August 29, 2019

Alexis McKinnon
Solid Waste Specialist
Kitsap County Public Works
Solid Waste Division
604 Division Street, MS-27
Port Orchard, WA 98366

Re: Second Quarter 2019 Environmental Monitoring Report, Hansville Landfill, Kitsap County, Washington

Project No. 160423-05.1

Dear Alexis:

This quarterly report summarizes the results of environmental monitoring conducted at the Hansville Landfill (Site) during the second quarter of 2019, and was prepared by Aspect Consulting, LLC (Aspect) on behalf of Kitsap County Public Works Solid Waste Division and Waste Management of Washington (WMW). Ongoing environmental monitoring at the Site supports the selected remedy of natural attenuation of groundwater with enhanced monitoring and institutional controls that was established under Amended Consent Decree No. 95-2-03005-1 (August 5, 2011). The data sets presented in this letter report were collected in accordance with the Site Cleanup Action Plan (CAP; Ecology, 2011) and the "Compliance Monitoring Plan with Sampling & Analysis Plan and Quality Assurance Plan" (SCS, 2011; herein referred as Compliance Monitoring Plan), except where otherwise noted.

Conditions monitored at the Site during the second quarter of 2019 were consistent with historical trends showing improvements in protection of human health and the environment. This report is organized consistent with quarterly reporting topics listed in the Compliance Monitoring Plan (SCS, 2011), and includes:

- Site monitoring and maintenance activities, along with a discussion of any deviations from the CAP, or required tasks not otherwise documented in project plans
- Landfill gas monitoring results and gas collection system adjustments
- Determination of groundwater flow direction and gradient, including a groundwater surface elevation contour map
- Water quality sampling results, including tabulated field data and laboratory analyses

Also included are time-series plots and projected trends in groundwater concentrations for selected analytes at selected monitoring locations. Finally, this report discusses geochemical parameters as indicators of landfill effects on groundwater and surface water.

Site Activities – Second Quarter 2019

Site activities during the reporting period included environmental monitoring of landfill gas, groundwater, and surface water. Landfill gas monitoring data are presented in Attachment A. Groundwater elevations, a groundwater contour map, and groundwater and surface water quality analytical results are presented in Attachment B. Summary statistics, time-series graphs, and graphs of projected groundwater concentrations for arsenic and vinyl chloride at selected monitoring wells are presented in Attachment C. Supporting field records, laboratory data reports, and chain-of-custody documentation are presented in Attachment D. A chronology of on-Site monitoring activities performed during the first quarter 2019 is provided below:

- On April 17, 2019, groundwater and surface water sampling was completed by Aspect representatives. Groundwater and surface water samples were collected in accordance with the Compliance Monitoring Plan (SCS, 2011).
- On April 18 and May 16, 2019, Aspect conducted system tuning of the landfill gas system. As necessary, flow rates were adjusted to ensure capture of landfill gasses.
- On June 20, 2019, Aspect conducted landfill gas monitoring in accordance with the Compliance Monitoring Plan (SCS, 2011), including compliance monitoring at perimeter probes. As necessary, flow rates were adjusted to ensure capture of landfill gasses.

Deviations from the Compliance Monitoring Plan

The native soil landfill gas extraction wells—which have all been inactive since 2017—were monitored on July 30, 2019, and were inadvertently not monitored on June 20, 2019. Otherwise, there were no deviations from the Compliance Monitoring Plan (SCS, 2011) during the second quarter 2019 environmental monitoring.

Summary of Landfill Gas Conditions

The following sections provide a discussion of landfill gas monitoring and gas extraction system performance. The layout of the landfill gas extraction system is shown on Figure A-1.

Landfill Gas Monitoring

The landfill gas collection system was tuned on April 18 and May 16, 2019, and compliance monitoring of the landfill gas collection system occurred on June 20, 2019.

Measurements were made with a calibrated GEM-5000 multigas meter. Landfill gas monitoring parameters collected for the compliance monitoring event are summarized in Table A-1, and listed below:

- Landfill gas composition measurements included methane (CH_4), carbon dioxide (CO_2), oxygen (O_2), and balance gas (Balance) concentrations.
- Collection system pressure measurements included the static pressure measured before and after any valve adjustments, reported as “initial” and “adjusted,” respectively.
- Collection system flow-rate measurements were obtained at all locations via orifice plates. The differential pressure and gas temperature were measured to calculate flow. Table A-1 presents flow rates measured after valve adjustments, reported as “adjusted.”

Landfill Gas System Performance

During the compliance monitoring event on June 20, 2019, the flow at the blower inlet was approximately 50 standard cubic feet per minute (scfm). Methane and carbon dioxide concentrations at the blower inlet were approximately 4.4 percent by volume and 15.3 percent by volume, respectively. Oxygen concentration was approximately 1.8 percent by volume. Well-field optimization will continue to focus on maximizing methane and carbon dioxide collection rates. The 2,000-gallon condensate storage tank contained approximately 400 gallons.

Explosive Gas Control

Methane was not detected above 0.1 percent in any of the perimeter compliance-gas probes during the compliance monitoring event on June 20, 2019. Carbon dioxide concentrations ranged from 1.3 to 3.3 percent by volume, reflecting natural conditions.

Summary of Groundwater and Surface Water Conditions

This section addresses groundwater and surface water conditions based on the monitoring event on April 17, 2019. Groundwater samples were collected from six monitoring wells and surface water samples were collected from four locations (see Figure B-1).

Groundwater Flow

Groundwater surface elevations were calculated using water levels measured April 17, 2019, and are presented in Table B-1. Groundwater elevations ranged from 238.5 feet North American Vertical Datum of 1988 (NAVD88) in MW-12I to 268.1 feet NAVD88 in the upgradient, background monitoring well MW-5. The direction of groundwater flow at the Site was to the southwest. Groundwater gradients ranged from 0.009 feet over feet (feet/feet) in the upgradient areas, to 0.015 feet/feet further downgradient, with the gradient steepening near the groundwater discharge area (Figure B-1). Groundwater flow conditions were consistent with those observed during previous monitoring events.

Groundwater and Surface Water Quality

Groundwater quality results from the second quarter 2019 are presented in Table B-2, including field parameters, conventional parameters, dissolved metals, and volatile organic compounds. During the reporting period, arsenic concentrations in groundwater were below the Site-specific cleanup level of 0.005 milligrams per liter (mg/L) at all monitoring wells except MW-13D (0.00513 mg/L) and MW-14 (0.0121 mg/L). Dissolved manganese concentrations were below the Site-specific cleanup level of 2.24 mg/L. Vinyl chloride concentrations in groundwater were below the Site-specific groundwater cleanup level of 0.025 micrograms per liter (µg/L) at all monitoring wells except MW-6 (0.096 µg/L) and MW-12I (0.054 µg/L).

Surface water quality results from the second quarter 2019 are presented in Table B-3, including field parameters, conventional parameters, dissolved metals, and volatile organic compounds. During the reporting period, dissolved arsenic concentrations in surface water were below the Site-specific cleanup level of 0.005 mg/L. Dissolved manganese concentrations were below the Site-specific cleanup level of 2.24 mg/L. Vinyl chloride concentrations in surface water were not detected at a reporting limit below the Site-specific cleanup level of 0.025 µg/L.

Time-Series Plots and Projected Trends

Groundwater sampling results since 2007 are shown on time-series plots for dissolved arsenic (Figure C-1) and vinyl chloride (Figure C-2) at all compliance monitoring locations. Figure C-1 shows that dissolved arsenic concentrations in groundwater have been less than the cleanup level of 0.005 mg/L at MW-5 (background well), MW-6, MW-7, and MW-12I. Dissolved arsenic concentrations have historically been below the cleanup level at MW-13D except during the third quarter 2018 and the second quarter 2019. Dissolved arsenic concentrations at MW-14 have historically exceeded the Site-specific cleanup level and have been decreasing over time.

Figure C-2 shows vinyl chloride concentrations in groundwater have been less than the cleanup level of 0.025 µg/L at MW-5 (background well), MW-7, and MW-13D. The concentrations of vinyl chloride at MW-6, MW-12I, and MW-14 have historically exceeded the Site-specific cleanup level and have been decreasing over time. For the first time since monitoring began, vinyl chloride concentrations at MW-14 were below the Site-specific cleanup level during the third quarter 2018 and were not detected during the second quarter 2019.

Figure C-3 shows time-series plots of historical and 10-year projected groundwater concentrations for MW-6 (vinyl chloride), MW-12I (vinyl chloride), and MW-14 (arsenic and vinyl chloride). The projected restoration time frames for vinyl chloride concentrations range from approximately 4 to 10 years. The projected restoration time frame for arsenic in groundwater at MW-14 is more than 10 years. Increasing the rate of landfill gas collection system may achieve groundwater cleanup levels within a shorter time frame than shown on Figure C-3.

Statistical Evaluation of Groundwater Trends

There are statistically significant decreasing trends in concentrations where dissolved arsenic and/or vinyl chloride have been detected above Site-specific cleanup levels (at monitoring wells MW-6, MW-12I, and MW-14). Table C-1 provides results of statistical analysis for arsenic and vinyl chloride for monitoring wells MW-6, MW-12I, and MW-14. The trends are defined as "statistically significant" because the magnitude of the Mann-Kendall Test Value (Z) was greater than the Critical Value (which is based on the number of data points and alpha). The trends are defined as decreasing because the Sen's Slopes are negative.[1] These statistics confirm what is visually apparent on Figure C-3 showing historical groundwater concentrations.

The statistical analysis of groundwater data was performed in accordance with the Compliance Monitoring Plan (SCS, 2011) for historical data collected since January 23, 2007. The program Sanitas WQStat (ver. 9.0.34) was used to evaluate the Mann-Kendall Test and Sen's Slope. Mann-Kendall testing was performed to assess whether there were statistically significant trends in groundwater concentrations using the two-tailed test (alpha = 0.05). Mann-Kendall results are reported as an approximated normal distribution Test Value "Z" (where the number of data points was greater than 40). Sen's slope analysis was performed to identify the trend direction for statistically significant trends and reflects the median of the slopes of all pairs of historical data.

[1] Sen's slope values reflect the median of the slopes of historical data pairs, and were provided in units of µg/L per day in reports by SCS through 2016. Starting in 2017, Sen's slope values will be provided in units of µg/L per year, to support interpretation. For comparison, Table C-1 provides Sen's slope values for both units.

Geochemical Parameters

Geochemical parameters in groundwater and surface water serve as indicators of landfill effects and can distinguish leachate impacts from gas-to-groundwater impacts. As shown in Tables B-2 and B-3, geochemical parameters collected at the Site include field parameters (dissolved oxygen, pH, Redox [reduction-oxidation potential], specific conductivity, and temperature), alkalinity/carbonate/bicarbonate, chloride, nitrate/nitrite/ammonia, sulfate, and total organic carbon.

Based on low concentrations of geochemical parameters identified as leachate indicators (such as chloride, sulfate, alkalinity, and bicarbonate) across the Site, there appears to be little if any leachate effect on groundwater and surface water quality. However, the downgradient monitoring wells show lower dissolved oxygen concentrations than the upgradient well (MW-5), which is likely caused by carbon dioxide in landfill gas coming in contact with groundwater directly beneath the landfill. Increasing the rate of landfill gas collection may prevent carbon dioxide from contacting groundwater, maintain background dissolved oxygen levels, and support geochemical conditions that keep naturally occurring arsenic and manganese from dissolving into groundwater.

References

SCS Engineers (SCS), 2011, Compliance Monitoring Plan with Sampling & Analysis Plan and Quality Assurance Plan – Remedial Action at the Hansville Landfill, September 15, 2011.

Washington State Department of Ecology (Ecology), 2011, Cleanup Action Plan Hansville Landfill, Kitsap County, Washington, Ecology Facility Site Identification Number: 2605, June 2011.

Limitations

Work for this project was performed for the Kitsap County Public Works (Client), and this letter was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This letter does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Sincerely,

Aspect consulting, LLC

8/29/2019

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Attachments:
A – Landfill Gas Data
B – Water Quality Results
C – Groundwater Statistics and Time-Series Plots
D – Field Forms and Laboratory Reports

cc: Phil Perley, Waste Management of Washington
Patrick Hamel, Kitsap Public Health District
Ron Timm, Washington State Department of Ecology
Sam Phillips, Port Gamble S'Klallam Tribe

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ATTACHMENT A

Landfill Gas Data

Table A-1. Landfill Gas Data, Second Quarter, 2019

Project No. 160423, Hansville Landfill, Hansville, WA

Location	Device ID	Date/Time	Methane CH4 (% by vol)	Carbon Dioxide CO2 (% by vol)	Oxygen O2 (% by vol)	Balance Bal (% by vol)	Static Pressure (inches H2O)		Gas Temperature (degrees F)		Flow Rate (SCFM)	
							Initial	Adjusted	Initial	Adjusted	Initial	Adjusted
Blower Inlet	HANSBLIN	6/20/2019 11:37	4.4	15.3	1.8	78.5	-22.12	-18.64	71.5	70.4	49.4	52.3
Blower Outlet	HANSBLOT	6/20/2019 11:40	4.3	15.1	1.9	78.7	N/A	N/A	N/A	N/A	N/A	N/A
Extraction Well 001	HANSR001	6/20/2019 15:18	5.9	13.9	0	80.2	-0.15	-0.15	74.6	74.5	1	1.3
Extraction Well 002	HANSR002	6/20/2019 15:28	2.1	14.4	3.4	80.1	-1.64	-3.05	77.7	77.8	N/A	N/A
Extraction Well 003	HANSR003	6/20/2019 16:07	7.6	13.4	0	79	-0.63	-0.62	76.3	76.4	2.2	1.5
Extraction Well 004	HANSR004	6/20/2019 15:57	3.6	16.9	0	79.5	-0.95	-0.95	72	72.1	1.9	2.3
Extraction Well 005	HANSR005	6/20/2019 15:53	3.8	17.6	0.2	78.4	-0.49	-0.46	70.2	70.2	2	2.1
Extraction Well 006	HANSR006	6/20/2019 14:04	3.7	17	2.5	76.8	-0.8	-0.81	73	73	1.6	1.7
Extraction Well 007	HANSR007	6/20/2019 14:15	0.4	15.3	0.2	84.1	-0.16	-0.17	70.9	70.9	2.5	2.1
Extraction Well 008	HANSR008	6/20/2019 14:58	5.2	17.3	0.1	77.4	-0.42	-0.4	70.8	70.9	1	1
Extraction Well 009	HANSR009	6/20/2019 15:08	2	15.3	1	81.7	-0.84	-0.8	77.9	77.8	N/A	N/A
Extraction Well 010	HANSR010	6/20/2019 15:13	5	10	4.3	80.7	-0.33	-0.33	72.1	72.1	0.8	1
Extraction Well 011	HANSR011	6/20/2019 15:33	3.5	8.1	0	88.4	-0.31	-0.32	79.6	79.4	0.8	0.6
Extraction Well 012	HANSR012	6/20/2019 14:33	8.5	4.2	0	87.3	-0.46	-0.45	67.3	67.3	0.5	0.6
Extraction Well 013	HANSR013	6/20/2019 14:21	2.5	13.5	1.5	82.5	-2.57	-1.63	70	70	N/A	N/A
Trench Collector TD-1	HANSTD01	6/20/2019 11:21	2	20.6	0	77.4	-0.21	-0.22	77.2	77.3	10.7	11.4
Trench Collector TR-1	HANSTR01	6/20/2019 14:09	0.2	14.8	3.3	81.7	-0.56	-0.52	75.1	75.1	2.1	2.3
Trench Collector TR-2	HANSTR02	6/20/2019 15:03	6.8	16.8	0	76.4	-0.49	-0.49	75.5	75.5	N/A	N/A
Trench Collector TR-3	HANSTR03	6/20/2019 15:24	2.9	6.7	3.5	86.9	-0.67	-0.65	84.1	84.1	N/A	N/A
Trench Collector TR-4	HANSTR04	6/20/2019 16:02	1.8	18.5	0	79.7	-0.27	-0.27	75.6	75.6	1.7	2.5
Trench Collector TR-5	HANSTR05	6/20/2019 14:38	0.1	0.1	21.4	78.4	-0.54	-0.56	79.3	79.3	N/A	N/A
Trench Collector TR-6	HANSTR06	6/20/2019 14:28	8.9	15.6	0.1	75.4	-0.57	-0.59	67	67.2	N/A	N/A
Trench Collector TR-7	HANSTR07	6/20/2019 16:27	8.5	15.7	0.1	75.7	-0.31	-0.31	71.9	71.9	2.9	2.4
Native Soil Extraction Well 1 Shallow	HANSN01S	7/30/2019 11:42	0	1.4	19.4	79.2	-0.39	-0.39	64.1	64.2	N/A	N/A
Native Soil Extraction Well 1 Deep	HANSN01D	7/30/2019 11:45	0	0.1	20.9	79	-0.22	-0.2	71.9	72.4	N/A	N/A
Native Soil Extraction Well 2 Shallow	HANSN02S	7/30/2019 11:50	0	1.5	19.7	78.8	-0.15	-0.14	73.1	73.1	N/A	N/A
Native Soil Extraction Well 2 Deep	HANSN02D	7/30/2019 11:48	0	1.5	19.6	78.9	-0.12	-0.12	67.9	68.1	N/A	N/A
Native Soil Extraction Well 3 Shallow	HANSN03S	7/30/2019 12:04	0	0.1	21.3	78.6	-0.12	-0.11	80.5	80.6	N/A	N/A
Native Soil Extraction Well 3 Deep	HANSN03D	7/30/2019 11:59	0	0.1	21.3	78.6	-0.07	-0.07	75.4	75.7	N/A	N/A
Native Soil Extraction Well 4 Shallow	HANSN04S	7/30/2019 12:12	0.8	3.3	17.4	78.5	-2.57	-3.66	78.2	78.3	N/A	N/A
Native Soil Extraction Well 4 Deep	HANSN04D	7/30/2019 12:08	0	0.1	21.4	78.5	-0.1	-0.07	74.9	75	N/A	N/A
Native Soil Extraction Well 5 Shallow	HANSN05S	7/30/2019 12:21	0	0.1	21.5	78.4	-0.09	-0.08	82.6	82.7	N/A	N/A
Native Soil Extraction Well 5 Deep	HANSN05D	7/30/2019 12:17	0	0.1	21.4	78.5	-0.09	-0.07	76.5	76.9	N/A	N/A
Gas Probe 1	HANSGP01	6/20/2019 11:49	0.1	1.9	18.6	79.4	N/A	N/A	N/A	N/A	N/A	N/A
Gas Probe 2 Shallow	HANSGP2S	6/20/2019 12:22	0.1	1.2	19.5	79.2	N/A	N/A	N/A	N/A	N/A	N/A
Gas Probe 2 Middle	HANSGP2M	6/20/2019 12:32	0.1	1.3	18.8	79.8	N/A	N/A	N/A	N/A	N/A	N/A
Gas Probe 2 Deep	HANSGP2D	6/20/2019 12:49	0.1	1.2	18.2	80.5	N/A	N/A	N/A	N/A	N/A	N/A
Gas Probe 3	HANSGP03	6/20/2019 12:57	0.1	1.4	20.6	77.9	N/A	N/A	N/A	N/A	N/A	N/A
Gas Probe 4	HANSGP04	6/20/2019 13:44	0.1	1.9	19.9	78.1	N/A	N/A	N/A	N/A	N/A	N/A
Gas Probe 5	HANSGP05	6/20/2019 13:57	0.1	1.3	20.4	78.2	N/A	N/A	N/A	N/A	N/A	N/A
Gas Probe 6	HANSGP06	6/20/2019 11:28	0	4.5	14.9	80.6	N/A	N/A	N/A	N/A	N/A	N/A
Gas Probe 7	HANSGP07	6/20/2019 13:34	0.1	3.3	18.2	78.4	N/A	N/A	N/A	N/A	N/A	N/A

Notes

Flow rates measured using orifice plates, where available.

