUP1_20160725	7/25/2016	0000	GW	NaOH	1	X										
6	MW-0819_20160725	7/25/2016	1445	GW	NaOH	1	X										
7	MW-0823_20160725	7/25/2016	1505	GW	NaOH	1	X										
8	MW-0821_20160725	7/25/2016	1534	GW	NaOH	2	X	X									
9	DUP2_20160725	7/25/2016	0000	GW	NaOH	1	X										
10																	

Sampler(s) Please Print & Sign: Bryan Riles - Bz Rls

Shipment Method:

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

Results Due Date:

Relinquished by: Bz Rls	Date: 7/29/2016	Time: 1435	Received by:	
Relinquished by:	Date: 7/29/16	Time: 1700	Received by (Laboratory):	7/30/16 0945
Logged by (Laboratory): DES	Date: 8/1/16	Time: 1115	Checked by (Laboratory): TBB	

Notes: Batch all samples from the event together. Run Samples Separate from other Chains

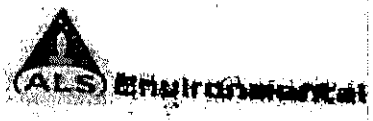
Cooler ID	Cooler Temp
	2.4 c

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

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

CUSTODY SEAL

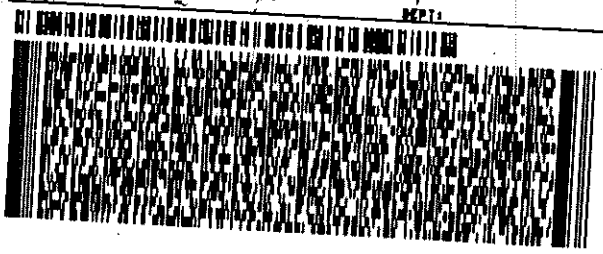


ORIGIN ID:SCHA
SHIPPING
ALS ENVIRONMENTAL
23 A WALKER WAY
SECTION 2
ALBANY, NY 12205
UNITED STATES US

SHIP DATE: 28JUL16
ACTWGT: 48.3 LB
CAD: 528485/CAFE2915
DIMS: 24x14x14 IN
BILL RECIPIENT

TO **SAMPLE RECEIVING**
ALS ENVIRONMENTAL
3352 128TH AVENUE

HOLLAND MI 49424
(616) 399-6070
INV:
PO:
REF:
DEPT:



FedEx Express

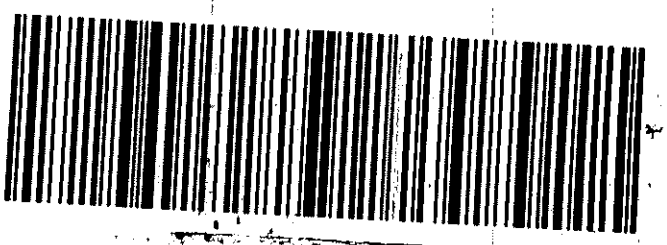
2 of 2
MPS# 0283 6470 8309 8412
Mstr# 6470 8309 8401

SATURDAY 12:00P
PRIORITY OVERNIGHT

0201

XO HLMA

49424
MI-US GRR



ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **EHSSUPP-CHARLESTON** Date/Time Received: **30-Jul-16 09:45**

Work Order: **1608014** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 01-Aug-16 (Date) Reviewed by: Tom Bramish (eSignature) 01-Aug-16 (Date)

Matrices: Groundwater

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.4/2.4 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/1/2016 11:37:18 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ATTACHMENT 3
Data Usability Summary Report

HERCULES

Data Usability Summary Report
Groundwater and Surface Water Monitoring – July 2016
Pretreatment Plant Area
Former Ciba Geigy Facility
Queensbury, New York

Prepared by:

EHS Support
consider it done

September 2016

TABLE OF CONTENTS

1.0 DATA USABILITY ASSESSMENT

This report presents the results of validation of analytical data associated with aqueous samples collected in July 2016 from the Pretreatment Plant Area at the former Ciba Geigy facility in Queensbury, New York. Laboratory data packages for were provided to EHS Support LLC by ALS Environmental and TestAmerica Laboratories. The data were reviewed by Amy Coats, an EHS Support Project Chemist approved by the New York State Department of Environmental Conservation (NYSDEC) for data validation and generation of DUSRs in accordance with NYSDEC guidelines.

These Data Usability Summary Reports (DUSRs) were prepared for the laboratory reports listed in the table below. Details of the data review and usability summary for each set of validated data are presented in Sections 2 and 3 of this report.

DUSR Data Set	Laboratory Report	Analysis:	Analysis Performed by:
1	480-103690	General Chemistry	TestAmerica Laboratories, Inc., Buffalo, New York
2	1608014	General Chemistry	ALS Environmental in Holland, MI

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

The data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines (Organic, 2008 and Inorganic, January 2010), laboratory analytical methods, and professional judgment. Relevant EPA Region 2 Data Validation SOPs were referenced as needed. It is expected that the laboratory conducted sufficient quality review of the data prior to reporting. While Quality Control (QC) is meant to increase confidence in analytical data, it is important to note that no compound concentration is guaranteed to be accurate, even if all QC criteria were met.

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

Validation Qualifiers

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

UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.

Overall Data Evaluation and Usability

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

2.0 DUSR FOR DATA SET 1

Sample Delivery Group (SDG): 480-103690

Analyses: General Chemistry

Analyses performed by: TestAmerica Laboratories, Inc., Buffalo, New York

EHS Validation Report Number: 034

Review Level: DUSR

Report Date: September 23, 2016

SUMMARY

This section summarizes the results of validation of analytical data associated with the samples listed in the table below. The data review was completed using sample laboratory reports that meet the NYSDEC Category B deliverable requirements.