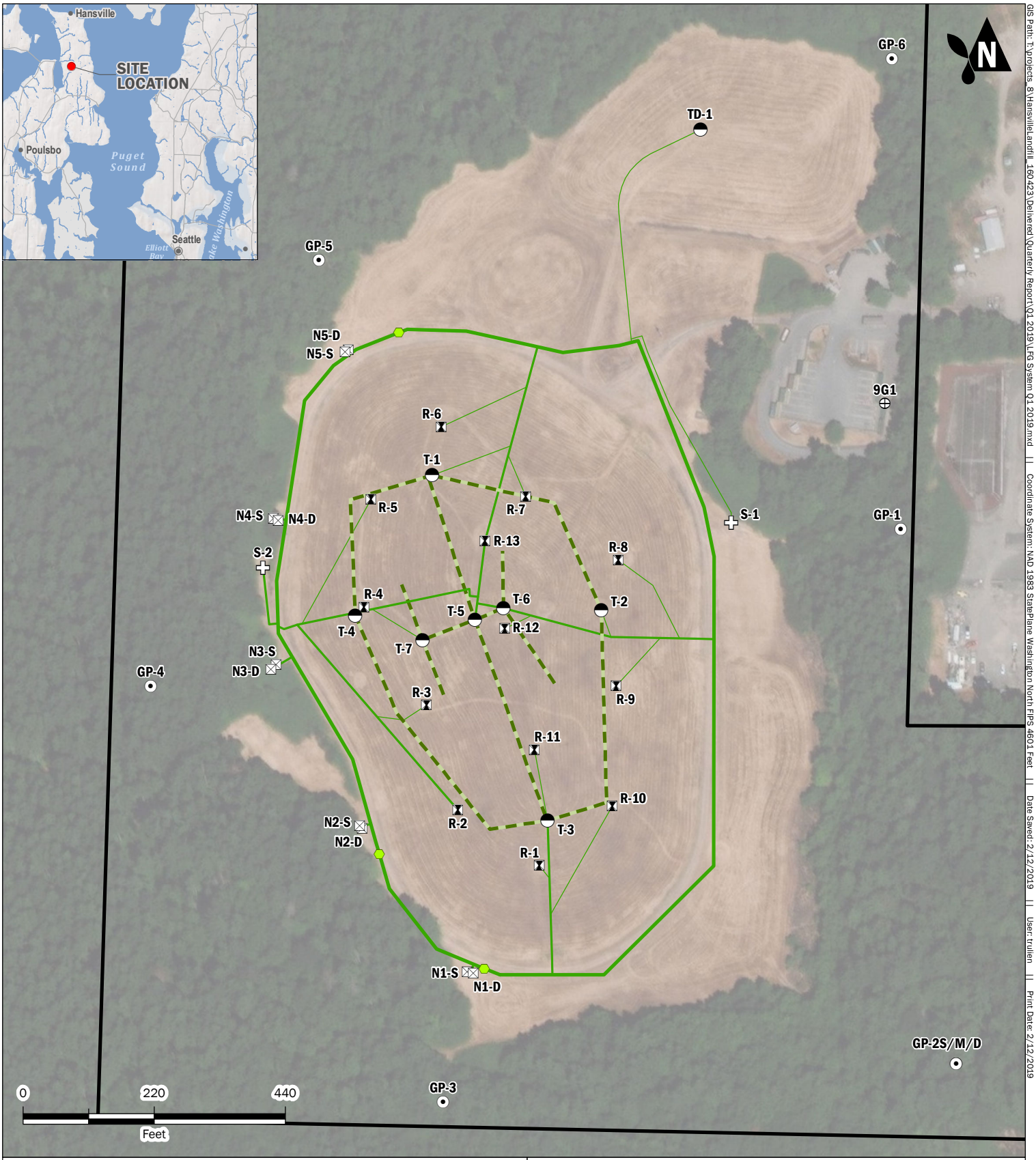
N/A = indicates parameter not measured

inches H2O = inches water column

degrees F = degrees Fahrenheit

SCFM = standard cubic feet per minute

Native Soil extraction wells have been inactive since 2017, and were inadvertently not measured in June. Measurements made in July are provided for reporting services.



GIS Path: T:\projects_8\Hansville\Landfill_160423\Delivered\Quarterly Report\Q1 2019\LFG System Q1 2019.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/12/2019 || User: trullen || Print Date: 2/12/2019

Exploration

- Condensate Sump
- Gas Detection Probe
- Gas Extraction Well (Native Soil Completion)
- Gas Extraction Well (in Refuse Completion)
- Trench Completion
- Well Geologic Control

Landfill Gas System

- LFG Pipe - 2"
- LFG Pipe - 4"
- LFG Pipe - 6"
- Trench
- LFG Valve
- Landfill Boundary

Landfill Gas System

Second Quarter 2019 Environmental Monitoring
Report Hansville Landfill
Kitsap County, Washington

Aspect Consulting	JUL-2019	BY: MLK / RAP	FIGURE NO. A-1
	PROJECT NO. 160423	REVISED BY: ---	

ATTACHMENT B

Water Quality Results

Table B-1. Water Level Elevations

Project No. 160423, Hansville Landfill, Hansville, WA

Well	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Screen Elevation (ft NAVD88)		Depth to Water (ft)	Water Level Elevation (ft NAVD88)
			Top	Bottom		
MW-5	363.7	366.9	244	234	98.82	268.1
MW-6	332.0	332.7	260	245	73.12	259.6
MW-7	344.3	346.0	259	244	83.68	262.3
MW-12I	245.6	248.1	217	207	9.58	238.5
MW-13D	258.1	260.4	205	195	10.59	249.8
MW-14	338.6	341.1	262	247	81.76	259.3

Notes

Depths to water collected April 17, 2019.

Elevations relative to North American Vertical Datum of 1988 (NAVD88).

ft - feet

Table B-2. Groundwater Quality Results

Project No. 160423, Hansville Landfill, Hansville, WA

		Location	MW-5	MW-6	MW-7	MW-12I	MW-13D	MW-14
		Date	04/17/2019	04/17/2019	04/17/2019	04/17/2019	04/17/2019	04/17/2019
Parameter	Units	Site Cleanup Level						
Field Parameters								
Dissolved Oxygen	mg/L		**9.08**	**0.16**	**1.09**	**0.73**	**0.73**	**1.46**
pH	pH units		**7.23**	**7.05**	**6.34**	**7.14**	**7.51**	**7.05**
Redox	mV		**22.0**	**115.7**	**14.2**	**6.8**	**6.5**	**35.4**
Specific Conductivity	uS/cm		**152.3**	**332.9**	**236.3**	**158.4**	**182.9**	**330.5**
Temperature	deg C		**10.1**	**12.8**	**9.5**	**9.8**	**10.4**	**11.4**
Turbidity	NTU		**0.56**	**3.89**	**0.67**	**0.44**	**0.68**	**0.86**
Conventional Parameters								
Alkalinity	mg/L		**64**	**150**	**130**	**84**	**74**	**120**
Ammonia (as N)	mg/L		0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U
Bicarbonate	mg/L		**64**	**150**	**130**	**84**	**74**	**120**
Carbonate	mg/L		10 U	10 U	10 U	10 U	10 U	10 U
Chloride	mg/L		**1.7**	**5.0**	1.0 U	**2.3**	**5.4**	**21**
Nitrate (as N)	mg/L		**2.03**	**0.696**	**0.324**	0.1 U	0.1 U	**0.548**
Nitrite (as N)	mg/L		0.1 U	**0.176**	0.1 U	0.1 U	0.1 U	0.1 U
Sulfate	mg/L		**7.9**	**24**	**2.8**	**4.5**	**16**	**14**
Total Organic Carbon	mg/L		1.0 U	**1.4**	**2.0**	**2.8**	1.0 U	**2.4**
Dissolved Metals								
Arsenic	mg/L	0.005	**0.00203**	**0.00176**	**0.00118**	**0.00215**	**0.00513**	**0.0121**
Manganese	mg/L	2.24	0.0010 U	**0.41**	0.0010 UJ	**0.027**	**0.0056**	**0.12**
Volatile Organic Compounds (detected only)								
Vinyl Chloride	ug/L	0.025	0.020 U	**0.096**	0.020 U	**0.054**	0.020 U	0.020 U

Notes

Samples were collected on April 17, 2019.
Bold - Detected
Shaded - Exceeded Site Cleanup Level
U - Not detected at or above reporting limit
UJ - Estimated "usable"
mV = millivolts

µS/cm = microSiemens per centimeter
deg C = degrees Celcius
NTU = Nephelometric Turbidity Units
mg/L = milligram per liter
µg/L = microgram per liter

Table B-3. Surface Water Quality Results

Project No. 160423, Hansville Landfill, Hansville, WA

		Location	SW-1	SW-4	SW-6	SW-7
		Date	04/17/2019	04/17/2019	04/17/2019	04/17/2019
Analyte	Unit	Site Cleanup Level				
Field Parameters						
Dissolved Oxygen	mg/L		**9.80**	**8.89**	**8.89**	**10.37**
pH	pH units		**6.95**	**7.2**	**7.25**	**7.65**
Redox	mV		**117.8**	**87.6**	**87.6**	**101.5**
Specific Conductivity	uS/cm		**170.6**	**113.1**	**113.1**	**130.1**
Temperature	deg C		**9.7**	**10.1**	**10.1**	**9.6**
Turbidity	NTU		**25.9**	**9.71**	**24.5**	**3.24**
Conventional Parameters						
Alkalinity	mg/L		**72**	**140**	**50**	**52**
Ammonia (as N)	mg/L		0.030 U	0.030 U	**0.031**	0.030 U
Bicarbonate	mg/L		**72**	**140**	**50**	**52**
Carbonate	mg/L		10 U	10 U	10 U	10 U
Chloride	mg/L		**4.5**	**12**	**3.6**	**3.9**
Nitrate (as N)	mg/L		**1.71**	**0.804**	**0.135**	**0.973**
Nitrite (as N)	mg/L		0.1 U	0.1 U	0.1 U	0.1 U
Sulfate	mg/L		**9.4**	**17**	**4.6**	**6.8**
Total Organic Carbon	mg/L		**2.0**	**9.0**	**19**	**10**
Dissolved Metals						
Arsenic	mg/L	0.005	**0.00164**	**0.00215**	**0.00348**	**0.00126**
Manganese	mg/L	2.24	0.0010 U	**0.031**	**0.057**	**0.0025**
Volatile Organic Compounds (detected only)						
Vinyl Chloride	ug/L	0.025	0.020 U	0.020 U	0.020 U	0.020 U

Notes

Samples were collected on April 17, 2019.

Bold - Detected

Shaded - Exceeded Site Cleanup Level

U - Not detected at or above reporting limit

mV = millivolts

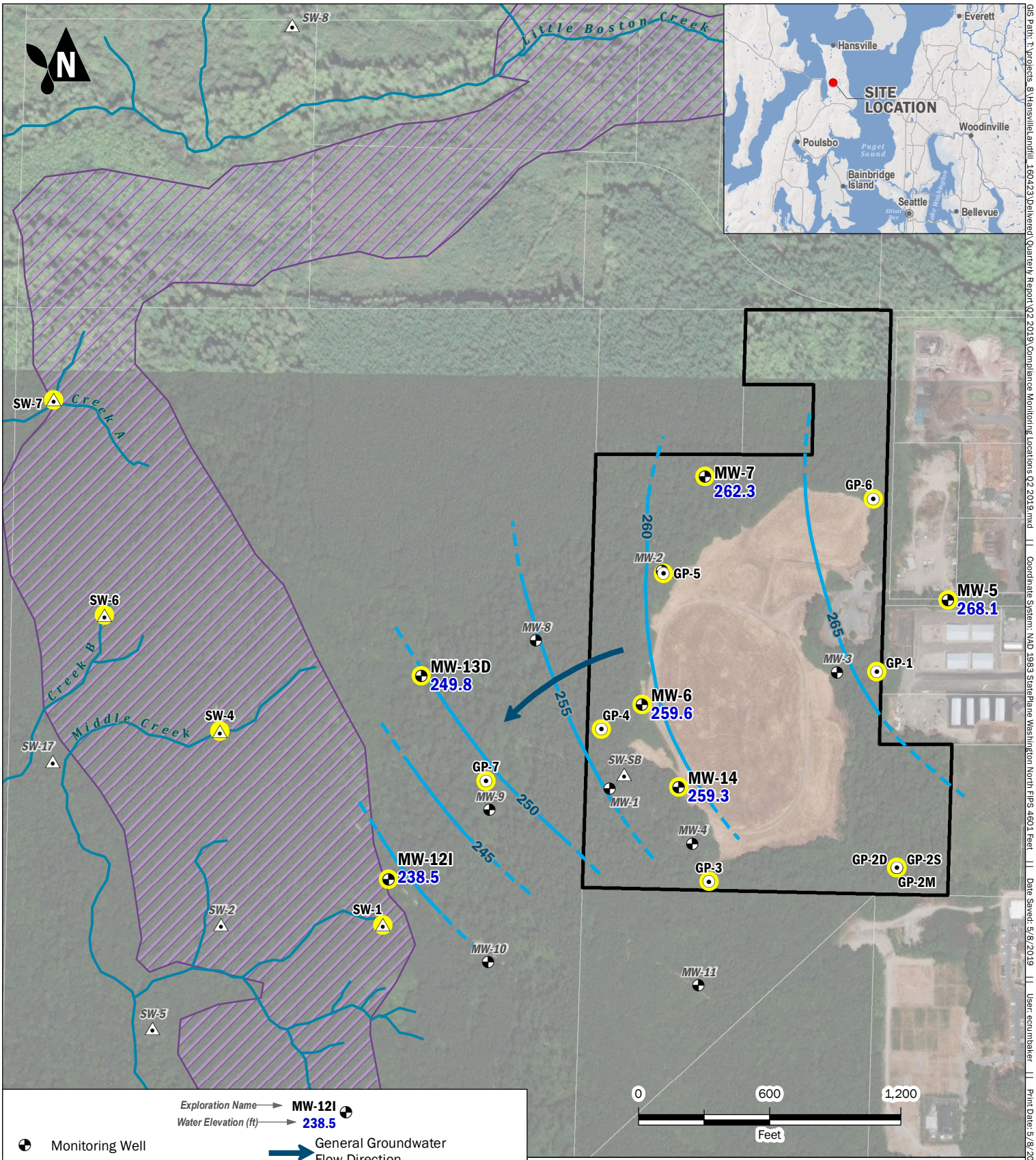
µS/cm = microSiemens per centimeter

deg C = degrees Celcius

NTU = Nephelometric Turbidity Units

mg/L = milligram per liter

µg/L = microgram per liter



Exploration Name → MW-12I
Water Elevation (ft) → 238.5

- Monitoring Well
- Gas Detection Probe
- Surface Water Station
- Compliance Monitoring Location
- Inferred Water Elevation Contour (ft, dashed where inferred) *Measured April 17th, 2019*
- General Groundwater Flow Direction
- Approximate Area of Groundwater Discharge from Upper Aquifer
- Stream
- Landfill Boundary
- Tax Parcel

Note: Vertical datum is NAVD88. Approximate area of groundwater discharge from upper aquifer delineation from Remedial Investigation Report (Parametrix, 2006).

Compliance Monitoring Locations

Second Quarter 2019 Environmental Monitoring Report
Hansville Landfill
Kitsap County, Washington

Aspect Consulting	MAY-2019	BY: MLK / RAP	FIGURE NO. B-1
	PROJECT NO. 160423	REVISED BY: WEG	

GIS Path: T:\projects_8\Hansville Landfill_160423\Delivered\Quarterly Report Q2 2019\Compliance Monitoring Locations Q2 2019.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 5/8/2019 || User: egrumbaker || Print Date: 5/8/2019

ATTACHMENT C

Groundwater Statistics and Time-Series Plots

Table C-1. Statistical Analysis

Project 160423, Hansville Landfill, Hansville, WA

Dissolved Arsenic Statistical Results

Well	Statistical Trend[1]	Mann-Kendall Test[2]				Sen's Slope	
		Test Value, Z	Critical Value	Number of data points, n	Statistical Significance	(ug/L per day)	(ug/L per year)
MW-5	--[3]	--	--	--	--	--	--
MW-6	--	--	--	--	--	--	--
MW-7	--	--	--	--	--		--
MW-12I	--	--	--	--	--	--	--
MW-13D	--	--	--	--	--		--
MW-14	Decreasing	-6.9	-1.96	49	Yes	-3.4E-06	-0.0012

Vinyl Chloride Statistical Results

Well	Statistical Trend[1]	Mann-Kendall Test[2]				Sen's Slope	
		Test Value, Z	Critical Value	Number of data points, n	Statistical Significance	(ug/L per day)	(ug/L per year)
MW-5	--[3]	--	--	--	--		--
MW-6	Decreasing	-6.3	-1.96	50	Yes	-6.9E-05	-0.025
MW-7	--	--	--	--	--		--
MW-12I	Decreasing	-7.2	-1.96	50	Yes	-1.0E-04	-0.038
MW-13D	--	--	--	--	--		--
MW-14	Decreasing	-8.3	-1.96	50	Yes	-1.1E-04	-0.039

Notes

1 - The Statistical Trend indicates:

"Non-significant" if the magnitude of the Test Value is less than the Critical Value,

"Increasing" if the magnitude of the Test Value is greater than the Critical Value and the Sen's Slope is positive, or

"Decreasing" if the magnitude of the Test Value is greater than the Critical Value and the Sen's Slope is negative.

2 - Mann-Kendall tests were performed with alpha = 0.05 (95% confidence level).

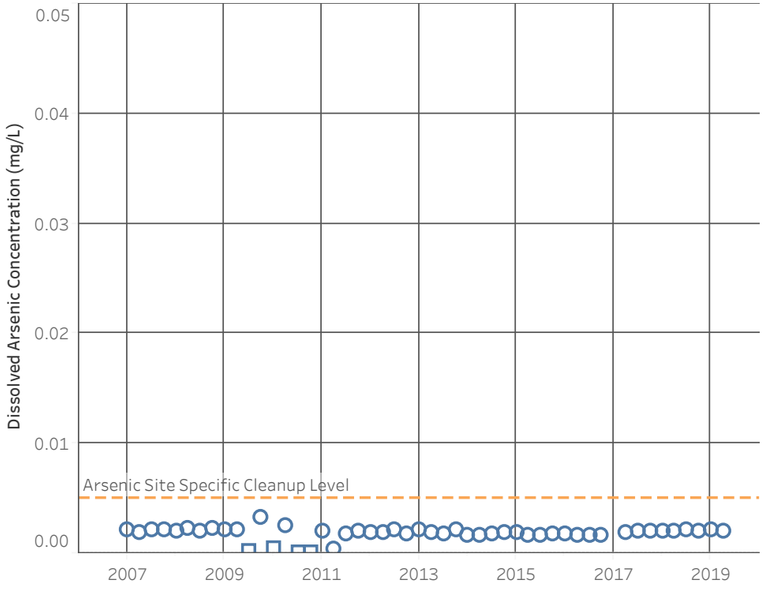
For N>40, Mann-Kendall uses an approximation of a normal distribution, represented by Test Value Z.

For N<=40, Mann-Kendall scores are reported as Test Value S.

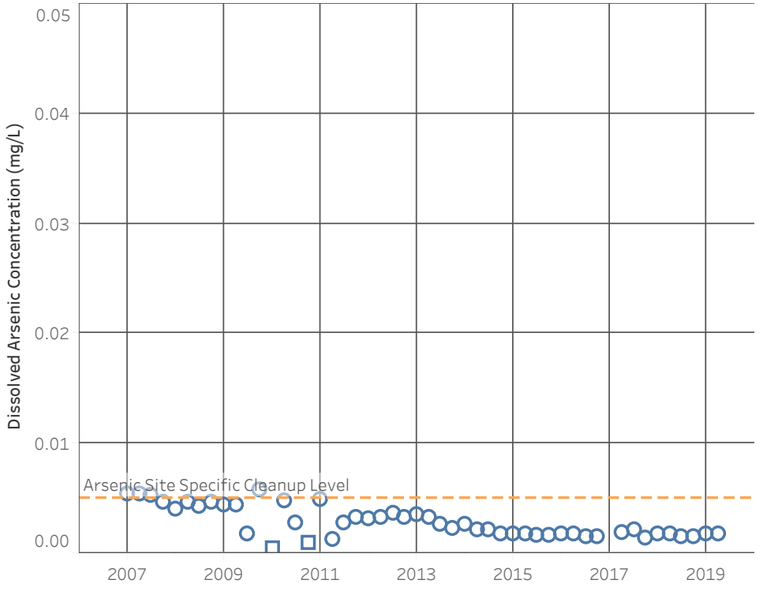
3 - "--" Indicates most recent groundwater concentrations were below the Site-specific cleanup level.

ug/L - micrograms per liter

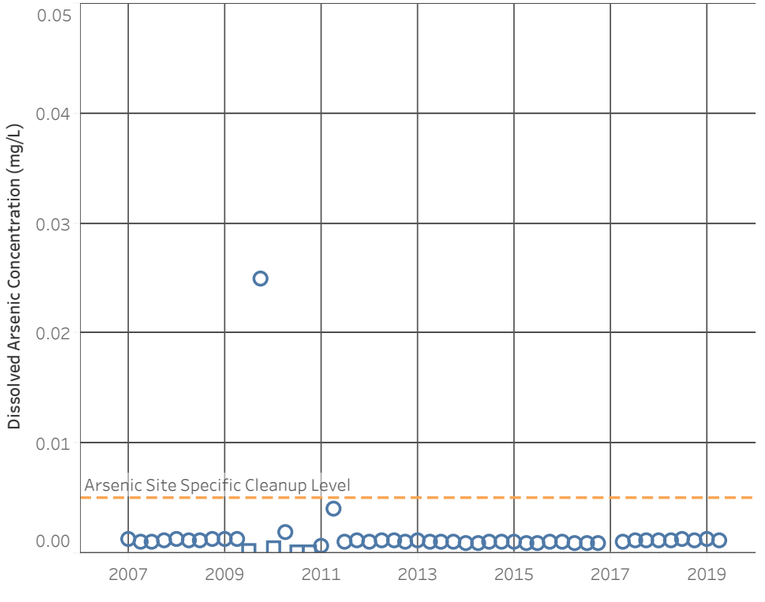
MW-5 (Background Well)



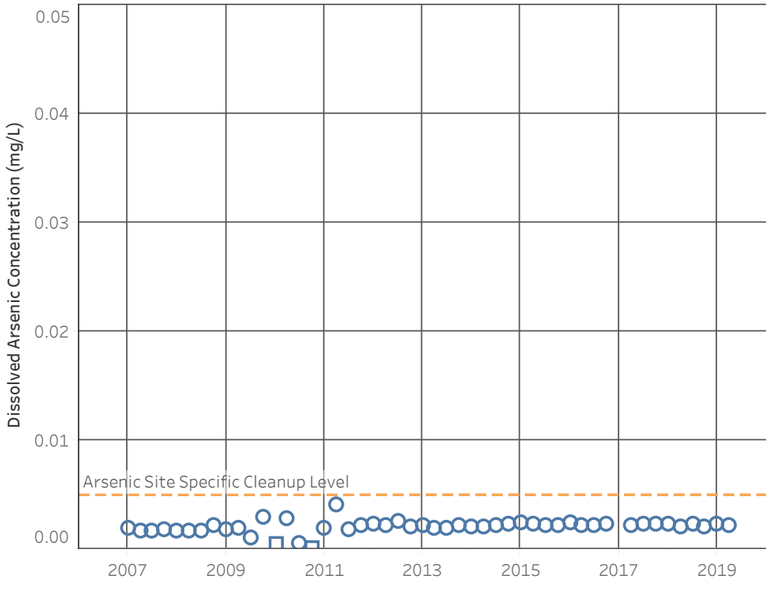
MW-6



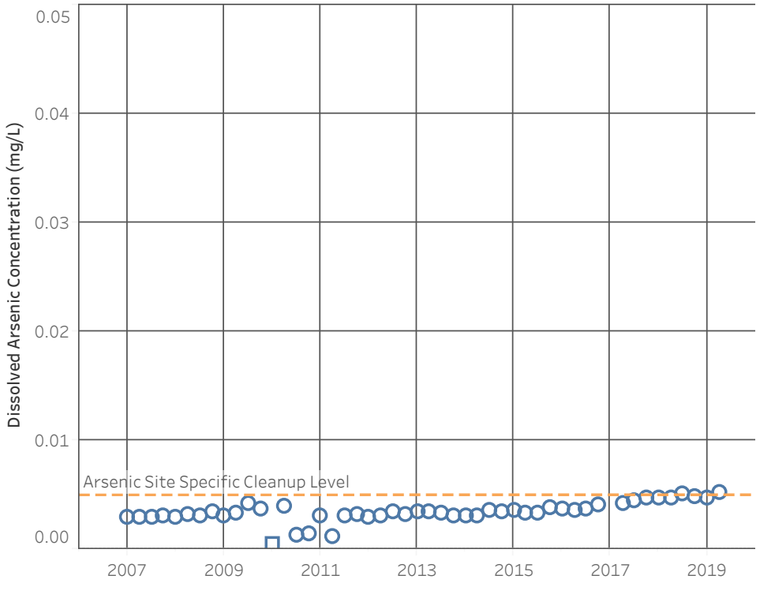
MW-7



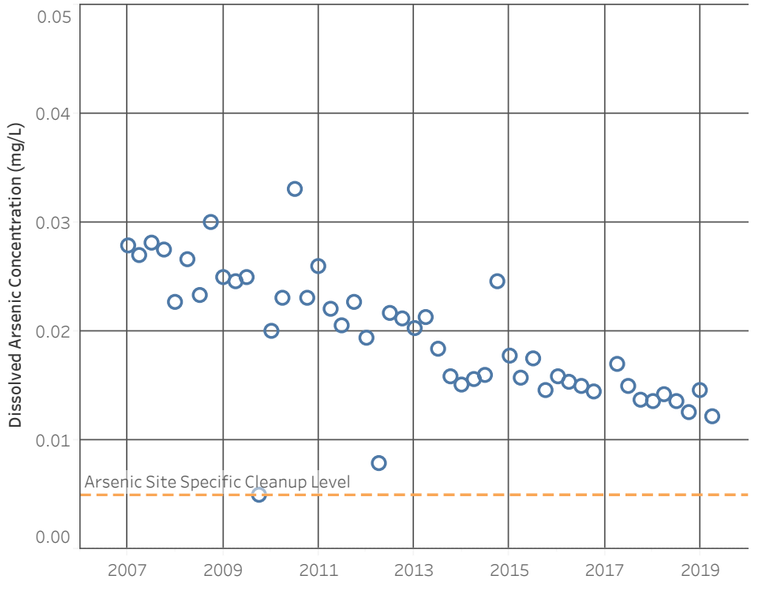
MW-12I



MW-13D



MW-14



Note: Non-detected values are shown at 1/2 the reporting limit.
Results from First Quarter 2017 were rejected. See text.

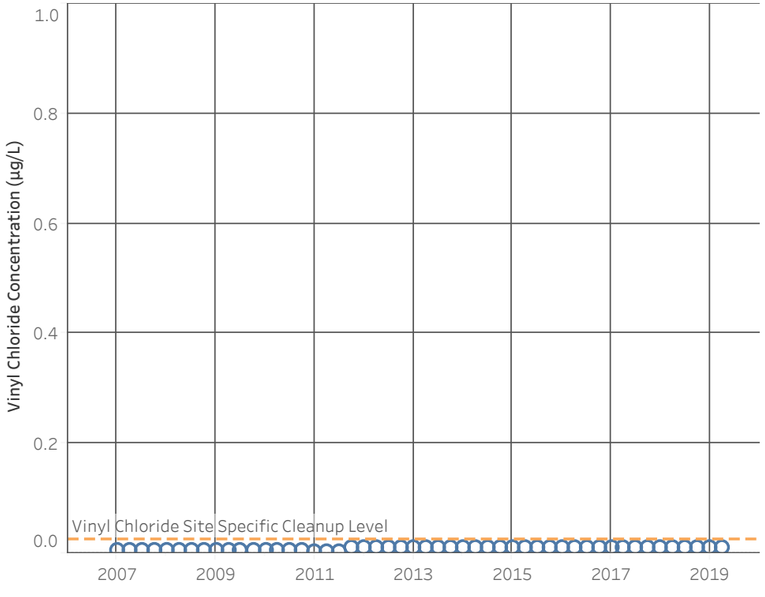
Result Flags
○ Detected □ U - Non-Detect

Aspect CONSULTING

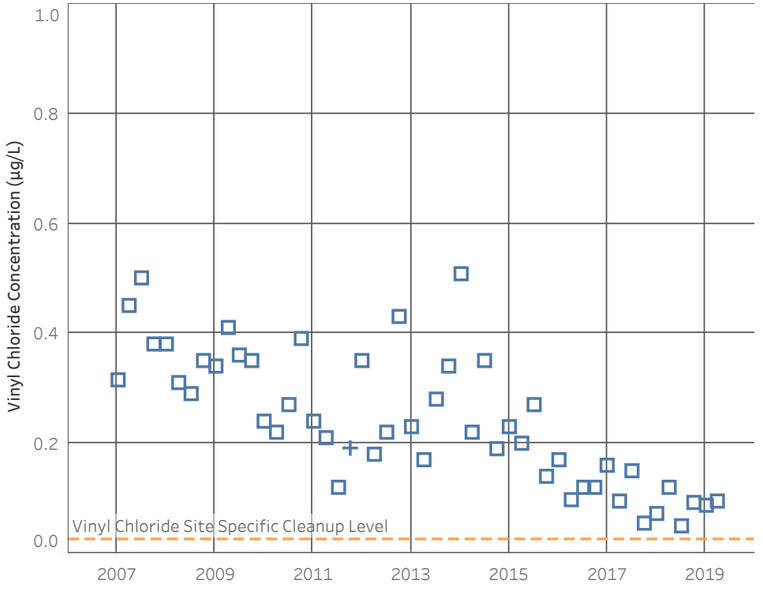
05/30/2019
Trend Plots (As)

Figure C-1 - Dissolved Arsenic Sampling Results
Second Quarter 2019 Environmental Monitoring Report
Hansville Landfill
Kitsap County, WA

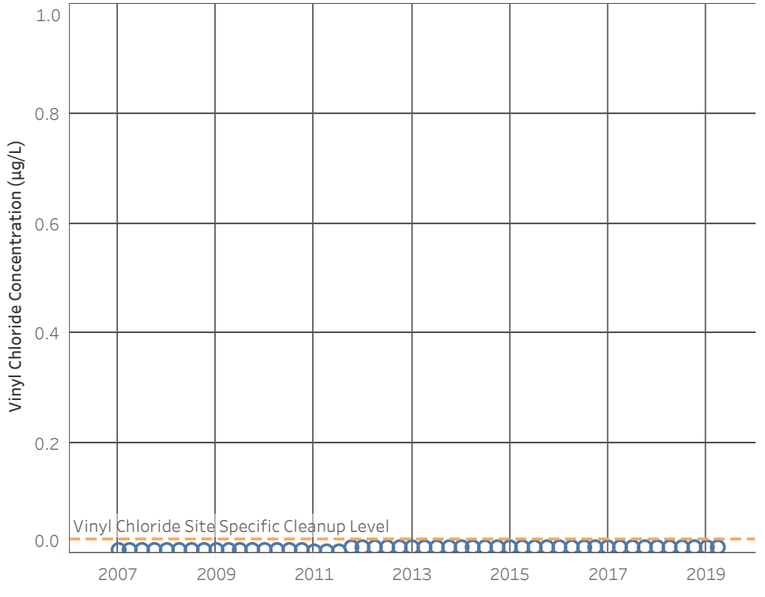
MW-5 (Background Well)