SDG	Client Sample ID	Lab Sample ID	Sample Matrix	Sample Collection Date	Parent Sample	Cyanide Analysis
480-103690	EB_ 20160725	480-103690-1	Water	7/25/2016		X
480-103690	MW-OB17_ 20160725	480-103690-2	Water	7/25/2016		X
480-103690	MW-OB18_ 20160725	480-103690-3	Water	7/25/2016		X
480-103690	SG-11_ 20160725	480-103690-4	Water	7/25/2016		X
480-103690	DUP1_ 20160725	480-103690-5	Water	7/25/2016	SG-11_20160725-07252016	X
480-103690	MW-OB19_ 20160725	480-103690-6	Water	7/25/2016		X
480-103690	MW-OB23_ 20160725	480-103690-7	Water	7/25/2016		X
480-103690	MW-OB21_ 20160725	480-103690-8	Water	7/25/2016		X
480-103690	DUP2_ 20160725	480-103690-9	Water	7/25/2016	MW-OB21_20160725	X

Sample Custody and Receipt

All samples were received in good condition and properly preserved.

Assessment Summary and Data Usability

In this SDG, no QC (Quality Control) excursions encountered would lead to rejection of data. Results reported in this SDG are considered usable for the intended purpose. Please refer to report below for specific QC variances and data qualification.

INORGANIC ANALYSIS

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

General chemistry Analysis

Preservation and holding times

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

Method	Matrix	Preservation	Holding Time
Total cyanide by 9012	Water	≤6 °C; NaOH to pH > 12	14 days

All criteria were met.

Calibration

All criteria were met:

- All ICV and CCV (initial calibration and continuing calibration verification) recoveries were within control limits.
- Calibration curves exhibited acceptable correlation coefficients.

Blanks

All criteria were met. One equipment blank was included in this data set.

Laboratory Control Sample (LCS)

All criteria were met.

Laboratory duplicate analysis

NA: MS/MSD analysis was performed in lieu of laboratory duplicate analysis.

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

All criteria were met. MS/MSD analysis was performed on samples 480-103690-4 (SG-11_20160725) and 480-103690-8 (MW-OB21_20160725).

Field duplicates

All criteria were met: field duplicate samples were submitted with two samples in this data set. The relative percent differences between parent and duplicate were acceptable. The criteria used to evaluate field duplicate sample pairs are shown in the table below.

Acceptable RPD between parent sample and duplicate when both parent and duplicate concentrations are ≥ 5x RL	**Acceptable difference between parent and duplicate sample when either parent or sample concentration is < 5x RL**
RPD ≤ 30% for waters or RPD ≤ 50% for solids	Aqueous: Limit for the absolute value of the difference is 2x the RL
	Soil/ sediment: Limit for the absolute value of the difference is 3x the RL

Additional notes

NA: No additional notes to report.

Validation performed by: Amy Coats, Project Chemist
EHS Support LLC

3.0 DUSR FOR DATA SET 2

Sample Delivery Group (SDG): 1608014

Analyses: General Chemistry

Analyses performed by ALS Environmental, Holland, Michigan

Report Number: 030

Review Level: DUSR

Report Date: September 14, 2016

This section summarizes the results of validation of analytical data associated with the samples listed in the table below. The data review was completed using sample laboratory reports that meet the NYSDEC Category B deliverable requirements.

SDG	Client Sample ID	Lab Sample ID	Sample Matrix	Sample Collection Date	Parent Sample	Free Cyanide Analysis
1608014	EB_20160725	1608014-01A	Water	7/25/2016		X
1608014	MW-OB17_20160725	1608014-02A	Water	7/25/2016		X
1608014	MW-OB18_20160725	1608014-03A	Water	7/25/2016		X
1608014	SG-11_20160725	1608014-04A	Water	7/25/2016		X
1608014	DUP1_20160725	1608014-05A	Water	7/25/2016	SG-11_ 20160725	X
1608014	MW-OB19_20160725	1608014-06A	Water	7/25/2016		X
1608014	MW-OB23_20160725	1608014-07A	Water	7/25/2016		X
1608014	MW-OB21_20160725	1608014-08A	Water	7/25/2016		X
1608014	DUP2_20160725	1608014-09A	Water	7/25/2016	MW-OB21_ 20160725	X

Sample Custody and Receipt

All samples were received in good condition and properly preserved.

Assessment Summary and Data Usability

In this SDG, no QC (Quality Control) excursions encountered would lead to rejection of data. Overall QC associated with results reported in this SDG is considered acceptable. Results reported in this SDG are considered usable for the intended purpose.

INORGANIC ANALYSIS

Samples were analyzed according to United States Environmental Protection Agency Method OIA 1677.

General chemistry Analysis

Preservation and holding times

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

Method	Matrix	Preservation	Holding Time
Cyanide, Free by OIA 1677	Water	NaOH to pH > 12	14 days to analysis

All criteria were met.

Calibration

All criteria were met:

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

Blanks

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

Laboratory Control Sample (LCS)

All criteria were met.

Laboratory duplicate analysis

NA: no lab duplicate analysis was performed on samples in this data set.

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

All criteria were met. MS/MSD analysis was performed on samples 1608014-04A (SG-11_20160725) and 1608014-08A (MW-OB21_20160725).

Field duplicates

All criteria were met: field duplicate samples were submitted with two samples in this data set. The relative percent differences between parent and duplicate were acceptable.

Validation performed by: Amy Coats, Project Chemist
EHS Support LLC