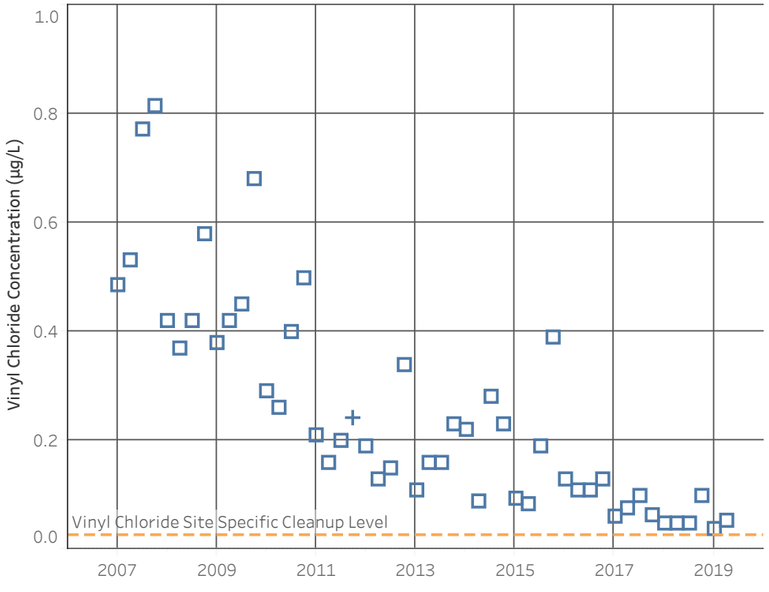
MW-6



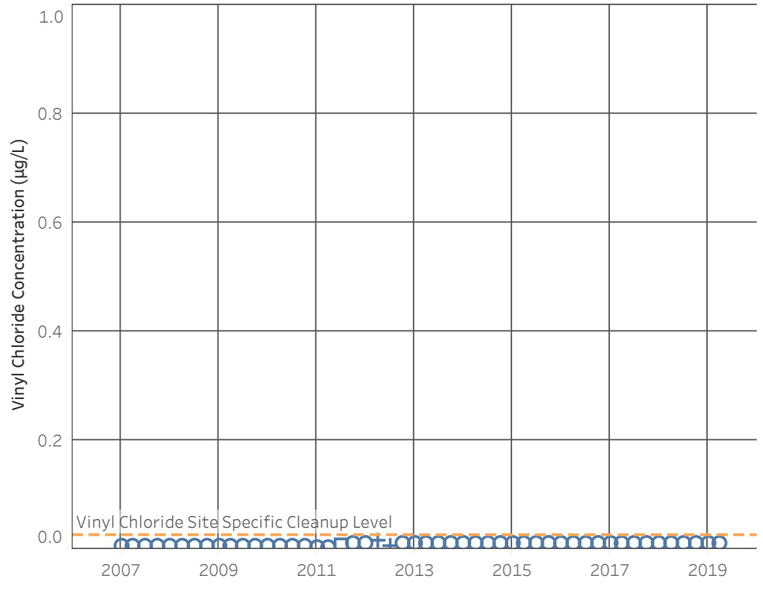
MW-7



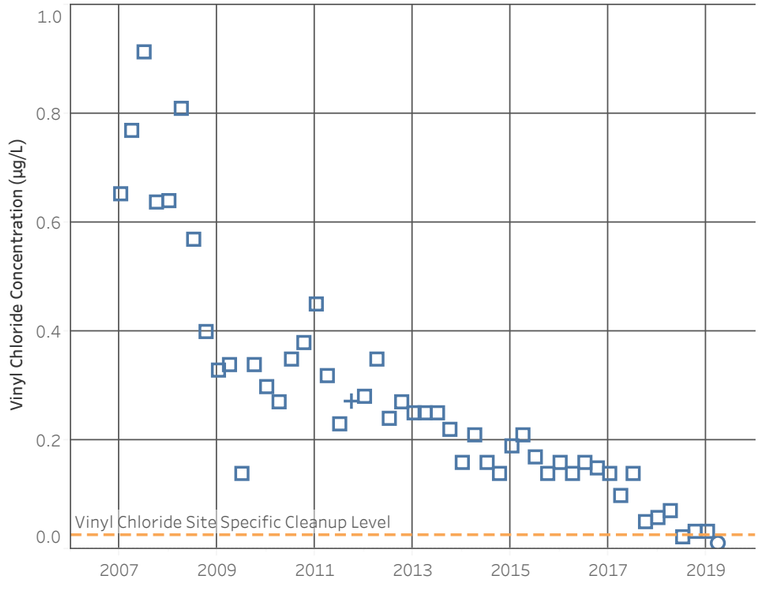
MW-12I



MW-13D



MW-14



Result Flags
Detected
J - Estimate
U - Non-Detect

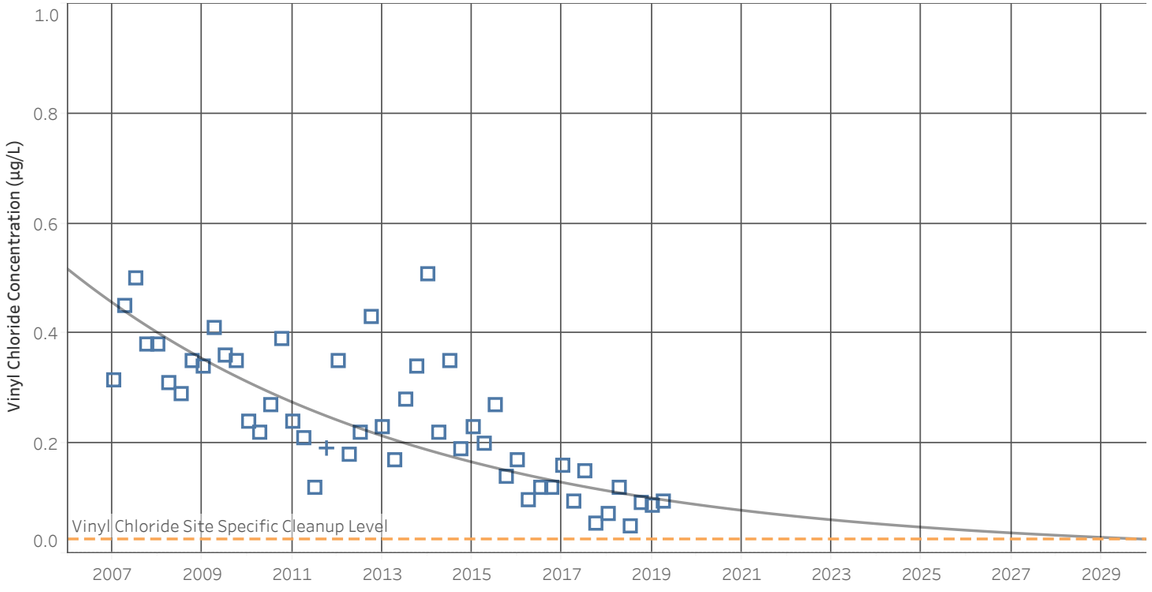
Note: Non-detected values are shown at 1/2 the reporting limit.

Aspect CONSULTING

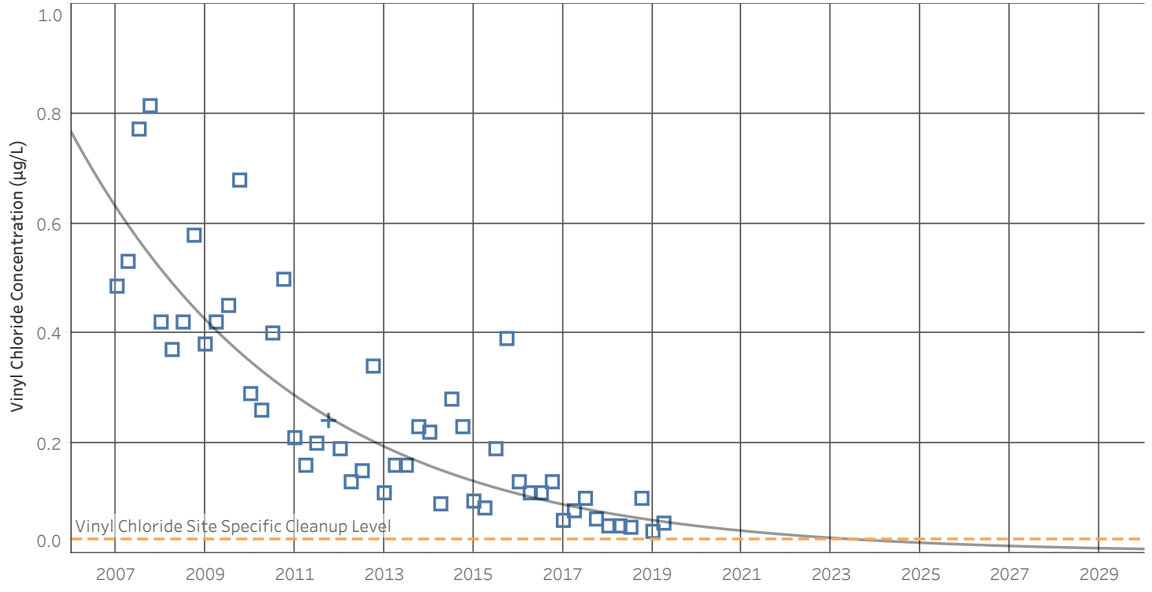
05/30/2019
Trend Plots (VC)

Figure C-2 - Vinyl Chloride Sampling Results
Second Quarter 2019 Environmental Monitoring Report
Hansville Landfill
Kitsap County, WA

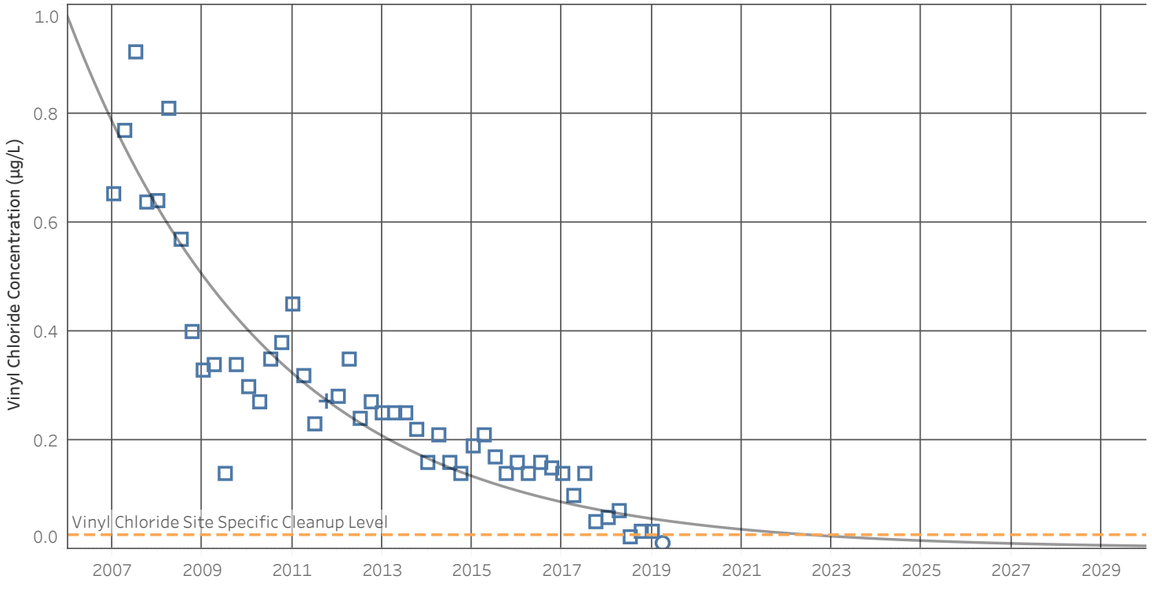
MW-6 Vinyl Chloride Trend



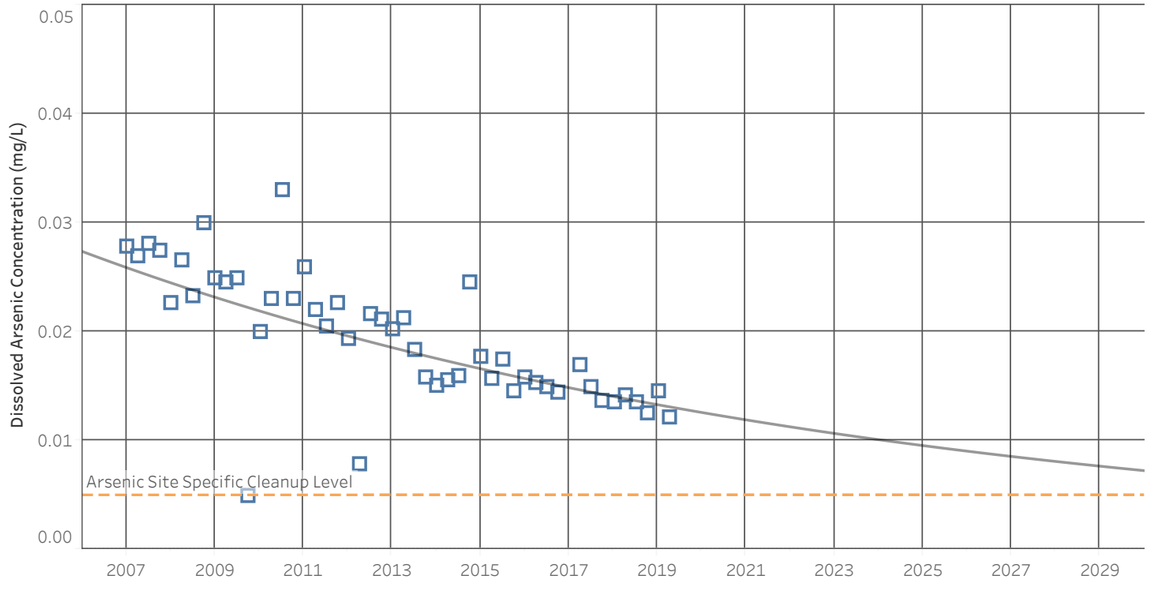
MW-12I Vinyl Chloride Trend



MW-14 Vinyl Chloride Trend



MW-14 Dissolved Arsenic Trend



Note: Non-detected values are shown at 1/2 the reporting limit.
Attentuation curves based on exponential least squares fit to the data.

Result Flags
□ Detected + J - Estimate ○ U - Non-Detect

Aspect CONSULTING

05/30/2019
Trend Plots (VC)

Figure C-3 - 10 Year Attenuation Curves
Second Quarter 2019 Environmental Monitoring Report
Hansville Landfill
Kitsap County, WA

ATTACHMENT D

Field Forms and Laboratory Sheets

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-122820-1
Client Project/Site: Hansville Landfill

For:
Aspect Consulting
350 Madison Ave N
Bainbridge Island, Washington 98110

Attn: Ms. Meilani Lanier-Kamaha'o

Betsy Sara

Authorized for release by:
5/10/2019 3:18:34 PM

Betsy Sara, Project Manager II
(303)736-0189
betsy.sara@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Qualifiers

Metals

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

Glossary

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

Job ID: 280-122820-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Aspect Consulting

Project: Hansville Landfill

Report Number: 280-122820-1

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 some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than Eurofins TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

Sample Receiving

The samples were received on 04/19/2019; the samples arrived properly preserved and on ice. The temperature of the cooler at receipt was 3.6 C.

One of three hydrochloric preserved VOA vials for sample MW-20-DD-041719 (280-122820-11) was received empty, however sufficient volume remained to proceed with the analysis. The client was notified.

Six hydrochloric preserved VOA vials for a TRIP BLANK were received but not listed on the chain of custody. The TRIP BLANK was logged for 8260C SIM Vinyl Chloride per the volume received. The client was notified.

Holding Times

All holding times were within established control limits.

Method Blanks

All Method Blanks were within established control limits.

Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

Sample MW-7-041719 was selected to fulfill the laboratory batch quality control requirements for Method 6020. Analysis of the laboratory generated MS/MSD for this sample exhibited recoveries of Dissolved Manganese below the lower control limit. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, this anomaly may be due to matrix interference and no corrective action was taken.

All other MS and MSD samples were within established control limits.

General Comments

The analysis for 8260C SIM was performed by TestAmerica Buffalo. Their address and phone number are:

Job ID: 280-122820-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

TestAmerica Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
716-691-2600

The analysis for Nitrate, Nitrite, Ortho-phosphate Method 300.0, and Dissolved Arsenic Method 200.8 were performed by ARI. Their address and phone number are:
Analytical Resources, Inc.
4611 S.134th Place
Tukwila, WA 98168-3240
206-695-6200

Detection Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Client Sample ID: MW-7-041719 — Lab Sample ID: 280-122820-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2.8		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	130		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	130		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Average	2.0		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: MW-5-041719 — Lab Sample ID: 280-122820-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1.7		1.0		mg/L	1		300.0	Total/NA
Sulfate	7.9		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	64		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	64		10		mg/L	1		SM 2320B	Total/NA

Client Sample ID: SW-1-041719 — Lab Sample ID: 280-122820-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.5		1.0		mg/L	1		300.0	Total/NA
Sulfate	9.4		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	72		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	72		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Average	2.0		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: MW-12I-041719 — Lab Sample ID: 280-122820-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.054		0.020		ug/L	1		8260C SIM	Total/NA
Manganese	27		1.0		ug/L	1		6020	Dissolved
Chloride	2.3		1.0		mg/L	1		300.0	Total/NA
Sulfate	4.5		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	84		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	84		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Average	2.8		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: SW-6-041719 — Lab Sample ID: 280-122820-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	57		1.0		ug/L	1		6020	Dissolved
Chloride	3.6		1.0		mg/L	1		300.0	Total/NA
Sulfate	4.6		1.0		mg/L	1		300.0	Total/NA
Ammonia as N	0.031		0.030		mg/L	1		350.1	Total/NA
Total Alkalinity	50		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	50		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Average	19		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: SW-4-041719 — Lab Sample ID: 280-122820-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	31		1.0		ug/L	1		6020	Dissolved
Chloride	12		1.0		mg/L	1		300.0	Total/NA
Sulfate	17		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	140		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	140		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Average	9.0		1.0		mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Client Sample ID: MW-13D-041719 — Lab Sample ID: 280-122820-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	5.6		1.0		ug/L	1		6020	Dissolved
Chloride	5.4		1.0		mg/L	1		300.0	Total/NA
Sulfate	16		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	74		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	74		10		mg/L	1		SM 2320B	Total/NA

Client Sample ID: SW-7-041719 — Lab Sample ID: 280-122820-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	2.5		1.0		ug/L	1		6020	Dissolved
Chloride	3.9		1.0		mg/L	1		300.0	Total/NA
Sulfate	6.8		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	52		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	52		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Average	10		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: MW-6-041719 — Lab Sample ID: 280-122820-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.096		0.020		ug/L	1		8260C SIM	Total/NA
Manganese	410		1.0		ug/L	1		6020	Dissolved
Chloride	5.0		1.0		mg/L	1		300.0	Total/NA
Sulfate	24		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	150		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	150		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Average	1.4		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: MW-14-041719 — Lab Sample ID: 280-122820-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	120		1.0		ug/L	1		6020	Dissolved
Chloride	21		1.0		mg/L	1		300.0	Total/NA
Sulfate	14		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	120		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	120		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Average	2.4		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: MW-20-DD-041719 — Lab Sample ID: 280-122820-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	130		1.0		ug/L	1		6020	Dissolved
Chloride	23		1.0		mg/L	1		300.0	Total/NA
Sulfate	15		1.0		mg/L	1		300.0	Total/NA
Total Alkalinity	130		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	130		10		mg/L	1		SM 2320B	Total/NA
Total Organic Carbon - Average	2.3		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 280-122820-12

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Method	Method Description	Protocol	Laboratory
8260C SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL BUF
6020	Metals (ICP/MS)	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
350.1	Nitrogen, Ammonia	MCAWW	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL DEN
Subcontract	Dissolved As (ARI) - direct sub to ARI from field	None	SC0056
Subcontract	Nitrate/Nitrite/o-phos(field filtered) (ARI) - direct sub to ARI from field	None	SC0056
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL DEN
5030C	Purge and Trap	SW846	TAL BUF

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

SC0056 = Analytical Resources, Inc, 4611 South 134th Place, Suite 100, Tukwila, WA 98168, TEL (206)695-6200
TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-122820-1	MW-7-041719	Water	04/17/19 09:00	04/19/19 08:55
280-122820-2	MW-5-041719	Water	04/17/19 10:25	04/19/19 08:55
280-122820-3	SW-1-041719	Water	04/17/19 11:35	04/19/19 08:55
280-122820-4	MW-12I-041719	Water	04/17/19 12:00	04/19/19 08:55
280-122820-5	SW-6-041719	Water	04/17/19 12:15	04/19/19 08:55
280-122820-6	SW-4-041719	Water	04/17/19 12:50	04/19/19 08:55
280-122820-7	MW-13D-041719	Water	04/17/19 13:10	04/19/19 08:55
280-122820-8	SW-7-041719	Water	04/17/19 14:30	04/19/19 08:55
280-122820-9	MW-6-041719	Water	04/17/19 15:45	04/19/19 08:55
280-122820-10	MW-14-041719	Water	04/17/19 15:00	04/19/19 08:55
280-122820-11	MW-20-DD-041719	Water	04/17/19 00:00	04/19/19 08:55
280-122820-12	TRIP BLANK	Water	04/17/19 00:00	04/19/19 08:55

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW-7-041719
Date Collected: 04/17/19 09:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/25/19 12:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*86*		*50 - 150*		*04/25/19 12:44*	*1*
TBA-d9 (Surr)	*111*		*50 - 150*		*04/25/19 12:44*	*1*

Client Sample ID: MW-5-041719
Date Collected: 04/17/19 10:25
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/25/19 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*87*		*50 - 150*		*04/25/19 13:08*	*1*
TBA-d9 (Surr)	*98*		*50 - 150*		*04/25/19 13:08*	*1*

Client Sample ID: SW-1-041719
Date Collected: 04/17/19 11:35
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/25/19 13:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*87*		*50 - 150*		*04/25/19 13:33*	*1*
TBA-d9 (Surr)	*100*		*50 - 150*		*04/25/19 13:33*	*1*

Client Sample ID: MW-12I-041719
Date Collected: 04/17/19 12:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.054**		0.020		ug/L			04/25/19 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*86*		*50 - 150*		*04/25/19 13:57*	*1*
TBA-d9 (Surr)	*114*		*50 - 150*		*04/25/19 13:57*	*1*

Client Sample ID: SW-6-041719
Date Collected: 04/17/19 12:15
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/25/19 14:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*87*		*50 - 150*		*04/25/19 14:21*	*1*
TBA-d9 (Surr)	*104*		*50 - 150*		*04/25/19 14:21*	*1*

Client Sample ID: SW-4-041719
Date Collected: 04/17/19 12:50
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/25/19 14:45	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*87*		*50 - 150*		*04/25/19 14:45*	*1*
TBA-d9 (Surr)	*108*		*50 - 150*		*04/25/19 14:45*	*1*

Client Sample ID: MW-13D-041719 — **Lab Sample ID: 280-122820-7**
Date Collected: 04/17/19 13:10 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/25/19 15:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*87*		*50 - 150*		*04/25/19 15:10*	*1*
TBA-d9 (Surr)	*96*		*50 - 150*		*04/25/19 15:10*	*1*

Client Sample ID: SW-7-041719 — **Lab Sample ID: 280-122820-8**
Date Collected: 04/17/19 14:30 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/25/19 15:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*87*		*50 - 150*		*04/25/19 15:35*	*1*
TBA-d9 (Surr)	*103*		*50 - 150*		*04/25/19 15:35*	*1*

Client Sample ID: MW-6-041719 — **Lab Sample ID: 280-122820-9**
Date Collected: 04/17/19 15:45 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.096**		0.020		ug/L			04/25/19 15:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*86*		*50 - 150*		*04/25/19 15:59*	*1*
TBA-d9 (Surr)	*109*		*50 - 150*		*04/25/19 15:59*	*1*

Client Sample ID: MW-14-041719 — **Lab Sample ID: 280-122820-10**
Date Collected: 04/17/19 15:00 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/25/19 16:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*87*		*50 - 150*		*04/25/19 16:23*	*1*
TBA-d9 (Surr)	*107*		*50 - 150*		*04/25/19 16:23*	*1*

Client Sample ID: MW-20-DD-041719 — **Lab Sample ID: 280-122820-11**
Date Collected: 04/17/19 00:00 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/30/19 18:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*101*		*50 - 150*		*04/30/19 18:09*	*1*
TBA-d9 (Surr)	*87*		*50 - 150*		*04/30/19 18:09*	*1*

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: TRIP BLANK — **Lab Sample ID: 280-122820-12**
Date Collected: 04/17/19 00:00 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/30/19 18:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*50 - 150*		*04/30/19 18:33*	*1*
TBA-d9 (Surr)	*89*		*50 - 150*		*04/30/19 18:33*	*1*

Method: 6020 - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-7-041719 — **Lab Sample ID: 280-122820-1**
Date Collected: 04/17/19 09:00 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND	F1	1.0		ug/L		04/25/19 08:00	04/25/19 20:32	1

Client Sample ID: MW-5-041719 — **Lab Sample ID: 280-122820-2**
Date Collected: 04/17/19 10:25 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		1.0		ug/L		04/25/19 08:00	04/25/19 20:49	1

Client Sample ID: SW-1-041719 — **Lab Sample ID: 280-122820-3**
Date Collected: 04/17/19 11:35 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		1.0		ug/L		04/25/19 08:00	04/25/19 20:53	1

Client Sample ID: MW-12I-041719 — **Lab Sample ID: 280-122820-4**
Date Collected: 04/17/19 12:00 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**27**		1.0		ug/L		04/25/19 08:00	04/25/19 21:03	1

Client Sample ID: SW-6-041719 — **Lab Sample ID: 280-122820-5**
Date Collected: 04/17/19 12:15 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**57**		1.0		ug/L		04/25/19 08:00	04/25/19 21:07	1

Client Sample ID: SW-4-041719 — **Lab Sample ID: 280-122820-6**
Date Collected: 04/17/19 12:50 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**31**		1.0		ug/L		04/25/19 08:00	04/25/19 21:10	1

Client Sample ID: MW-13D-041719 — **Lab Sample ID: 280-122820-7**
Date Collected: 04/17/19 13:10 — **Matrix: Water**
Date Received: 04/19/19 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**5.6**		1.0		ug/L		04/25/19 08:00	04/25/19 21:14	1

Method: 6020 - Metals (ICP/MS) - Dissolved

Client Sample ID: SW-7-041719
Date Collected: 04/17/19 14:30
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**2.5**		1.0		ug/L		04/25/19 08:00	04/25/19 21:17	1

Client Sample ID: MW-6-041719
Date Collected: 04/17/19 15:45
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**410**		1.0		ug/L		04/25/19 08:00	04/25/19 21:21	1

Client Sample ID: MW-14-041719
Date Collected: 04/17/19 15:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**120**		1.0		ug/L		04/25/19 08:00	04/25/19 21:24	1

Client Sample ID: MW-20-DD-041719
Date Collected: 04/17/19 00:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**130**		1.0		ug/L		04/25/19 08:00	04/25/19 21:28	1

General Chemistry

Client Sample ID: MW-7-041719
Date Collected: 04/17/19 09:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0		mg/L			05/07/19 22:39	1
Sulfate	**2.8**		1.0		mg/L			05/07/19 22:39	1
Ammonia as N	ND		0.030		mg/L			04/25/19 14:20	1
Total Alkalinity	**130**		10		mg/L			04/26/19 13:37	1
Bicarbonate Alkalinity	**130**		10		mg/L			04/26/19 13:37	1
Carbonate Alkalinity	ND		10		mg/L			04/26/19 13:37	1
Total Organic Carbon - Average	**2.0**		1.0		mg/L			04/23/19 16:20	1

Client Sample ID: MW-5-041719
Date Collected: 04/17/19 10:25
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1.7**		1.0		mg/L			05/07/19 23:44	1
Sulfate	**7.9**		1.0		mg/L			05/07/19 23:44	1
Ammonia as N	ND		0.030		mg/L			04/25/19 14:34	1
Total Alkalinity	**64**		10		mg/L			04/24/19 21:14	1
Bicarbonate Alkalinity	**64**		10		mg/L			04/24/19 21:14	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 21:14	1
Total Organic Carbon - Average	ND		1.0		mg/L			04/23/19 16:34	1

Client Sample ID: SW-1-041719
Date Collected: 04/17/19 11:35
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4.5**		1.0		mg/L			05/08/19 00:00	1

General Chemistry (Continued)

Client Sample ID: SW-1-041719
Date Collected: 04/17/19 11:35
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**9.4**		1.0		mg/L			05/08/19 00:00	1
Ammonia as N	ND		0.030		mg/L			04/25/19 14:36	1
Total Alkalinity	**72**		10		mg/L			04/24/19 21:21	1
Bicarbonate Alkalinity	**72**		10		mg/L			04/24/19 21:21	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 21:21	1
Total Organic Carbon - Average	**2.0**		1.0		mg/L			04/23/19 17:23	1

Client Sample ID: MW-12I-041719
Date Collected: 04/17/19 12:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.3**		1.0		mg/L			05/08/19 00:17	1
Sulfate	**4.5**		1.0		mg/L			05/08/19 00:17	1
Ammonia as N	ND		0.030		mg/L			04/25/19 14:44	1
Total Alkalinity	**84**		10		mg/L			04/24/19 20:15	1
Bicarbonate Alkalinity	**84**		10		mg/L			04/24/19 20:15	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 20:15	1
Total Organic Carbon - Average	**2.8**		1.0		mg/L			04/23/19 17:37	1

Client Sample ID: SW-6-041719
Date Collected: 04/17/19 12:15
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.6**		1.0		mg/L			05/08/19 00:33	1
Sulfate	**4.6**		1.0		mg/L			05/08/19 00:33	1
Ammonia as N	**0.031**		0.030		mg/L			04/25/19 14:46	1
Total Alkalinity	**50**		10		mg/L			04/24/19 21:07	1
Bicarbonate Alkalinity	**50**		10		mg/L			04/24/19 21:07	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 21:07	1
Total Organic Carbon - Average	**19**		1.0		mg/L			04/23/19 17:52	1

Client Sample ID: SW-4-041719
Date Collected: 04/17/19 12:50
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12**		1.0		mg/L			05/08/19 00:50	1
Sulfate	**17**		1.0		mg/L			05/08/19 00:50	1
Ammonia as N	ND		0.030		mg/L			04/25/19 14:48	1
Total Alkalinity	**140**		10		mg/L			04/24/19 20:45	1
Bicarbonate Alkalinity	**140**		10		mg/L			04/24/19 20:45	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 20:45	1
Total Organic Carbon - Average	**9.0**		1.0		mg/L			04/23/19 18:09	1

Client Sample ID: MW-13D-041719
Date Collected: 04/17/19 13:10
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.4**		1.0		mg/L			05/08/19 01:06	1
Sulfate	**16**		1.0		mg/L			05/08/19 01:06	1
Ammonia as N	ND		0.030		mg/L			04/25/19 14:50	1

General Chemistry (Continued)

Client Sample ID: MW-13D-041719
Date Collected: 04/17/19 13:10
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	**74**		10		mg/L			04/24/19 20:22	1
Bicarbonate Alkalinity	**74**		10		mg/L			04/24/19 20:22	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 20:22	1
Total Organic Carbon - Average	ND		1.0		mg/L			04/23/19 18:55	1

Client Sample ID: SW-7-041719
Date Collected: 04/17/19 14:30
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.9**		1.0		mg/L			05/08/19 01:55	1
Sulfate	**6.8**		1.0		mg/L			05/08/19 01:55	1
Ammonia as N	ND		0.030		mg/L			04/25/19 14:52	1
Total Alkalinity	**52**		10		mg/L			04/24/19 20:08	1
Bicarbonate Alkalinity	**52**		10		mg/L			04/24/19 20:08	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 20:08	1
Total Organic Carbon - Average	**10**		1.0		mg/L			04/23/19 19:10	1

Client Sample ID: MW-6-041719
Date Collected: 04/17/19 15:45
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.0**		1.0		mg/L			05/08/19 02:12	1
Sulfate	**24**		1.0		mg/L			05/08/19 02:12	1
Ammonia as N	ND		0.030		mg/L			04/25/19 15:06	1
Total Alkalinity	**150**		10		mg/L			04/24/19 20:36	1
Bicarbonate Alkalinity	**150**		10		mg/L			04/24/19 20:36	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 20:36	1
Total Organic Carbon - Average	**1.4**		1.0		mg/L			04/23/19 19:25	1

Client Sample ID: MW-14-041719
Date Collected: 04/17/19 15:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21**		1.0		mg/L			05/08/19 02:28	1
Sulfate	**14**		1.0		mg/L			05/08/19 02:28	1
Ammonia as N	ND		0.030		mg/L			04/29/19 12:22	1
Total Alkalinity	**120**		10		mg/L			04/24/19 20:29	1
Bicarbonate Alkalinity	**120**		10		mg/L			04/24/19 20:29	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 20:29	1
Total Organic Carbon - Average	**2.4**		1.0		mg/L			04/23/19 15:50	1

Client Sample ID: MW-20-DD-041719
Date Collected: 04/17/19 00:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**23**		1.0		mg/L			05/08/19 03:34	1
Sulfate	**15**		1.0		mg/L			05/08/19 03:34	1
Ammonia as N	ND		0.030		mg/L			04/29/19 12:24	1
Total Alkalinity	**130**		10		mg/L			04/24/19 21:28	1
Bicarbonate Alkalinity	**130**		10		mg/L			04/24/19 21:28	1

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

General Chemistry (Continued)

Client Sample ID: MW-20-DD-041719
Date Collected: 04/17/19 00:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbonate Alkalinity	ND		10		mg/L			04/24/19 21:28	1
Total Organic Carbon - Average	**2.3**		1.0		mg/L			04/23/19 16:05	1

Surrogate Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DBFM (50-150)	TBA (50-150)
280-122820-1	MW-7-041719	86	111
280-122820-2	MW-5-041719	87	98
280-122820-3	SW-1-041719	87	100
280-122820-4	MW-12I-041719	86	114
280-122820-5	SW-6-041719	87	104
280-122820-6	SW-4-041719	87	108
280-122820-7	MW-13D-041719	87	96
280-122820-8	SW-7-041719	87	103
280-122820-9	MW-6-041719	86	109
280-122820-10	MW-14-041719	87	107
280-122820-11	MW-20-DD-041719	101	87
280-122820-12	TRIP BLANK	100	89
LCS 480-469692/6	Lab Control Sample	89	108
LCS 480-470496/3	Lab Control Sample	102	92
LCSD 480-469692/7	Lab Control Sample Dup	89	99
LCSD 480-470496/4	Lab Control Sample Dup	102	108
MB 480-469692/9	Method Blank	86	85
MB 480-470496/6	Method Blank	99	80

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TBA = TBA-d9 (Surr)

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-469692/9
Matrix: Water
Analysis Batch: 469692

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/25/19 12:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*86*		*50 - 150*		*04/25/19 12:11*	*1*
TBA-d9 (Surr)	*85*		*50 - 150*		*04/25/19 12:11*	*1*

Lab Sample ID: LCS 480-469692/6
Matrix: Water
Analysis Batch: 469692

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl chloride			0.200	0.211		ug/L		105	50 - 150		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*89*		*50 - 150*
TBA-d9 (Surr)	*108*		*50 - 150*

Lab Sample ID: LCSD 480-469692/7
Matrix: Water
Analysis Batch: 469692

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl chloride			0.200	0.222		ug/L		111	50 - 150	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*89*		*50 - 150*
TBA-d9 (Surr)	*99*		*50 - 150*

Lab Sample ID: MB 480-470496/6
Matrix: Water
Analysis Batch: 470496

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/30/19 17:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*50 - 150*		*04/30/19 17:45*	*1*
TBA-d9 (Surr)	*80*		*50 - 150*		*04/30/19 17:45*	*1*

Lab Sample ID: LCS 480-470496/3
Matrix: Water
Analysis Batch: 470496

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl chloride			0.200	0.208		ug/L		104	50 - 150		

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

Lab Sample ID: LCS 480-470496/3
Matrix: Water
Analysis Batch: 470496

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

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*50 - 150*
TBA-d9 (Surr)	*92*		*50 - 150*

Lab Sample ID: LCSD 480-470496/4
Matrix: Water
Analysis Batch: 470496

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl chloride			0.200	0.215		ug/L		108	50 - 150	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*50 - 150*
TBA-d9 (Surr)	*108*		*50 - 150*

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 280-455867/1-A
Matrix: Water
Analysis Batch: 456062

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 455867

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		1.0		ug/L		04/25/19 08:00	04/25/19 20:24	1

Lab Sample ID: LCS 280-455867/2-A
Matrix: Water
Analysis Batch: 456062

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 455867

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Manganese			40.0	38.3		ug/L		96	85 - 117		

Lab Sample ID: 280-122820-1 MS
Matrix: Water
Analysis Batch: 456062

Client Sample ID: MW-7-041719
Prep Type: Dissolved
Prep Batch: 455867

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Manganese	ND	F1	40.0	38.9		ug/L		97	85 - 117		

Lab Sample ID: 280-122820-1 MSD
Matrix: Water
Analysis Batch: 456062

Client Sample ID: MW-7-041719
Prep Type: Dissolved
Prep Batch: 455867

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese	ND	F1	40.0	33.5	F1	ug/L		84	85 - 117	15	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-457300/6
Matrix: Water
Analysis Batch: 457300

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0		mg/L			05/07/19 14:03	1
Sulfate	ND		1.0		mg/L			05/07/19 14:03	1

Lab Sample ID: LCS 280-457300/4
Matrix: Water
Analysis Batch: 457300

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	99.0		mg/L		99	90 - 110
Sulfate	100	96.4		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-457300/5
Matrix: Water
Analysis Batch: 457300

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	99.1		mg/L		99	90 - 110	0	10
Sulfate	100	96.2		mg/L		96	90 - 110	0	10

Lab Sample ID: MRL 280-457300/3
Matrix: Water
Analysis Batch: 457300

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	ND		mg/L		95	50 - 150
Sulfate	2.50	ND		mg/L		86	50 - 150

Lab Sample ID: 280-122820-1 MS
Matrix: Water
Analysis Batch: 457300

Client Sample ID: MW-7-041719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		25.0	27.4		mg/L		110	80 - 120
Sulfate	2.8		25.0	28.3		mg/L		102	80 - 120

Lab Sample ID: 280-122820-1 MSD
Matrix: Water
Analysis Batch: 457300

Client Sample ID: MW-7-041719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND		25.0	27.9		mg/L		112	80 - 120	2	20
Sulfate	2.8		25.0	28.5		mg/L		103	80 - 120	1	20

Lab Sample ID: 280-122820-10 MS
Matrix: Water
Analysis Batch: 457300

Client Sample ID: MW-14-041719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	21		25.0	46.4		mg/L		103	80 - 120
Sulfate	14		25.0	39.0		mg/L		99	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 280-122820-10 MSD
Matrix: Water
Analysis Batch: 457300

Client Sample ID: MW-14-041719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	21		25.0	47.0		mg/L		106	80 - 120	1	20
Sulfate	14		25.0	39.5		mg/L		101	80 - 120	1	20

Lab Sample ID: 280-122820-1 DU
Matrix: Water
Analysis Batch: 457300

Client Sample ID: MW-7-041719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	ND		ND		mg/L		NC	15
Sulfate	2.8		2.48		mg/L		11	15

Lab Sample ID: 280-122820-10 DU
Matrix: Water
Analysis Batch: 457300

Client Sample ID: MW-14-041719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	21		20.5		mg/L		0.3	15
Sulfate	14		14.4		mg/L		1	15

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 280-456004/114
Matrix: Water
Analysis Batch: 456004

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	ND		0.030		mg/L			04/25/19 14:00	1

Lab Sample ID: LCS 280-456004/113
Matrix: Water
Analysis Batch: 456004

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia as N	2.50	2.54		mg/L		102	90 - 110

Lab Sample ID: LCS 280-456004/23
Matrix: Water
Analysis Batch: 456004

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia as N	2.50	2.59		mg/L		103	90 - 110

Lab Sample ID: LCSD 280-456004/25
Matrix: Water
Analysis Batch: 456004

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N	2.50	2.59		mg/L		103	90 - 110	2	10

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 280-122732-B-6 MS
Matrix: Water
Analysis Batch: 456004

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia as N	ND		1.00	1.06		mg/L		106	90 - 110		

Lab Sample ID: 280-122732-B-6 MSD
Matrix: Water
Analysis Batch: 456004

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N	ND		1.00	1.10		mg/L		110	90 - 110	3	10

Lab Sample ID: 280-122748-B-3 MS
Matrix: Water
Analysis Batch: 456004

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia as N	ND		1.00	1.06		mg/L		106	90 - 110		

Lab Sample ID: 280-122748-B-3 MSD
Matrix: Water
Analysis Batch: 456004

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N	ND		1.00	0.982		mg/L		98	90 - 110	8	10

Lab Sample ID: MB 280-456351/20
Matrix: Water
Analysis Batch: 456351

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	ND		0.030		mg/L			04/29/19 11:48	1

Lab Sample ID: LCS 280-456351/18
Matrix: Water
Analysis Batch: 456351

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia as N			2.50	2.43		mg/L		97	90 - 110		

Lab Sample ID: LCSD 280-456351/19
Matrix: Water
Analysis Batch: 456351

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N			2.50	2.55		mg/L		102	90 - 110	5	10

Lab Sample ID: 280-122612-A-29 MS
Matrix: Water
Analysis Batch: 456351

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia as N	ND		1.00	0.971		mg/L		97	90 - 110		

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: 280-122612-A-29 MSD
Matrix: Water
Analysis Batch: 456351

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N	ND		1.00	1.01		mg/L		101	90 - 110	4	10

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-455993/33
Matrix: Water
Analysis Batch: 455993

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		10		mg/L			04/24/19 19:28	1
Bicarbonate Alkalinity	ND		10		mg/L			04/24/19 19:28	1
Carbonate Alkalinity	ND		10		mg/L			04/24/19 19:28	1

Lab Sample ID: LCS 280-455993/31
Matrix: Water
Analysis Batch: 455993

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity			200	200		mg/L		100	89 - 109		

Lab Sample ID: LCSD 280-455993/32
Matrix: Water
Analysis Batch: 455993

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Alkalinity			200	201		mg/L		100	89 - 109	1	10

Lab Sample ID: 280-122756-A-1 DU
Matrix: Water
Analysis Batch: 455993

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Alkalinity	230			211		mg/L				8	10

Lab Sample ID: MB 280-456292/5
Matrix: Water
Analysis Batch: 456292

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		10		mg/L			04/26/19 13:31	1
Bicarbonate Alkalinity	ND		10		mg/L			04/26/19 13:31	1
Carbonate Alkalinity	ND		10		mg/L			04/26/19 13:31	1

Lab Sample ID: LCS 280-456292/4
Matrix: Water
Analysis Batch: 456292

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity			200	206		mg/L		103	89 - 109		

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 280-122820-1 DU
Matrix: Water
Analysis Batch: 456292

Client Sample ID: MW-7-041719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity	130		131		mg/L		0.06	10

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-455751/5
Matrix: Water
Analysis Batch: 455751

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Average	ND		1.0		mg/L			04/23/19 14:07	1

Lab Sample ID: LCS 280-455751/3
Matrix: Water
Analysis Batch: 455751

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Average	25.0	25.1		mg/L		100	88 - 112

Lab Sample ID: LCSD 280-455751/4
Matrix: Water
Analysis Batch: 455751

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Average	25.0	25.1		mg/L		100	88 - 112	0	15

Lab Sample ID: 280-122820-6 MS
Matrix: Water
Analysis Batch: 455751

Client Sample ID: SW-4-041719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Average	9.0		25.0	34.3		mg/L		101	88 - 112

Lab Sample ID: 280-122820-6 MSD
Matrix: Water
Analysis Batch: 455751

Client Sample ID: SW-4-041719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Average	9.0		25.0	34.3		mg/L		101	88 - 112	0	15

QC Association Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

GC/MS VOA

Analysis Batch: 469692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-1	MW-7-041719	Total/NA	Water	8260C SIM	
280-122820-2	MW-5-041719	Total/NA	Water	8260C SIM	
280-122820-3	SW-1-041719	Total/NA	Water	8260C SIM	
280-122820-4	MW-12I-041719	Total/NA	Water	8260C SIM	
280-122820-5	SW-6-041719	Total/NA	Water	8260C SIM	
280-122820-6	SW-4-041719	Total/NA	Water	8260C SIM	
280-122820-7	MW-13D-041719	Total/NA	Water	8260C SIM	
280-122820-8	SW-7-041719	Total/NA	Water	8260C SIM	
280-122820-9	MW-6-041719	Total/NA	Water	8260C SIM	
280-122820-10	MW-14-041719	Total/NA	Water	8260C SIM	
MB 480-469692/9	Method Blank	Total/NA	Water	8260C SIM	
LCS 480-469692/6	Lab Control Sample	Total/NA	Water	8260C SIM	
LCSD 480-469692/7	Lab Control Sample Dup	Total/NA	Water	8260C SIM	

Analysis Batch: 470496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-11	MW-20-DD-041719	Total/NA	Water	8260C SIM	
280-122820-12	TRIP BLANK	Total/NA	Water	8260C SIM	
MB 480-470496/6	Method Blank	Total/NA	Water	8260C SIM	
LCS 480-470496/3	Lab Control Sample	Total/NA	Water	8260C SIM	
LCSD 480-470496/4	Lab Control Sample Dup	Total/NA	Water	8260C SIM	

Metals

Prep Batch: 455867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-1	MW-7-041719	Dissolved	Water	3005A	
280-122820-2	MW-5-041719	Dissolved	Water	3005A	
280-122820-3	SW-1-041719	Dissolved	Water	3005A	
280-122820-4	MW-12I-041719	Dissolved	Water	3005A	
280-122820-5	SW-6-041719	Dissolved	Water	3005A	
280-122820-6	SW-4-041719	Dissolved	Water	3005A	
280-122820-7	MW-13D-041719	Dissolved	Water	3005A	
280-122820-8	SW-7-041719	Dissolved	Water	3005A	
280-122820-9	MW-6-041719	Dissolved	Water	3005A	
280-122820-10	MW-14-041719	Dissolved	Water	3005A	
280-122820-11	MW-20-DD-041719	Dissolved	Water	3005A	
MB 280-455867/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-455867/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-122820-1 MS	MW-7-041719	Dissolved	Water	3005A	
280-122820-1 MSD	MW-7-041719	Dissolved	Water	3005A	

Analysis Batch: 456062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-1	MW-7-041719	Dissolved	Water	6020	455867
280-122820-2	MW-5-041719	Dissolved	Water	6020	455867
280-122820-3	SW-1-041719	Dissolved	Water	6020	455867
280-122820-4	MW-12I-041719	Dissolved	Water	6020	455867
280-122820-5	SW-6-041719	Dissolved	Water	6020	455867
280-122820-6	SW-4-041719	Dissolved	Water	6020	455867
280-122820-7	MW-13D-041719	Dissolved	Water	6020	455867

Metals (Continued)

Analysis Batch: 456062 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-8	SW-7-041719	Dissolved	Water	6020	455867
280-122820-9	MW-6-041719	Dissolved	Water	6020	455867
280-122820-10	MW-14-041719	Dissolved	Water	6020	455867
280-122820-11	MW-20-DD-041719	Dissolved	Water	6020	455867
MB 280-455867/1-A	Method Blank	Total Recoverable	Water	6020	455867
LCS 280-455867/2-A	Lab Control Sample	Total Recoverable	Water	6020	455867
280-122820-1 MS	MW-7-041719	Dissolved	Water	6020	455867
280-122820-1 MSD	MW-7-041719	Dissolved	Water	6020	455867

General Chemistry

Analysis Batch: 455751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-1	MW-7-041719	Total/NA	Water	SM 5310B	
280-122820-2	MW-5-041719	Total/NA	Water	SM 5310B	
280-122820-3	SW-1-041719	Total/NA	Water	SM 5310B	
280-122820-4	MW-12I-041719	Total/NA	Water	SM 5310B	
280-122820-5	SW-6-041719	Total/NA	Water	SM 5310B	
280-122820-6	SW-4-041719	Total/NA	Water	SM 5310B	
280-122820-7	MW-13D-041719	Total/NA	Water	SM 5310B	
280-122820-8	SW-7-041719	Total/NA	Water	SM 5310B	
280-122820-9	MW-6-041719	Total/NA	Water	SM 5310B	
280-122820-10	MW-14-041719	Total/NA	Water	SM 5310B	
280-122820-11	MW-20-DD-041719	Total/NA	Water	SM 5310B	
MB 280-455751/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 280-455751/3	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 280-455751/4	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
280-122820-6 MS	SW-4-041719	Total/NA	Water	SM 5310B	
280-122820-6 MSD	SW-4-041719	Total/NA	Water	SM 5310B	

Analysis Batch: 455993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-2	MW-5-041719	Total/NA	Water	SM 2320B	
280-122820-3	SW-1-041719	Total/NA	Water	SM 2320B	
280-122820-4	MW-12I-041719	Total/NA	Water	SM 2320B	
280-122820-5	SW-6-041719	Total/NA	Water	SM 2320B	
280-122820-6	SW-4-041719	Total/NA	Water	SM 2320B	
280-122820-7	MW-13D-041719	Total/NA	Water	SM 2320B	
280-122820-8	SW-7-041719	Total/NA	Water	SM 2320B	
280-122820-9	MW-6-041719	Total/NA	Water	SM 2320B	
280-122820-10	MW-14-041719	Total/NA	Water	SM 2320B	
280-122820-11	MW-20-DD-041719	Total/NA	Water	SM 2320B	
MB 280-455993/33	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-455993/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-455993/32	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
280-122756-A-1 DU	Duplicate	Total/NA	Water	SM 2320B	

Analysis Batch: 456004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-1	MW-7-041719	Total/NA	Water	350.1	
280-122820-2	MW-5-041719	Total/NA	Water	350.1	

General Chemistry (Continued)

Analysis Batch: 456004 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-3	SW-1-041719	Total/NA	Water	350.1	
280-122820-4	MW-12I-041719	Total/NA	Water	350.1	
280-122820-5	SW-6-041719	Total/NA	Water	350.1	
280-122820-6	SW-4-041719	Total/NA	Water	350.1	
280-122820-7	MW-13D-041719	Total/NA	Water	350.1	
280-122820-8	SW-7-041719	Total/NA	Water	350.1	
280-122820-9	MW-6-041719	Total/NA	Water	350.1	
MB 280-456004/114	Method Blank	Total/NA	Water	350.1	
LCS 280-456004/113	Lab Control Sample	Total/NA	Water	350.1	
LCS 280-456004/23	Lab Control Sample	Total/NA	Water	350.1	
LCSD 280-456004/25	Lab Control Sample Dup	Total/NA	Water	350.1	
280-122732-B-6 MS	Matrix Spike	Total/NA	Water	350.1	
280-122732-B-6 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	
280-122748-B-3 MS	Matrix Spike	Total/NA	Water	350.1	
280-122748-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

Analysis Batch: 456292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-1	MW-7-041719	Total/NA	Water	SM 2320B	
MB 280-456292/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-456292/4	Lab Control Sample	Total/NA	Water	SM 2320B	
280-122820-1 DU	MW-7-041719	Total/NA	Water	SM 2320B	

Analysis Batch: 456351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-10	MW-14-041719	Total/NA	Water	350.1	
280-122820-11	MW-20-DD-041719	Total/NA	Water	350.1	
MB 280-456351/20	Method Blank	Total/NA	Water	350.1	
LCS 280-456351/18	Lab Control Sample	Total/NA	Water	350.1	
LCSD 280-456351/19	Lab Control Sample Dup	Total/NA	Water	350.1	
280-122612-A-29 MS	Matrix Spike	Total/NA	Water	350.1	
280-122612-A-29 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	

Analysis Batch: 457300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-1	MW-7-041719	Total/NA	Water	300.0	
280-122820-2	MW-5-041719	Total/NA	Water	300.0	
280-122820-3	SW-1-041719	Total/NA	Water	300.0	
280-122820-4	MW-12I-041719	Total/NA	Water	300.0	
280-122820-5	SW-6-041719	Total/NA	Water	300.0	
280-122820-6	SW-4-041719	Total/NA	Water	300.0	
280-122820-7	MW-13D-041719	Total/NA	Water	300.0	
280-122820-8	SW-7-041719	Total/NA	Water	300.0	
280-122820-9	MW-6-041719	Total/NA	Water	300.0	
280-122820-10	MW-14-041719	Total/NA	Water	300.0	
280-122820-11	MW-20-DD-041719	Total/NA	Water	300.0	
MB 280-457300/6	Method Blank	Total/NA	Water	300.0	
LCS 280-457300/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-457300/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-457300/3	Lab Control Sample	Total/NA	Water	300.0	
280-122820-1 MS	MW-7-041719	Total/NA	Water	300.0	

General Chemistry (Continued)

Analysis Batch: 457300 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-122820-1 MSD	MW-7-041719	Total/NA	Water	300.0	
280-122820-10 MS	MW-14-041719	Total/NA	Water	300.0	
280-122820-10 MSD	MW-14-041719	Total/NA	Water	300.0	
280-122820-1 DU	MW-7-041719	Total/NA	Water	300.0	
280-122820-10 DU	MW-14-041719	Total/NA	Water	300.0	

Lab Chronicle

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Client Sample ID: MW-7-041719
Date Collected: 04/17/19 09:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 12:44	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 20:32	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/07/19 22:39	TLP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	456004	04/25/19 14:20	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			456292	04/26/19 13:37	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 16:20	LPL	TAL DEN

Client Sample ID: MW-5-041719
Date Collected: 04/17/19 10:25
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 13:08	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 20:49	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/07/19 23:44	TLP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	456004	04/25/19 14:34	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 21:14	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 16:34	LPL	TAL DEN

Client Sample ID: SW-1-041719
Date Collected: 04/17/19 11:35
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 13:33	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 20:53	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/08/19 00:00	TLP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	456004	04/25/19 14:36	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 21:21	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 17:23	LPL	TAL DEN

Client Sample ID: MW-12I-041719
Date Collected: 04/17/19 12:00
Date Received: 04/19/19 08:55

Lab Sample ID: 280-122820-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 13:57	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 21:03	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/08/19 00:17	TLP	TAL DEN

Lab Chronicle

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Client Sample ID: MW-12I-041719

Lab Sample ID: 280-122820-4

Date Collected: 04/17/19 12:00
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	10 mL	10 mL	456004	04/25/19 14:44	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 20:15	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 17:37	LPL	TAL DEN

Client Sample ID: SW-6-041719

Lab Sample ID: 280-122820-5

Date Collected: 04/17/19 12:15
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 14:21	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 21:07	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/08/19 00:33	TLP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	456004	04/25/19 14:46	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 21:07	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 17:52	LPL	TAL DEN

Client Sample ID: SW-4-041719

Lab Sample ID: 280-122820-6

Date Collected: 04/17/19 12:50
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 14:45	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 21:10	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/08/19 00:50	TLP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	456004	04/25/19 14:48	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 20:45	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 18:09	LPL	TAL DEN

Client Sample ID: MW-13D-041719

Lab Sample ID: 280-122820-7

Date Collected: 04/17/19 13:10
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 15:10	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 21:14	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/08/19 01:06	TLP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	456004	04/25/19 14:50	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 20:22	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 18:55	LPL	TAL DEN

Client Sample ID: SW-7-041719
Lab Sample ID: 280-122820-8

Date Collected: 04/17/19 14:30
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 15:35	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 21:17	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/08/19 01:55	TLP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	456004	04/25/19 14:52	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 20:08	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 19:10	LPL	TAL DEN

Client Sample ID: MW-6-041719
Lab Sample ID: 280-122820-9

Date Collected: 04/17/19 15:45
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 15:59	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 21:21	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/08/19 02:12	TLP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	456004	04/25/19 15:06	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 20:36	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 19:25	LPL	TAL DEN

Client Sample ID: MW-14-041719
Lab Sample ID: 280-122820-10

Date Collected: 04/17/19 15:00
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	469692	04/25/19 16:23	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 21:24	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/08/19 02:28	TLP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	456351	04/29/19 12:22	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 20:29	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 15:50	LPL	TAL DEN

Client Sample ID: MW-20-DD-041719
Lab Sample ID: 280-122820-11

Date Collected: 04/17/19 00:00
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	470496	04/30/19 18:09	RJF	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	455867	04/25/19 08:00	CRR	TAL DEN
Dissolved	Analysis	6020		1			456062	04/25/19 21:28	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	457300	05/08/19 03:34	TLP	TAL DEN

Lab Chronicle

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Client Sample ID: MW-20-DD-041719

Lab Sample ID: 280-122820-11

Date Collected: 04/17/19 00:00
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	10 mL	10 mL	456351	04/29/19 12:24	MJS	TAL DEN
Total/NA	Analysis	SM 2320B		1			455993	04/24/19 21:28	SGB	TAL DEN
Total/NA	Analysis	SM 5310B		1			455751	04/23/19 16:05	LPL	TAL DEN

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-122820-12

Date Collected: 04/17/19 00:00
Matrix: Water
Date Received: 04/19/19 08:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	470496	04/30/19 18:33	RJF	TAL BUF

Laboratory References:

SC0056 = Analytical Resources, Inc, 4611 South 134th Place, Suite 100, Tukwila, WA 98168, TEL (206)695-6200
TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Aspect Consulting
Project/Site: Hansville Landfill

Job ID: 280-122820-1

Laboratory: Eurofins TestAmerica, Denver

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C583	08-03-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020	3005A	Water	Manganese
SM 2320B		Water	Bicarbonate Alkalinity
SM 2320B		Water	Carbonate Alkalinity
SM 5310B		Water	Total Organic Carbon - Average

Laboratory: Eurofins TestAmerica, Buffalo

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-19 *
California	State Program	9	2931	04-01-19 *
Connecticut	State Program	1	PH-0568	09-30-20
Florida	NELAP	4	E87672	06-30-19 *
Georgia	State Program	4	10026 (NY)	03-31-20
Georgia	State Program	4	956	03-31-20
Illinois	NELAP	5	200003	09-30-19
Iowa	State Program	7	374	02-28-21
Kansas	NELAP	7	E-10187	01-31-20
Kentucky (DW)	State Program	4	90029	12-31-19
Kentucky (WW)	State Program	4	90029	12-31-19
Louisiana	NELAP	6	02031	06-30-19 *
Maryland	State Program	3	294	03-31-20
Massachusetts	State Program	1	M-NY044	06-30-19
Michigan	State Program	5	9937	03-31-20
Minnesota	NELAP	5	036-999-337	12-31-19
New Hampshire	NELAP	1	2337	11-17-19
New Jersey	NELAP	2	NY455	06-30-19 *
New York	NELAP	2	10026	03-31-20
North Dakota	State Program	8	R-176	03-31-19 *
Oklahoma	State Program	6	9421	08-31-19
Oregon	NELAP	10	NY200003	06-09-19 *
Pennsylvania	NELAP	3	68-00281	07-31-19 *
Rhode Island	State Program	1	LAO00328	12-30-19
Tennessee	State Program	4	TN02970	03-31-20
Texas	NELAP	6	T104704412-15-6	07-31-19 *
USDA	Federal		P330-11-00386	02-06-21
Virginia	NELAP	3	460185	09-14-19
Washington	State Program	10	C784	02-10-20
Wisconsin	State Program	5	998310390	08-31-19

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

02 May 2019

Betsy Sara
Test America - Denver
4955 Yarrow Street
Arvada, CO 80002

RE: Hansville

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
19D0262	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

19D0262

Denver #280

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: JACKSON LUNDGREN	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-23414-6845.1
Client Contact: PETER BANNISTER	Phone: 415 286 6876	E-Mail: betsy.sara@testamericainc.com		Page:
Company: Aspect Consulting, LLC				Job #:
Address: 350 Madison Ave N	Due Date Requested:			
City: Bainbridge Island	TAT Requested (days):			
State, Zip: WA, 98110				
Phone:	PO #: Purchase Order not required			
Email: Pbannister@aspectconsulting.com	WO #:			
Project Name: Hansville Landfill	Project #:skip sites/events 28006013 - 2Q/3Q/4Q Sampling			
Site: Washington	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C SIM - Vinyl Chloride (TA Buffalo)	Dissolved Metals	Ammonia/TOC	Alks/Cl/SO4	Ortho-phosphate (field filtered)- direct sub to ARI	Dissolved Arsenice - direct sub to ARI	Nitrate/Nitrite (IC) - direct sub to ARI	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	D	S	N	N	D	N		
MW-7-041719	041719	0900		W	Y						X	X	X		* Field filtered
MW-5-041719		1025									X	X	X		
SW-1-041719		1135									X	X	X		Diss As,NO3,NO2,o-phos subbed direct to ARI
MW-12I-041719		1200									X	X	X		Temp blank leaked
SW-6-041719		1215									X	X	X		before cooler opened
SW-4-041719		1250									X	X	X		
MW-13D-041719		1310									X	X	X		
SW-7-041719		1430									X	X	X		
MW-6-041719		1545									X	X	X		
MW-14-041719		1550									X	X	X		
MW-20-DD-041719		—									X	X	X		

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: 2.1°C

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		4/18/19 1114	Aspect	Jacob Walter	4/18/19 1119	ARI
2						
3						

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

Cooler Temperature(s) °C and Other Remarks:

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-7-041719	19D0262-01	Water	17-Apr-2019 09:00	18-Apr-2019 11:19
MW-5-041719	19D0262-02	Water	17-Apr-2019 10:25	18-Apr-2019 11:19
SW-1-041719	19D0262-03	Water	17-Apr-2019 11:35	18-Apr-2019 11:19
MW-12I-041719	19D0262-04	Water	17-Apr-2019 12:00	18-Apr-2019 11:19
SW-6-041719	19D0262-05	Water	17-Apr-2019 12:15	18-Apr-2019 11:19
SW-4-041719	19D0262-06	Water	17-Apr-2019 12:50	18-Apr-2019 11:19
MW-13D-041719	19D0262-07	Water	17-Apr-2019 13:10	18-Apr-2019 11:19
SW-7-041719	19D0262-08	Water	17-Apr-2019 14:30	18-Apr-2019 11:19
MW-6-041719	19D0262-09	Water	17-Apr-2019 15:45	18-Apr-2019 11:19
MW-14-041719	19D0262-10	Water	17-Apr-2019 15:50	18-Apr-2019 11:19
MW-20-DD-041719	19D0262-11	Water	17-Apr-2019 00:00	18-Apr-2019 11:19

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

Work Order Case Narrative

Sample receipt

Samples as listed on the preceding page were received April 18, 2019 under ARI work order 19D0262. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Dissolved Arsenic - EPA Method 200.8

The samples were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank was clean at the reporting limits.

The LCS percent recoveries were within control limits.

Anions - EPA Method 300.0

The samples were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blanks were clean at the reporting limits.

The LCS percent recoveries were within control limits.

A matrix spike and duplicate were prepared in conjunction with sample MW-7-041719. The matrix spike percent recoveries and duplicate RPD were within QC limits.

WORK ORDER

19D0262

Client: Test America - Denver	**Project Manager:** Amanda Volgardsen
Project: Hansville	**Project Number:** [none]

Preservation Confirmation

Container ID	Container Type	pH	
19D0262-01 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-01 B	Miscellaneous Container		
19D0262-01 C	Miscellaneous Container (FF)		
19D0262-02 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-02 B	Miscellaneous Container		
19D0262-02 C	Miscellaneous Container (FF)		
19D0262-03 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-03 B	Miscellaneous Container		
19D0262-03 C	Miscellaneous Container (FF)		
19D0262-04 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-04 B	Miscellaneous Container		
19D0262-04 C	Miscellaneous Container (FF)		
19D0262-05 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-05 B	Miscellaneous Container		
19D0262-05 C	Miscellaneous Container (FF)		
19D0262-06 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-06 B	Miscellaneous Container		
19D0262-06 C	Miscellaneous Container (FF)		
19D0262-07 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-07 B	Miscellaneous Container		
19D0262-07 C	Miscellaneous Container (FF)		
19D0262-08 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-08 B	Miscellaneous Container		
19D0262-08 C	Miscellaneous Container (FF)		
19D0262-09 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-09 B	Miscellaneous Container		
19D0262-09 C	Miscellaneous Container (FF)		
19D0262-10 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-10 B	Miscellaneous Container		
19D0262-10 C	Miscellaneous Container (FF)		
19D0262-11 A	Miscellaneous container, 1:1 HN03 (FF)	<2	Pass
19D0262-11 B	Miscellaneous Container		
19D0262-11 C	Miscellaneous Container (FF)		

Reviewed By

Date

WORK ORDER

19D0262

Client: Test America - Denver	**Project Manager: Amanda Volgardsen**
Project: Hansville	**Project Number: [none]**

JDu
Preservation Confirmed By

04/18/19
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Aspect Test America Denver Project Name: Hansville Landfill

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 19D0262 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	(YES)	NO
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1119 2.3°C

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00232O6

Cooler Accepted by: JSW Date: 04/18/19 Time: 1119

Complete custody forms and attach all shipping documents

Log-In Phase:

JSW

Was a temperature blank included in the cooler?		(YES)	(NO)
What kind of packing material was used? … Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)…	NA	(YES)	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI…	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JSW Date: 04/18/19 Time: 1202 Labels checked by: JSW

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-7-041719

19D0262-01 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 09:00

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 18:01

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-01 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00118**	mg/L	

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-7-041719

19D0262-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 09:00

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 17:11

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-01 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	**0.324**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-5-041719

19D0262-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 10:25

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 18:06

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-02 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00203**	mg/L	

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-5-041719

19D0262-02 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 10:25

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 18:02

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-02 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	**2.03**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

SW-1-041719

19D0262-03 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 11:35

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 18:10

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-03 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00164**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

SW-1-041719

19D0262-03 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 11:35

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 18:18

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-03 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	**1.71**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-12I-041719

19D0262-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 12:00

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 18:51

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-04 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00215**	mg/L	

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-12I-041719

19D0262-04 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 12:00

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 18:35

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-04 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

SW-6-041719

19D0262-05 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 12:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 18:55

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-05 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00348**	mg/L	

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

SW-6-041719

19D0262-05 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 12:15

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 18:52

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-05 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	**0.135**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

SW-4-041719

19D0262-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 12:50

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 19:00

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-06 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00215**	mg/L	

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

SW-4-041719

19D0262-06 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 12:50

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 19:42

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-06 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	**0.804**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-13D-041719

19D0262-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 13:10

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 19:04

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-07 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00513**	mg/L	

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-13D-041719

19D0262-07 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 13:10

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 19:59

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-07 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

SW-7-041719

19D0262-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 14:30

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 19:09

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-08 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00126**	mg/L	

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

SW-7-041719

19D0262-08 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 14:30

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 20:16

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-08 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	**0.973**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-6-041719

19D0262-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 15:45

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 19:14

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-09 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00176**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-6-041719

19D0262-09 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 15:45

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 20:33

Sample Preparation: Preparation Method: No Prep Wet Chem; Preparation Batch: BHD0515; Prepared: 18-Apr-2019; Sample Size: 5 mL; Final Volume: 5 mL — Extract ID: 19D0262-09 C

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	**0.696**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	**0.176**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-14-041719

19D0262-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 15:50

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 19:18

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-10 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.0121**	mg/L	

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-14-041719

19D0262-10 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 15:50

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 20:50

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-10 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	**0.548**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-20-DD-041719

19D0262-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 04/17/2019 00:00

Instrument: ICPMS2 Analyst: MCB — Analyzed: 04/23/2019 19:23

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 19D0262-11 A 01

Preparation Batch: BHD0605 — Sample Size: 25 mL

Prepared: 23-Apr-2019 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.0120**	mg/L	

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

MW-20-DD-041719

19D0262-11 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 04/17/2019 00:00

Instrument: DX500 Analyst: KOTT — Analyzed: 04/18/2019 21:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 19D0262-11 C

Preparation Batch: BHD0515 — Sample Size: 5 mL

Prepared: 18-Apr-2019 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	**0.541**	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	0.10	ND	mg/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BHD0605 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHD0605-BLK1)				Prepared: 23-Apr-2019 Analyzed: 23-Apr-2019 17:52							
Arsenic, Dissolved	75a	ND	0.000200	mg/L							U
LCS (BHD0605-BS1)				Prepared: 23-Apr-2019 Analyzed: 23-Apr-2019 17:56							
Arsenic, Dissolved	75a	0.0249	0.000200	mg/L	0.0250		99.5	80-120			

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

Wet Chemistry - Quality Control

Batch BHD0515 - No Prep Wet Chem

Instrument: DX500 Analyst: KOTT

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHD0515-BLK1)				Prepared: 18-Apr-2019 Analyzed: 18-Apr-2019 16:38							
Nitrate-N	ND	0.100	0.100	mg/L							U
Nitrite-N	ND	0.100	0.100	mg/L							U
Orthophosphorus	ND	0.10	0.10	mg/L							U
LCS (BHD0515-BS1)				Prepared: 18-Apr-2019 Analyzed: 18-Apr-2019 16:21							
Nitrate-N	1.40	0.100	0.100	mg/L	1.50		93.2	90-110			
Nitrite-N	1.54	0.100	0.100	mg/L	1.50		103	90-110			
Orthophosphorus	1.42	0.10	0.10	mg/L	1.50		94.9	90-110			
Duplicate (BHD0515-DUP1)		**Source: 19D0262-01**		Prepared: 18-Apr-2019 Analyzed: 18-Apr-2019 17:28							
Nitrate-N	0.322	0.100	0.100	mg/L		0.324			0.62	20	
Nitrite-N	ND	0.100	0.100	mg/L		ND					U
Orthophosphorus	ND	0.10	0.10	mg/L		ND					U
Matrix Spike (BHD0515-MS1)		**Source: 19D0262-01**		Prepared: 18-Apr-2019 Analyzed: 18-Apr-2019 17:45							
Nitrate-N	2.36	0.100	0.100	mg/L	2.00	0.324	102	75-125			
Nitrite-N	2.03	0.100	0.100	mg/L	2.00	ND	101	75-125			
Orthophosphorus	1.93	0.10	0.10	mg/L	2.00	ND	96.3	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Nitrate-N	DoD-ELAP,WADOE,WA-DW,NELAP
Nitrite-N	DoD-ELAP,WADOE,WA-DW,NELAP
Orthophosphorus	DoD-ELAP,WADOE,WA-DW,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-011	05/12/2019
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013-2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	02-May-2019 14:39

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Denver #280

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: JACKSON LUNDGREN	Lab PM: Sara, Betsy A	Carrier Tracking No(s):
Client Contact: P. BANNISTER	Phone: 415 2866876	E-Mail: betsy.sara@testamericainc.com	COC No: 280-23414-6845.1
Company: Aspect Consulting, LLC			Page:
Address: 350 Madison Ave N	Due Date Requested:		Job #:
City: Bainbridge Island	TAT Requested (days):		
State, Zip: WA, 98110			
Phone:	PO #: Purchase Order not required		
Email: pbannister@aspectconsulting.com	WO #:		
Project Name: Hansville Landfill	Project #:skip sites/events 28006013 - 2Q/3Q/4Q Sampling		
Site: Washington	SSOW#:		

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C SIM - Vinyl Chloride (TA Buffalo)	Dissolved Metals	Ammonia/TOC	Alks/Cl/SO4	Ortho-phosphate (field filtered)- direct sub to ARI	Dissolved Arsenice - direct sub to ARI	Nitrate/Nitrite (IC) - direct sub to ARI	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	D	S	N	N	D	N		
MW-7-041719	41719	0900		W	N		X	X	X	X					
MW-5-041719		1025					X	X	X	X					
SW-1-041719		1135					X	X	X	X					Diss As,NO3,NO2,o-phos subbed direct to ARI
MW-12I-041719		1200					X	X	X	X					
SW-6-041719		1215					X	X	X	X					
SW-4-041719		1250					X	X	X	X					
MW-13D-041719		1310					X	X	X	X					
SW-7-041719		1430					X	X	X	X					
MW-6-041719		1545					X	X	X	X					
MW-14-041719		1550					X	X	X	X					
MW-20-DD-041719							X	X	X	X					

280-122820 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 4/18/19 1050	Company: Aspect	Received by:	Date/Time: 4/19/19 0855	Company: TAOEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0.4, 3.6, 0.8, tq IR#9b, AP 4/19/19		

5/10/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-480319.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 280-122820-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 5/1/2019			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: Hansville Landfill	Project #: 28006013			
Site: Hansville	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C_SIM/5030C (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X		X	
MW-7-041719 (280-122820-1)	4/17/19	09:00 Pacific		Water			X	3	
MW-5-041719 (280-122820-2)	4/17/19	10:25 Pacific		Water			X	3	
SW-1-041719 (280-122820-3)	4/17/19	11:35 Pacific		Water			X	3	
MW-12I-041719 (280-122820-4)	4/17/19	12:00 Pacific		Water			X	3	
SW-6-041719 (280-122820-5)	4/17/19	12:15 Pacific		Water			X	3	
SW-4-041719 (280-122820-6)	4/17/19	12:50 Pacific		Water			X	3	
MW-13D-041719 (280-122820-7)	4/17/19	13:10 Pacific		Water			X	3	
SW-7-041719 (280-122820-8)	4/17/19	14:30 Pacific		Water			X	3	
MW-6-041719 (280-122820-9)	4/17/19	15:45 Pacific		Water			X	3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Raina Castro	4-23-19 1315	TAL Pen		4/24/19 0930	TAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:	4.0 C

Ver: 01/16/2019

Eurofins TestAmerica, Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-480319.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 280-122820-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 5/1/2019			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: *Hansville Landfill*	Project #: 28006013			
Site: Hansville	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C_SIM/5030C (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-14-041719 (280-122820-10)	4/17/19	15:00 Pacific		Water			X	3	
MW-20-DD-041719 (280-122820-11)	4/17/19	Pacific		Water			X	2	
TRIP BLANK (280-122820-12)	4/17/19	Pacific		Water			X	3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Diana Castro	4-23-19 1315	TAL		4/24/19 0930	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: #1 4.0°

Ver: 01/16/2019

5/10/2019

Login Sample Receipt Checklist

Client: Aspect Consulting

Job Number: 280-122820-1

Login Number: 122820
List Number: 1
Creator: Sutek, Nick

List Source: Eurofins TestAmerica, Denver

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is 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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Aspect Consulting

Job Number: 280-122820-1

Login Number: 122820
List Number: 2
Creator: Hulbert, Michael J

List Source: Eurofins TestAmerica, Buffalo
List Creation: 04/24/19 04:33 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is 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	4.0 #1
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 sample IDs on the containers 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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Aspect CONSULTING

Sample number MW-7-041719

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-7 Page: 1 of 1

Project Name: Hansville Landfill
Project Number: 160423
Date: 4/17/2019
Sampled by: DWV/JTL
Starting Water Level (ft TOC): 83.68
Casing Stickup (ft):
Measuring Point of Well: TOC
Total Depth (ft TOC):
Screened Interval (ft. TOC)
Casing Diameter (inches):
Filter Pack Interval (ft. TOC)

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf
Sample Intake Depth (ft TOC): Mid Screen

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
8:31		0.1	83.68	9.4	297.9	10.75	6.93	68.6	0.91	Start
8:36		↓	83.69	9.5	245.1	3.21	6.15	44.0	0.88	
8:41			83.71	9.5	238.9	1.24	6.18	31.0	1.56	
8:46			83.69	9.4	237.5	1.11	6.26	23.0	1.10	
8:51			83.70	9.4	236.5	1.07	6.30	17.4	0.66	
8:56		↓	83.69	9.5	236.3	1.09	6.34	14.2	0.67	

Total Gallons Purged: 1.0
Total Casing Volumes Removed:
Ending Water Level (ft TOC): 83.69
Ending Total Depth (ft TOC):

SAMPLE INVENTORY

Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
0900	500	amber	1	-	sulf	CLEAR	NONE	
↓	1000	poly	1	-	-	↓		
	500	poly	1	-	-			
	40	VOA	3	-	HCl			
	500	poly	2	yes	nitric			
	250	poly	1	yes	-			

METHODS

Parameters measured with (instrument model & serial number) YSI Pro Plus Org; Turb - Org; WL - Water Light
Purging Equipment: Dedicatd Bladder or Peristaltic
Decon Equipment: Alconox + water
Disposal of Discharged Water: on site

Observations/Comments:

Aspect CONSULTING

Sample number MW-5-041719

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-5 Page: 1 of ___

Project Name: Hansville Landfill
Project Number: 160423
Date: 4/17/2019
Sampled by: JTL/DLW
Starting Water Level (ft TOC): 98.82
Casing Stickup (ft):
Measuring Point of Well: TOC
Total Depth (ft TOC):
Screened Interval (ft. TOC)
Casing Diameter (inches):
Filter Pack Interval (ft. TOC)

Casing Volume ____ (ft Water) x ____ (Lpfv)(gpf) = ____ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf
Sample Intake Depth (ft TOC): midscreen

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
0951	0	0.2	98.82							Start - Clear
0956		0.1	98.82	9.9	151.7	7.12	6.52	30.0	0.57	
09001			98.82	10.1	151.3	7.88	6.78	28.4	0.74	
1006	0.5		98.82	10.1	151.1	8.71	7.00	23.4	0.25	
1011			98.82	10.1	151.4	8.67	7.14	21.8	0.52	
1016			98.82	10.1	152.0	9.05	7.21	21.5	0.25	
1021			98.82	10.1	152.3	9.08	7.23	22.0	0.56	sample

Total Gallons Purged: 1.0
Total Casing Volumes Removed:
Ending Water Level (ft TOC):
Ending Total Depth (ft TOC):

SAMPLE INVENTORY

Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appearance		Remarks
						Color	Turbidity & Sediment	
1025	500	amber	1	-	sulf	clear	1.85	
↓	1000	poly	1	-	-	↓		
	500	poly	1	-	-			
	40	VOA	3	-	HCl			
	500	poly	2	yes	nitric			
↓	250	poly	1	yes	-	↓		

METHODS

Parameters measured with (instrument model & serial number) YSI Pro Plus - org ; Turbidimeter - org - WLI-bb/ubt
Purging Equipment: Dedicatd Bladder or Peristaltic
Decon Equipment: Alconox + water
Disposal of Discharged Water: on site
Observations/Comments:

Aspect CONSULTING

Sample number SW-1-041719

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-1 Page:___ of ___

Project Name: Hansville Landfill
Date: 4/17/2019
Sampled by: JTL
Measuring Point of Well: TOC
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Project Number: 160423
Starting Water Level (ft TOC):
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume ____ (ft Water) x ____ (Lpfv)(gpf) = ____ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC):____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1135	—	—	—	9.7	170.6	9.80	6.95	117.8	25.9	Start

Total Gallons Purged:____ Total Casing Volumes Removed:____

Ending Water Level (ft TOC):____ Ending Total Depth (ft TOC):____

SAMPLE INVENTORY

Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appearance		Remarks
						Color	Turbidity & Sediment	
1135	500	amber	1	-	sulf	CLEAR	NONE	- TRACE BROWN FLOATIES
	1000	poly	1	-	-			
	500	poly	1	-	-			
	40	VOA	3	-	HCl			
	500	poly	2	yes	nitric			
	250	poly	1	yes	-			

METHODS

Parameters measured with (instrument model & serial number) YSI Pro Plus (RED)
Purging Equipment: Dedicatd Bladder or Peristaltic Decon Equipment: Alconox + water
Disposal of Discharged Water: on site
Observations/Comments:

Aspect CONSULTING

Sample number: MW-12I-041714

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-12I Page: 1 of 1

Project Name: Hansville Landfill
Date: 4/17/2019
Sampled by: DWD
Measuring Point of Well: TOC
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Project Number: 160423
Starting Water Level (ft TOC): 9.58
Casing Stickup (ft): ✓
Total Depth (ft TOC): ✓
Casing Diameter (inches): 2"

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): midscreen

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1134	0	0.2	9.58							Start, clear
1139			9.58	9.7	155.4	1.13	7.21	23.1	0.79	
1144			9.58	9.8	154.2	0.1104	7.20	16.4	0.53	
1149	1.0		9.58	9.8	158.0	0.97	7.18	12.3	0.41	
1154			9.60	9.8	158.2	0.80	7.15	9.5	0.47	
1159			9.60	9.8	158.4	0.73	7.14	6.8	0.44	Sample

Total Gallons Purged: Total Casing Volumes Removed:

Ending Water Level (ft TOC): Ending Total Depth (ft TOC):

SAMPLE INVENTORY

Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1200	500	amber	1	-	sulf	Clear	0.63	
↓	1000	poly	1	-	-	↓	↓	
	500	poly	1	-	-			
	40	VOA	3	-	HCl			
	500	poly	2	yes	nitric			
↓	250	poly	1	yes	-			

METHODS

Parameters measured with (instrument model & serial number) YSI Pro Plus - ORP; Turbidimeter - Org; WLI - blu/wht

Purging Equipment: Dedicated Bladder or Peristaltic Decon Equipment: Alconox + water

Disposal of Discharged Water: on site

Observations/Comments:

Aspect CONSULTING

Sample number SW-6-041719

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-6 Page:___ of ___

Project Name: Hansville Landfill
Date: 4/17/2019
Sampled by: JTL
Measuring Point of Well: TOC
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Project Number: 160423
Starting Water Level (ft TOC): —
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume ___ (ft Water) x ___ (Lpfv)(gpf) = ___ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC):

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1215	—	—	—	10.1	113.1	8.89	7.25	87.6	24.5	Start

Total Gallons Purged:
Total Casing Volumes Removed:
Ending Water Level (ft TOC):
Ending Total Depth (ft TOC):

SAMPLE INVENTORY

Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appearance		Remarks
						Color	Turbidity & Sediment	
1215	500	amber	1	-	sulf	BROWN	YES	BROWN FLOATIES
	1000	poly	1	-	-			
	500	poly	1	-	-			
	40	VOA	3	-	HCl			
	500	poly	2	yes	nitric			
	250	poly	1	yes	-			

METHODS

Parameters measured with (instrument model & serial number) YSI Pro Plus (RED)
Purging Equipment: Dedicatd Bladder or Peristaltic Decon Equipment: Alconox + water
Disposal of Discharged Water: on site
Observations/Comments:

Aspect CONSULTING

Sample number SW-4-041719

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-4 Page:___ of ___

Project Name: Hansville Landfill
Project Number: 160423
Date: 4/17/2019
Sampled by: JTL
Measuring Point of Well: TOC
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)
Starting Water Level (ft TOC):
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf
Sample Intake Depth (ft TOC):

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1250	—	—	—	10.1	113.1	8.89	7.20	87.6	9.71	Start

Total Gallons Purged:
Total Casing Volumes Removed:
Ending Water Level (ft TOC):
Ending Total Depth (ft TOC):

SAMPLE INVENTORY

Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appearance		Remarks
						Color	Turbidity & Sediment	
1250	500	amber	1	-	sulf	BRN	LOW	- BROWN
	1000	poly	1	-	-			FLOATIES
	500	poly	1	-	-			
	40	VOA	3	-	HCl			
	500	poly	2	yes	nitric			
	250	poly	1	yes	-			

METHODS

Parameters measured with (instrument model & serial number) YSI Pro Plus (RED)
Purging Equipment: Dedicatd Bladder or Peristaltic Decon Equipment: Alconox + water
Disposal of Discharged Water: on site
Observations/Comments:

Aspect CONSULTING

Sample number MW-13D-041719

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-13D Page: 1 of 1

Project Name: Hamsotte Q2 GW monitoring
Project Number: 160423
Date: 4/17/19
Sampled by: DWW
Measuring Point of Well: N TOC
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Starting Water Level (ft TOC): 10.59
Casing Stickup (ft): -
Total Depth (ft TOC): /
Casing Diameter (inches): 2"

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): mid screen

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1243	0	0.2	10.58							Clear
1248			10.81	10.3	182.7	1.33	7.61	20.0	0.75	
1253			10.79	10.3	182.7	1.10	7.55	19.4	0.67	
1258	1.0		10.78	10.4	182.8	0.91	7.57	14.0	0.68	
1303			10.78	10.3	182.9	0.77	7.54	9.4	0.52	
1308			10.78	10.4	182.9	0.73	7.51	6.5	0.68	

Total Gallons Purged: 1.5
Total Casing Volumes Removed: _____
Ending Water Level (ft TOC): 10.78
Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume (mL)	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1310	40	VOA	3	N	HCl	Clear	0.91	
	1000	Poly	1		N			
	500	Poly	1		N			
	500	Amber	1		H_2SO_4			
	500	Poly	2	Y	HNO_3			
	250	Poly	1		N			

METHODS

Parameters measured with (instrument model & serial number): YSI - org; Turbidometer - Org; WLI - Blu/wht
Purging Equipment: Dedicated bladder Pump Decon Equipment: Alconox + water
Disposal of Discharged Water: onsite.
Observations/Comments:

Aspect CONSULTING

Sample number SW-7-41719

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-7 Page:___ of ___

Project Name: Hansville Landfill
Date: 4/17/2019
Sampled by: JTL/DWC
Measuring Point of Well: TOC
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Project Number: 160423
Starting Water Level (ft TOC): ~
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume ____ (ft Water) x ____ (Lpfv)(gpf) = ____ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC):

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1430	—	—	—	9.6	130.1	10.37	7.65	101.5	3.24	Start

Total Gallons Purged:
Total Casing Volumes Removed:
Ending Water Level (ft TOC):
Ending Total Depth (ft TOC):

SAMPLE INVENTORY

Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appearance		Remarks
						Color	Turbidity & Sediment	
1430	500	amber	1	-	sulf	CLR	NONE	- BROWN FLOATIES
	1000	poly	1	-	-			
	500	poly	1	-	-			
	40	VOA	3	-	HCl			
	500	poly	2	yes	nitric			
	250	poly	1	yes	-			

METHODS

Parameters measured with (instrument model & serial number) YSI Pro Plus RED
Purging Equipment: Dedicatd Bladder or Peristaltic Decon Equipment: Alconox + water
Disposal of Discharged Water: on site
Observations/Comments:

Aspect CONSULTING

Sample number MW-6-041719

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-6 Page:___ of ___

Project Name: Hansville Landfill
Project Number: 160423
Date: 4/17/2019
Sampled by: JTL
Measuring Point of Well: TOC
Starting Water Level (ft TOC): 73.12
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Casing Volume ___ (ft Water) x ___ (Lpfv)(gpf) = ___ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf
Sample Intake Depth (ft TOC):

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1518		0.2	73.12	12.5	320.5	5.70	7.46	112.7	11.2	Start
1523		0.2	73.11	12.8	329.5	0.56	7.07	115.1	5.83	
1528			73.12	12.8	327.6	0.21	7.07	115.2	4.46	
1533			73.15	12.8	331.6	0.19	7.06	115.6	3.87	
1538			73.15	12.8	332.9	0.16	7.05	115.7	3.89	

Total Gallons Purged: ~1.5
Total Casing Volumes Removed:
Ending Water Level (ft TOC): 73.15
Ending Total Depth (ft TOC):

SAMPLE INVENTORY

Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appearance		Remarks
						Color	Turbidity & Sediment	
1545	500	amber	1	-	sulf	CLR	NONE	
	1000	poly	1	-	-			
	500	poly	1	-	-			
	40	VOA	3	-	HCl			
	500	poly	2	yes	nitric			
	250	poly	1	yes	-			

METHODS

Parameters measured with (instrument model & serial number) YSI Pro Plus RED
Purging Equipment: Dedicatd Bladder or Peristaltic
Decon Equipment: Alconox + water
Disposal of Discharged Water: on site
Observations/Comments:

Aspect CONSULTING

Sample number: MW-14-041719 / MW-20DD-041719

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-14 Page: 1 of 1

Project Name: Hansville Landfill
Date: 4/17/2019
Sampled by: DWO
Measuring Point of Well: TOC
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Project Number: 160423
Starting Water Level (ft TOC): 81.76
Casing Stickup (ft): /
Total Depth (ft TOC): /
Casing Diameter (inches): 2"

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 3/4"= 0.02 gpf 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
3/4"= 0.09 Lpf 2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): midscreen

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Comments
1522	0	0-2	81.74							Start, clear
1527			81.76	11.5	278.1	3.13	7.07	46.2	2.54	
1532			81.76	11.5	327.3	1.71	7.03	43.3	0.86	
1537			81.76	11.5	338.0	1.58	7.03	40.4	0.81	
1542			81.78	11.5	336.6	1.54	7.04	38.2	0.88	
1547			81.78	11.4	330.5	1.46	7.05	35.4	0.86	

Total Gallons Purged: 1.25
Total Casing Volumes Removed: _____
Ending Water Level (ft TOC): 81.78
Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appearance: Color	Appearance: Turbidity & Sediment	Remarks
1550	500	amber	2	-	sulf	Clear	0.72	
	1000	poly	2	-	-			
	500	poly	2	-	-			
	40	VOA	6	-	HCl			
	500	poly	4	yes	nitric			
	250	poly	2	yes	-			

METHODS

Parameters measured with (instrument model & serial number) YSI Pro Plus - Orp; Turbidimeter - Orp; WLI - Oblg/Light
Purging Equipment: Dedicatd Bladder or Peristaltic
Decon Equipment: Alconox + water
Disposal of Discharged Water: on site
Observations/Comments: