

August 28, 2020

Alexis McKinnon Solid Waste Specialist Kitsap County Public Works Solid Waste Division 614 Division Street, MS-27 Port Orchard, WA 98366

Re: Second Quarter 2020 Environmental Monitoring Report, Hansville Landfill, Kitsap County, Washington

Project No. 160423-004-05.1

Dear Alexis:

This quarterly report summarizes the results of environmental monitoring conducted at the Hansville Landfill (Site) during the second quarter of 2020, 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 2020 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 2020

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 second quarter 2020 is provided below:

- On April 8, 2020, Aspect completed groundwater and surface water sampling in accordance with the Compliance Monitoring Plan (SCS, 2011). In addition, Aspect monitored landfill gas concentrations at the blower and inspected the blower system for proper operation.
- On May 21, 2020, Aspect monitored landfill gas concentrations at the blower and inspected the blower system for proper operation.
- On June 25, 2020, Aspect conducted landfill gas monitoring in accordance with the Compliance Monitoring Plan (SCS, 2011) and inspected the blower system for proper operation. Aspect monitored landfill gas concentrations at the blower, extraction wells, and at compliance monitoring probes. Extraction well flow rates were adjusted to ensure capture of landfill gasses, as necessary.

Deviations from the Compliance Monitoring Plan

There were no deviations from the Compliance Monitoring Plan (SCS, 2011) during the second quarter 2020 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

Aspect monitored landfill gas concentrations at the blower on April 8, 2020, and on May 21, 2020. Aspect monitored landfill gas concentrations at the blower, extraction wells, and compliance monitoring probes on June 25, 2020.

Landfill gas concentrations were measured 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 (CH₄), carbon dioxide (CO₂), oxygen (O₂), 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 25, 2020, observed conditions remained within the normal range. Methane and carbon dioxide concentrations at the blower inlet were approximately 2.3 percent by volume and 9.5 percent by volume, respectively. The oxygen concentration was approximately 10.3 percent by volume. Flow rates were approximately 66 standard cubic feet per minute (scfm) during the second quarter. Wellfield optimization will continue to focus on maximizing methane and carbon dioxide collection rates. During the second quarter of 2020, the condensate collection rate was approximately 2 gallons per day. The 2,000-gallon condensate storage tank contained approximately 925 gallons at the end of the second quarter of 2020.

Based on the consistent performance of the landfill gas collection system and in consultation with the County and WMW, landfill gas wellfield monitoring and tuning is conducted on a quarterly basis, during the third month of the quarter (March, June, September, December). Monthly site visits include monitoring the flare inlet and condensate management system and visual inspection of the wellfield. If flare inlet readings are outside the normal range, then troubleshooting measures may include wellfield monitoring and tuning. Any damaged wellheads or wellheads with sagging flexible hose will be repaired to maintain optimal landfill gas system performance.

Explosive Gas Control

Methane was not detected in any of the compliance gas probes during the compliance monitoring event on June 25, 2020. Locations of on-property compliance probes GP-1, GP-2S, GP-2M, GP-2D, GP-3, GP-4, GP-5, and GP-6 are shown on Figure A-1, and the location of off-property compliance probe GP-7 is shown on Figure B-1. Carbon dioxide concentrations ranged from 0.9 to 2.9 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 8, 2020. Samples were collected from six groundwater monitoring wells and from four surface water monitoring locations (see Figure B-1) for laboratory analysis.

Groundwater Flow

Groundwater flow conditions during the second quarter of 2020 were consistent with those observed during previous monitoring events. Groundwater surface elevations were calculated using water levels measured April 8, 2020 (see Table B-1). Groundwater elevations ranged from 238.3 feet North American Vertical Datum of 1988 (NAVD88) in MW-12I to 266.8 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 0.007 feet over feet (feet/feet) in the upgradient areas, to 0.014 feet/feet further downgradient, with the gradient steepening near the groundwater discharge area (Figure B-1).

Groundwater and Surface Water Quality

Groundwater quality results from the second quarter of 2020 are presented in Table B-2, including field parameters, conventional parameters, dissolved metals, and volatile organic compounds. During the reporting period, dissolved arsenic concentrations in groundwater were below the Sitespecific cleanup level of 0.005 milligrams per liter (mg/L) at all monitoring wells except MW-14 (0.0143 mg/L) and was essentially equal to the Site-specific cleanup level at MW-13D (0.00501 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 (μ g/L) at all monitoring wells except MW-6 (0.073 μ g/L) and MW-12I (0.085 μ g/L).

Surface water quality results from the second quarter 2020 are presented in Table B-3, including field parameters, conventional parameters, dissolved metals, and volatile organic compounds. During the reporting period, dissolved arsenic and dissolved manganese concentrations in surface water were below the Site-specific cleanup level of 0.005 mg/L and 2.24 mg/L, respectively. Vinyl chloride concentrations in surface water were not detected at a reporting limit below the Site-specific cleanup level of 0.025 μ g/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. Historically, dissolved arsenic concentrations at MW-13D were below the cleanup level and appear to have stabilized near the cleanup level. Dissolved arsenic concentrations at MW-14 have historically exceeded the Sitespecific cleanup level and have been decreasing steadily over time.

Figure C-2 shows vinyl chloride concentrations in groundwater have been less than the cleanup level of 0.025 μ g/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. Vinyl chloride concentrations at MW-14 were below the Site-specific cleanup level during the second quarter of 2020.

Figure C-3 shows time-series plots of historical and 10-year projected groundwater concentrations for MW-6 (vinyl chloride), MW-12I (vinyl chloride), MW-14 (vinyl chloride and arsenic), and MW-13D (arsenic). The projected restoration time frames for vinyl chloride concentrations range from approximately 2 to 10 years. In the unlikely event that the slowly increasing trend for dissolved arsenic at MW-13D continues, concentrations may regularly exceed the cleanup level in a couple years, but will remain below the Puget Sound regional background of 8 μg/L (Ecology, 2016) for more than 10 years. The projected restoration time frame for arsenic in groundwater at MW-14 is more than 10 years. Maintaining landfill gas collection performance may achieve groundwater cleanup levels within a shorter time frame than shown on Figure C-3.

Statistical Evaluation of Groundwater Trends

Statistically significant decreasing trends in dissolved arsenic and/or vinyl chloride concentrations were identified at monitoring wells MW-6, MW-12I, and MW-14. We attribute the decreasing trends to the cleanup actions at the Site, and project concentrations will continue to decrease to Site-specific cleanup levels as described above and shown in Figure C-3.

A statistically significant increasing trend in dissolved arsenic concentrations was identified at monitoring well MW-13D. Dissolved arsenic concentrations recently exceeded the Site-specific cleanup levels and remain below the regional natural background value provided by Ecology (Ecology, 2016) as shown in Figure C-3. The statistical trend analysis for dissolved arsenic concentrations in MW-13D was first conducted as part of the 2019 Annual Environmental Monitoring Report (Aspect, 2020) which includes an evaluation of potential sources. Based on the data available, it is likely that arsenic concentrations since 2007 reflect natural variations or off-Site influences, as opposed to effects from the Hansville Landfill Site. Dissolved arsenic concentrations in MW-13D and other locations will continue to be closely monitored and evaluated.

Table C-1 provides results of statistical analysis for arsenic and vinyl chloride for monitoring wells MW-6, MW-12I, MW-13D, 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). A negative Sen's Slope indicates a decreasing trend in concentrations while a positive Sen's Slope indicates an increasing trend.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.

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

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

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wells show lower dissolved oxygen concentrations than the upgradient well (MW-5), which is likely caused by landfill gas coming in contact with groundwater directly beneath the landfill. Increasing the rate of landfill gas collection may prevent geochemically-mediated effects on groundwater.

References

- Aspect Consulting, LLC, 2020, 2019 Annual Environmental Monitoring Report, Hansville Landfill, Kitsap County, Washington, February 28, 2020.
- 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.
- Washington State Department of Ecology (Ecology), 2016, Natural Background Groundwater Arsenic Concentrations in Washington State, Ecology Publication No. 14-09-044, March 2016.

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.

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Kitsap County Public Works August 28, 2020

Project No. 160423-004-05.1

Sincerely,

Aspect consulting, LLC



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Peter S. Bannister, PE Associate Engineer pbannister@aspectconsulting.com

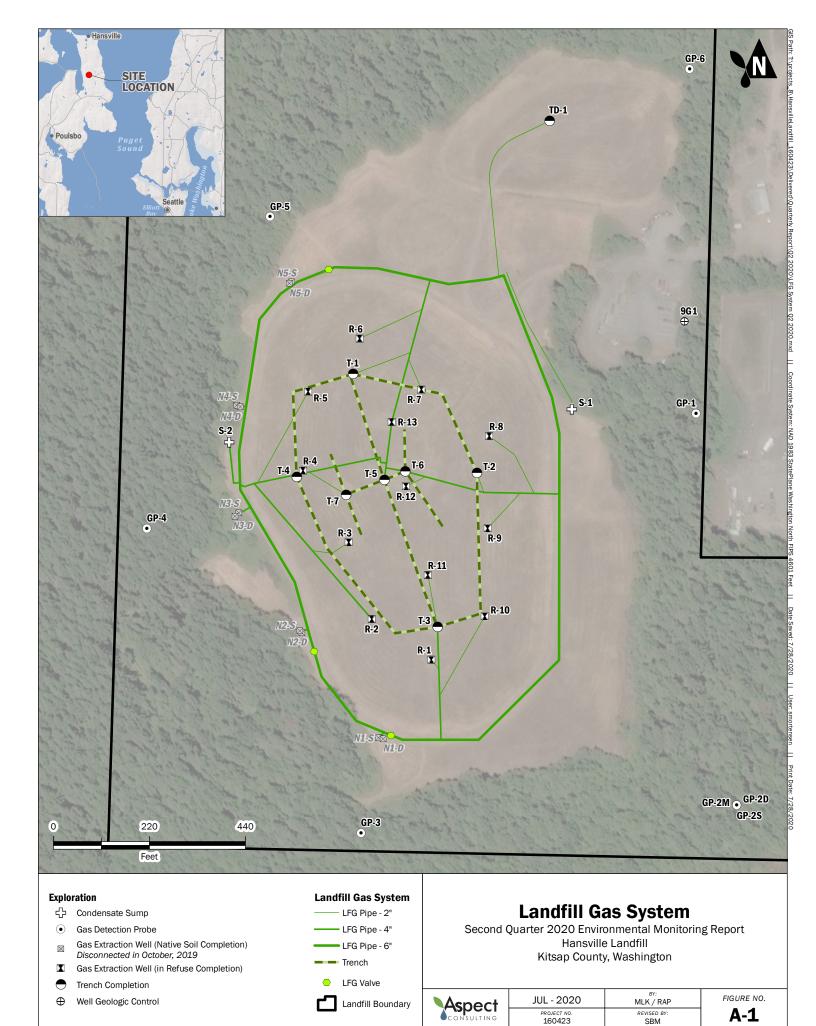
Meilani Lanier-Kamaha'o, LG Project Geologist mlkamahao@aspectconsulting.com

- 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 Cris Matthews, Washington State Department of Ecology Sam Phillips, Port Gamble S'Klallam Tribe

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ATTACHMENT A

Landfill Gas Data



Basemap Layer Credits || Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community Copyright:(c) 2014 Esri

Table A-1. Landfill Gas Data, Second Quarter, 2020

Project No. 160423, Hansville Landfill, Hansville, WA

			Methane CH4	Carbon Dioxide CO2	Oxygen O2	Balance Bal		Pressure Is H2O)		nperature rees F)		/ Rate CFM)
Location	Device ID	Date/Time	(% by vol)	(% by vol)	(% by vol)	(% by vol)	Initial	Adjusted	Initial	Adjusted	Initial	Adjusted
Blower Inlet	HANSBLIN	6/25/20 8:25	2.3	9.5	10.3	77.9	-3.94	-3.94	66.8	66.8	66.2	66.2
Blower Outlet	HANSBLOT	6/25/20 8:28	2.3	9.5	10.3	77.9	N/A	N/A	N/A	N/A	N/A	N/A
Extraction Well 001	HANSR001	6/25/20 9:49	8.3	14.5	0	77.2	-0.81	-0.81	74.5	74.6	0.8	0.3
Extraction Well 002	HANSR002	6/25/20 9:44	1.9	14.1	4.3	79.7	N/A	N/A	N/A	N/A	N/A	N/A
Extraction Well 003	HANSR003	6/25/20 9:39	9.1	13.6	0	77.3	-1.01	-1.01	67.3	67.4	0.9	0.9
Extraction Well 004	HANSR004	6/25/20 9:26	3.9	17.6	0.1	78.4	-1.51	-1.51	72.8	72.8	1.4	1.7
Extraction Well 005	HANSR005	6/25/20 9:21	5	18.5	0.2	76.3	-1.14	-1.14	75	75	2.3	2
Extraction Well 006	HANSR006	6/25/20 9:09	3.4	17.1	2.7	76.8	-1.29	-1.29	85.3	85.4	2.6	2.8
Extraction Well 007	HANSR007	6/25/20 9:05	0.4	14	3.3	82.3	-0.85	-0.85	65.6	65.5	2.2	2.2
Extraction Well 008	HANSR008	6/25/20 10:15	6	17.6	0	76.4	-0.67	-0.67	67.1	67	0	0.9
Extraction Well 009	HANSR009	6/25/20 10:05	2.1	15.1	1.7	81.1	N/A	N/A	N/A	N/A	N/A	N/A
Extraction Well 010	HANSR010	6/25/20 10:01	6.5	10.9	3	79.6	-0.72	-0.72	67.7	67.7	0.6	0.3
Extraction Well 011	HANSR011	6/25/20 9:56	3.3	8.3	1.2	87.2	-0.86	-0.86	73.3	73.5	0.3	1.1
Extraction Well 012	HANSR012	6/25/20 8:52	7.8	4.1	2.5	85.6	-0.83	-0.83	69.6	69.6	0	0
Extraction Well 013	HANSR013	6/25/20 9:01	4.2	13.9	1.5	80.4	N/A	N/A	N/A	N/A	N/A	N/A
Trench Collector TD-1	HANSTD01	6/25/20 8:38	1.9	21.1	0.2	76.8	-0.11	-0.11	66.1	66.1	12.2	12
Trench Collector TR-1	HANSTR01	6/25/20 9:15	0.1	16.4	2.1	81.4	-0.98	-0.98	71.5	71.5	2.2	2.2
Trench Collector TR-2	HANSTR02	6/25/20 10:09	7.7	17.8	0.1	74.4	N/A	N/A	N/A	N/A	N/A	N/A
Trench Collector TR-3	HANSTR03	6/25/20 9:52	0	0.1	20.4	79.5	N/A	N/A	N/A	N/A	N/A	N/A
Trench Collector TR-4	HANSTR04	6/25/20 9:30	1.8	19	0	79.2	-0.79	-0.79	75	75.3	2.4	2.2
Trench Collector TR-5	HANSTR05	6/25/20 8:57	0	0.1	20.5	79.4	N/A	N/A	N/A	N/A	N/A	N/A
Trench Collector TR-6	HANSTR06	6/25/20 8:46	10	17.3	0.2	72.5	N/A	N/A	N/A	N/A	N/A	N/A
Trench Collector TR-7	HANSTR07	6/25/20 9:35	8.9	17.5	0.1	73.5	-0.84	-0.84	66.2	66.2	2.9	2.5
Gas Probe 1	HANSGP01	6/25/20 1:40	0.0	1.3	19.5	NA	0.02	NA	NA	N/A	N/A	N/A
Gas Probe 2 Shallow	HANSGP2S	6/25/20 12:47	0.0	0.9	20.0	NA	0.01	NA	NA	N/A	N/A	N/A
Gas Probe 2 Middle	HANSGP2M	6/25/20 12:52	0.0	1.1	19.1	NA	0.0	NA	NA	N/A	N/A	N/A
Gas Probe 2 Deep	HANSGP2D	6/25/20 12:58	0.0	1.2	18.0	NA	0.0	NA	NA	N/A	N/A	N/A
Gas Probe 3	HANSGP03	6/25/20 12:30	0.0	1.2	19.8	NA	0.08	NA	NA	N/A	N/A	N/A
Gas Probe 4	HANSGP04	6/25/20 1:15	0.0	1.7	19.1	NA	-0.45	NA	NA	N/A	N/A	N/A
Gas Probe 5	HANSGP05	6/25/20 1:30	0.0	1.2	19.6	NA	0.0	NA	NA	N/A	N/A	N/A
Gas Probe 6	HANSGP06	6/25/20 1:50	0.0	3.7	17.0	NA	-0.01	NA	NA	N/A	N/A	N/A
Gas Probe 7	HANSGP07	6/25/20 12:08	0.0	2.9	18.0	NA	0.07	NA	NA	N/A	N/A	N/A

Notes

Static pressures and flow rates were inadvertently not recorded on June 25, 2020. Values reported represent averages of other monitoring events.

Flow rates measured using orifice plates (where installed).

N/A = indicates parameter not measured.

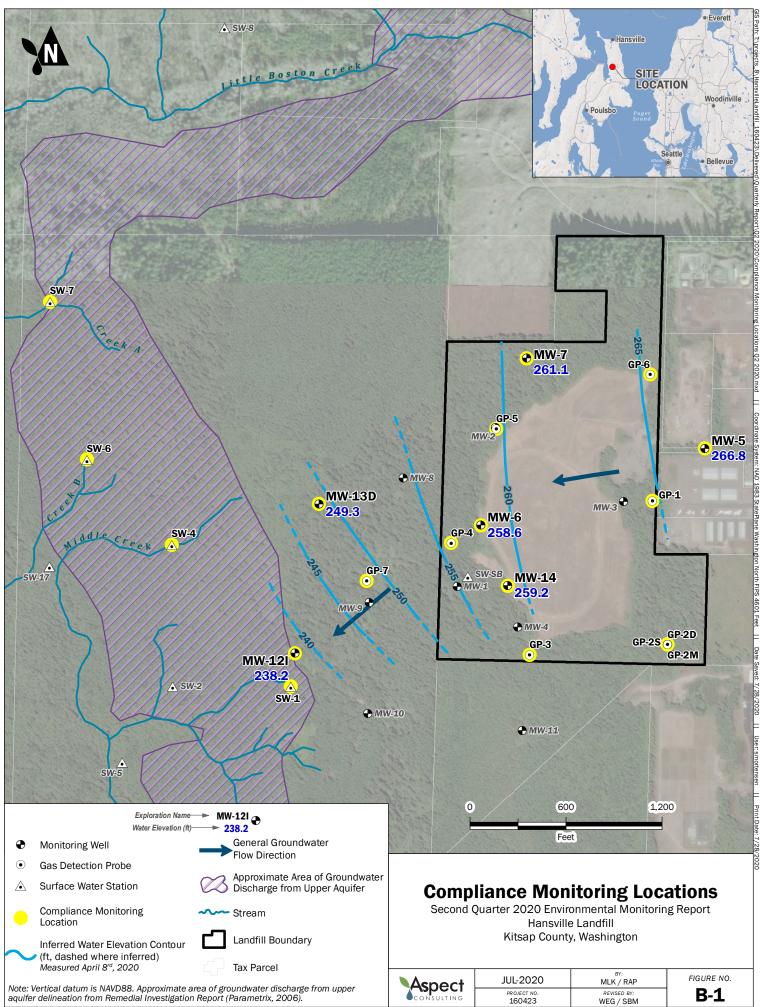
inches H2O = inches water column

degrees F = degrees Fahrenheit

(--) = indicates location was not monitored and has been decommissioned due to little to no landfill gas collection

ATTACHMENT B

Water Quality Results



Basemap Layer Credits || Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Table B-1. Water Level Elevations

Project No. 160423, Hansville Landfill, Hansville, WA

	Ground Elevation	Top of Casing Elevation	Screen E (ft NA	Elevation VD88)	Depth to Water	Water Level Elevation
Well	(ft NAVD88)	(ft NAVD88)	Тор	Bottom	(ft)	(ft NAVD88)
MW-5	363.7	366.9	244	234	100.14	266.8
MW-6	332.0	332.7	260	245	74.14	258.6
MW-7	344.3	346.0	259	244	84.95	261.1
MW-12I	245.6	248.1	217	207	9.93	238.2
MW-13D	258.1	260.4	205	195	11.12	249.3
MW-14	338.6	341.1	262	247	81.91	259.2

Notes

Depths to water collected April 8, 2020.

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

ft = feet

Table B-2. Groundwater Quality Results

Project No. 160423, Hansville Landfill, Hansville, Washington

		Location	MW-5	MW-6	MW-7	MW-12I	MW-13D	MW-14
		Date	04/08/2020	04/08/2020	04/08/2020	04/08/2020	04/08/2020	04/08/2020
Parameter	Units	Site Cleanup Level						
Field Parameters								
Dissolved Oxygen	mg/L		7.68	0.39	0.68	1.4	1.81	0.63
рН	pH units		7.09	6.95	6.35	7.02	7.31	6.87
Redox	mV		80.1	82	87.9	61.9	82.4	89.8
Specific Conductivity	uS/cm		155.8	331.8	203	130	167.5	182
Temperature	deg C		10.1	12.5	9.3	10.1	10.5	11.1
Turbidity	NTU		0.65	0.3	0.33	0.18	0.61	0.34
Conventionals								
Alkalinity	mg/L		75	180	130	77	82	97
Ammonia (as N)	mg/L		0.03 U					
Bicarbonate	mg/L		75	180	130	77	82	97
Carbonate	mg/L		10 U					
Chloride	mg/L		3 U	3.6	3 U	3 U	4.8	5.3
Nitrate (as N)	mg/L		2.49	0.357	0.185	0.100 U	0.100 U	0.100 U
Nitrite (as N)	mg/L		0.100 U					
Orthophosphate (as P)	mg/L		0.10 U	0.10 R	0.10 U	0.10 U	0.10 R	0.10 R
Sulfate	mg/L		7	23	5 U	5 U	15	8.8
Total Organic Carbon	mg/L		1 U	1.4	1.9	2.5	1 U	2.1
Dissolved Metals								
Arsenic	mg/L	0.005	0.00183	0.00170	0.00125	0.00238	0.00501	0.0143
Manganese	mg/L	2.24	0.0018	0.4	0.001 U	0.03	0.0075	1
Volatile Organic Compour	nds							
Vinyl Chloride	ug/L	0.025	0.02 U	0.073	0.02 U	0.085	0.02 U	0.023

Notes

Samples were collected on April 8, 2020.

Bold = Detected

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

Shaded = Exceeded Site Cleanup Level U = Not detected at or above reporting limit

R = Rejected. Orthophosphate results R flagged due to hold time exceedance.

Aspect Consulting

8/28/2020 V:\160423 Kitsap County Hansville Landfill\Deliverables\2020 Reports\2020Q2\Final\Appendix B\2020 Q2 Summary Table Second Quarter 2020 Environmental Monitoring Report Page 1 of 1

Table B-2

Table B-3. Surface Water Quality Results

Project No. 160423, Hansville Landfill, Hansville, Washington

	Location	SW-1	SW-4	SW-6	SW-7
	Date	04/08/2020	04/08/2020	04/08/2020	04/08/2020
Units	Site Cleanup Level				
mg/L		10.58	10.41	9.15	11.39
pH units		7.25	7.61	6.67	7.32
mV		82.3	95.7	90.2	82.2
uS/cm		157	314.7	111	125.9
deg C		9	8.4	8.6	8.5
NTU		2.56	4.67	46.9	6.07
mg/L		76	150	58	60
mg/L		0.03 U	0.03 U	0.037	0.039
mg/L		76	150	58	60
mg/L		10 U	10 U	10 U	10 U
mg/L		3.9	12	3.3	3.2
mg/L		1.81	1.19	0.100 U	1.16
mg/L		0.100 U	0.100 U	0.100 U	0.100 U
mg/L		0.10 U	0.10 U	0.10 R	0.10 R
mg/L		8.3	17	5 U	6.8
mg/L		1.7	7.6	19	8.9
mg/L	0.005	0.00161	0.00186	0.00297	0.00122
mg/L	2.24	0.001 U	0.035	0.045	0.0019
ds					
ug/L	0.025	0.02 U	0.02 U	0.02 U	0.02 U
	mg/L pH units mV uS/cm deg C NTU mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	Date Units Site Cleanup Level mg/L	Date 04/08/2020 Units Site Cleanup Level mg/L 10.58 pH units 7.25 mV 82.3 uS/cm 157 deg C 9 NTU 2.56 mg/L 76 mg/L 0.03 U mg/L 76 mg/L 10 U mg/L 0.03 U mg/L 0.010 U mg/L 1.81 mg/L 0.100 U mg/L 0.100 U mg/L 0.100 U mg/L 0.001 U mg/L 2.24	Date 04/08/2020 04/08/2020 Units Site Cleanup Level 10.58 10.41 mg/L 10.58 10.41 10.58 10.41 pH units 7.25 7.61 10.58 10.41 mV 82.3 95.7 10.58 10.41 mV 82.3 95.7 314.7 deg C 9 8.4 10.56 4.67 mg/L 76 150 150 mg/L 0.03 U 0.03 U 0.03 U mg/L 10 U 10 U 10 U mg/L 3.9 12 12 mg/L 0.100 U 0.100 U 0.100 U mg/L 0.100 U 0.100 U 10 U mg/L 0.100 U 0.100 U 10 U mg/L 0.100 U 0.100 U 0.100 U mg/L 0.005 0.00161 0.00186 mg/L 2.24 0.001 U 0.035	Date 04/08/2020 04/08/2020 04/08/2020 Units Site Cleanup Level 10.58 10.41 9.15 pH units 7.25 7.61 6.67 mV 82.3 95.7 90.2 uS/cm 157 314.7 111 deg C 9 8.4 8.6 NTU 2.56 4.67 46.9 mg/L 0.03 U 0.03 U 0.037 mg/L 76 150 58 mg/L 76 150 58 mg/L 10 U 10 U 10 U mg/L 10.03 U 0.03 U 0.037 mg/L 10 U 10 U 10 U mg/L 1.81 1.19 0.100 U mg/L 0.100 U 0.100 U 0.100 U mg/L 0.10 U 0.100 U 110 U mg/L 0.210 U 0.100 U 100 U mg/L 1.7 7.6 19 mg/L 0.005

Notes

Samples were collected on April 8, 2020.

Bold = Detected

mV = millivolts

deg C = degrees Celcius

µS/cm = microSiemens per centimeter

Shaded = Exceeded Site Cleanup Level

U = Not detected at or above reporting limit

R = Rejected. Orthophosphate results R flagged due to hold time exceedance.

Aspect Consulting

8/28/2020 V:\160423 Kitsap County Hansville Landfill\Deliverables\2020 Reports\2020Q2\Final\Appendix B\2020 Q2 Summary Table
 Table B-3

 Second Quarter 2020 Environmental Monitoring Report

 Page 1 of 1

ATTACHMENT C

Groundwater Statistics and Time-Series Plots

Table C-1. Statistical Analysis

Project 160423, Hansville Landfill, Hansville, WA

Dissolved Arsenic Statistical Results

			Mann-Ker	ndall Test ²		Sen's	Slope
Well	Statistical Trend ¹	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	Increasing	6.7	1.960	53	Yes	4.6E-07	0.00017
MW-14	Decreasing	-7.3	-1.96	53	Yes	-3.3E-06	-0.0012

Vinyl Chloride Statistical Results

			Mann-Ker	ndall Test ²		Sen's	Slope
Well	Statistical Trend ¹	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	-6.8	-1.96	54	Yes	-6.8E-05	-0.025
MW-7							
MW-12I	Decreasing	-7.0	-1.96	54	Yes	-9.5E-05	-0.035
MW-13D							
MW-14	Decreasing	-8.7	-1.96	54	Yes	-1.0E-04	-0.038

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

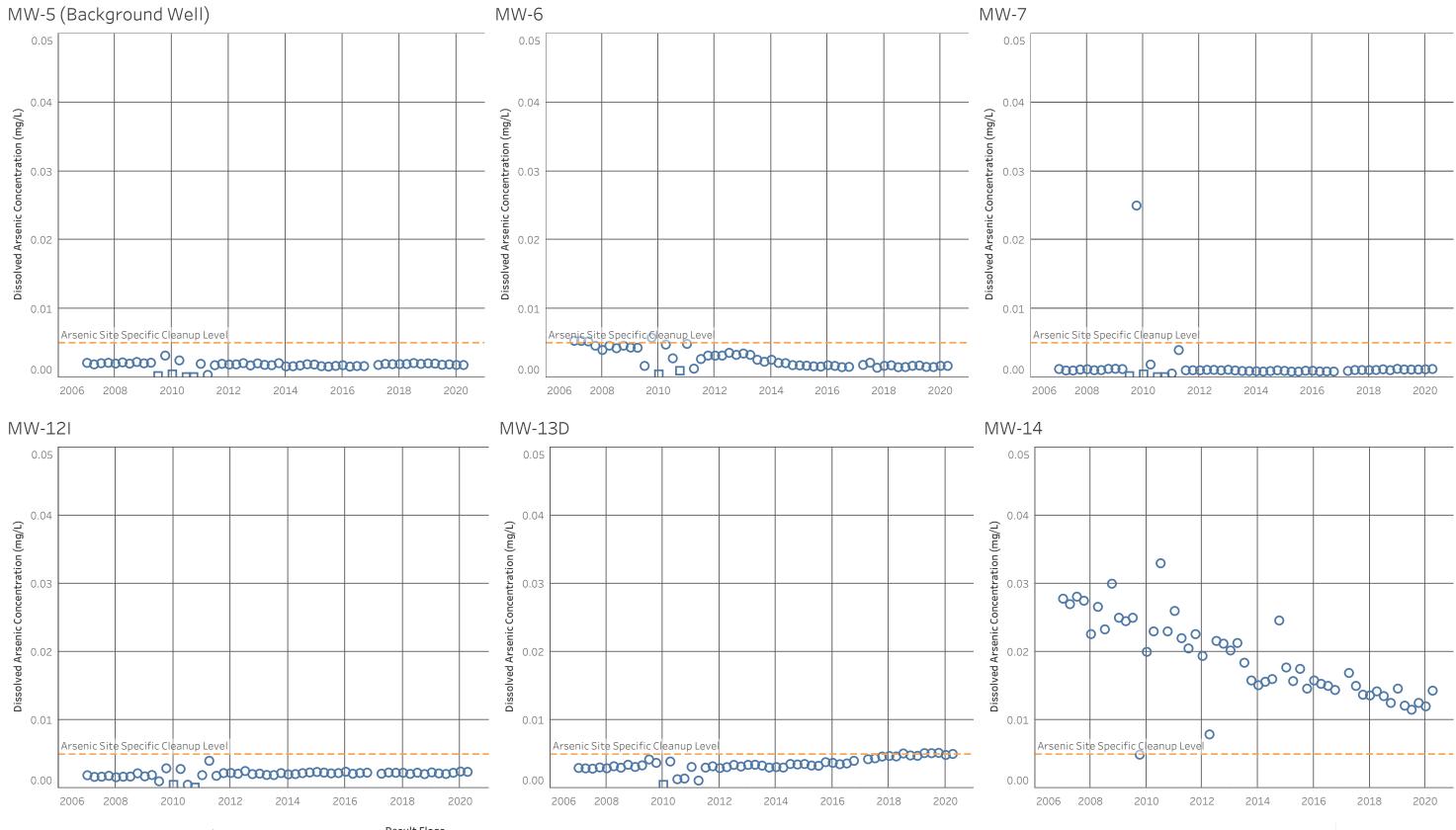
"Decreasing" if the magnitude of the Test Value is greater than the Critical Value and the Sen's Slope is negative.

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.

3 - "--" Indicates statistical analysis not conducted.

ug/L - micrograms per liter



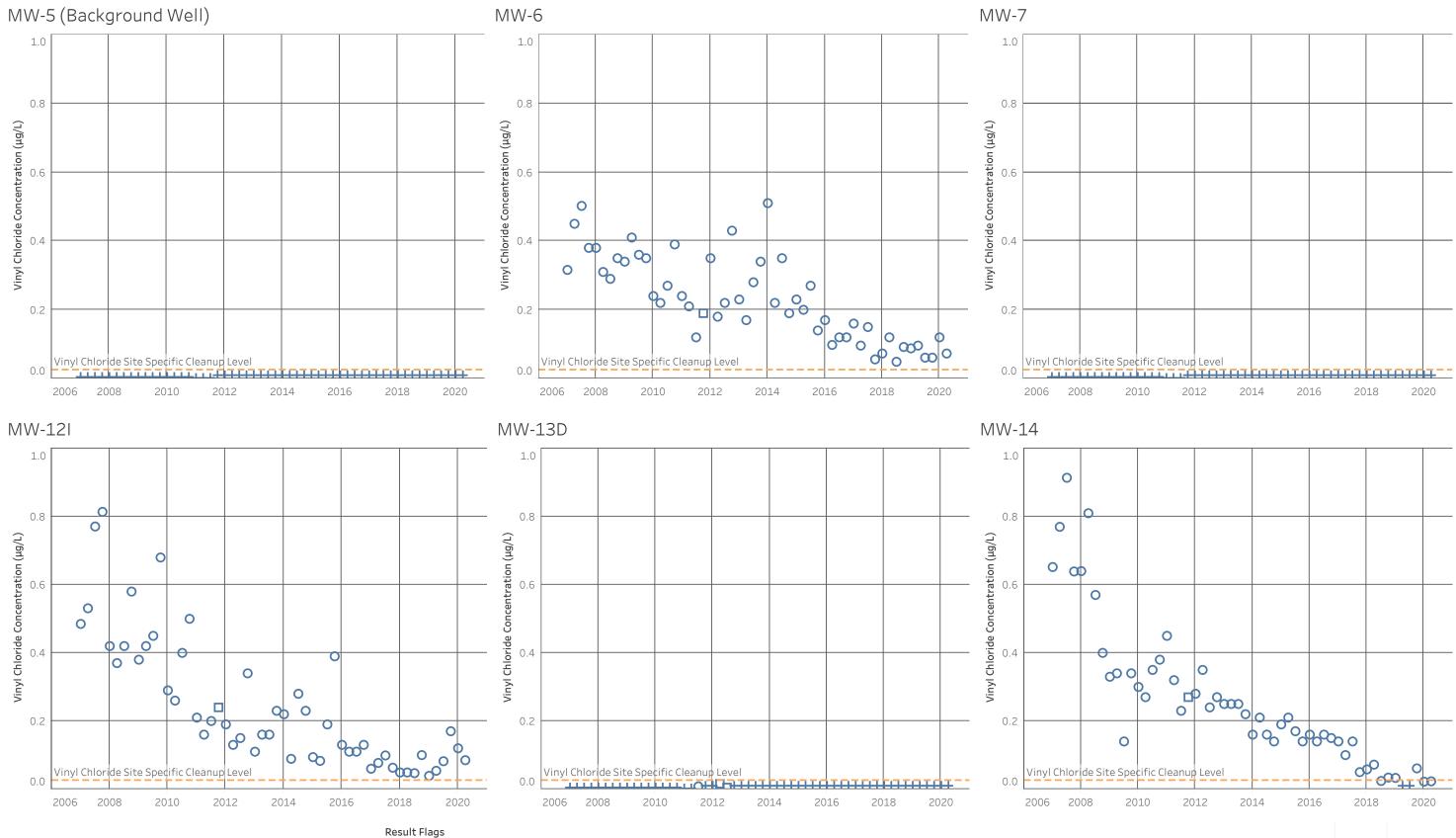
Note: Non-detected values are shown at 1/2 the reporting limit. Results from First Quarter 2017 were rejected. See text.

Result Flags O Detected

U - Non-Detect

Aspect CONSULTING 8/28/2020 Trend Plots (As)

Figure C-1 - Dissolved Arsenic Sampling Results 2020 Second Quarter Monitoring Report Hansville Landfill Kitsap County, WA

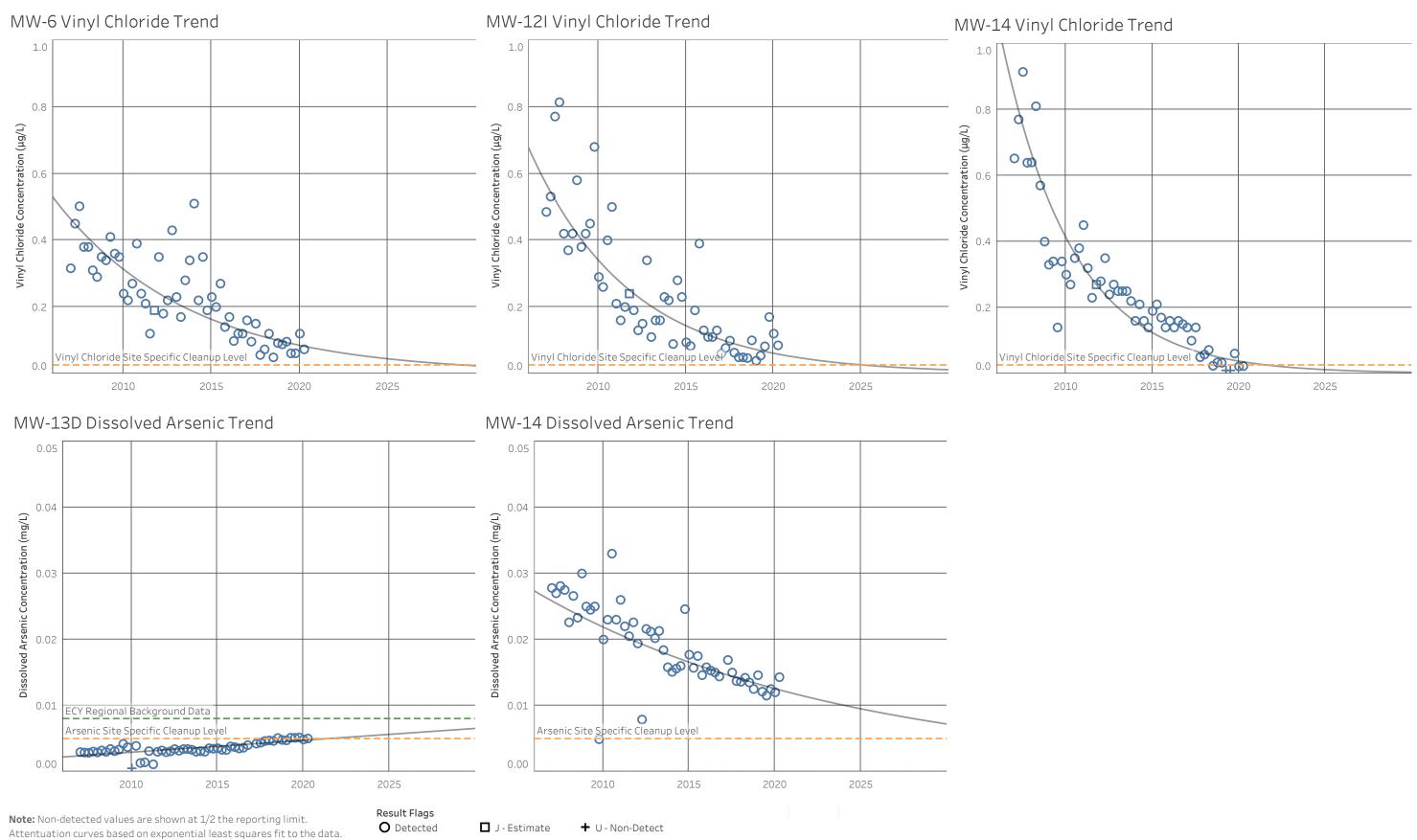


Note: Non-detected values are shown at 1/2 the reporting limit.

□ J - Estimate + U - Non-Detect



Figure C-2 - Vinyl Chloride Sampling Results 2020 Second Quarter Environmental Monitoring Report Hansville Landfill Kitsap County, WA



Aspect

CONSULTING 8/28/2020 Trend Plots (VC)

ATTACHMENT D

Field Forms and Laboratory Reports

ROUNI	OWATER	SAMPLING F	RECORD			WELL NUM	BER: M	w-5		Page: of
roject Nai	me:	Hansville Landf	ill			Project Num	1ber:	160423	2	
ate:	4/8/2020	(m. 5)		-		Starting Wat			9-14	
ampled by	y:	II:	NTOC			Casing Stick Total Depth				
creened I	nterval (ft. T	OC)	NICC			Casing Diam	neter (inche	es): 24		
		тос)								
asing Vol	ume	(ft Wate	r) x	(Lpfv))(gpf) =	(L)(ga	l)			
asing volu		= 0.02 gpf				6" = 1.4			Sample Int	ake Depth (ft TOC)
		0.09 Lpf 2"	= 0.62 Lpf	4" =	2.46 Lpf	6" = 5.56	Lpf			
URGIN	G MEASU	REMENTS								
Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume	Purge Rate	Water Level	Temp.	Specific Conductance	Dissolved Oxygen	ρН	ORP	Turbidity	Comments
	(gal or L)	(gpm or Lpm)	(ft)	(°C)	(µS/cm)	(mg/L)		(mv)	(NTU)	
2925	Ó	6.2	1021							Start, Clear
7930		<u> </u>	106.14	8.5	153.6	7.09	6.48	88.7	7.78	
7435			100-14	4.9	151.1	6.36	6.48	85.6	1.57	
1940			100,14	10.2	154.4	231	6.04	79.3	1.05	
2445			105,14	10.1	155.1	7.44	7.06	86.1	0.82	1
3956			100.14	IAI	155-8	718	200	80.1	0-85	Sample
100			100.1	10-1	10.000	1-00	1007	001		- 4 L
				·						
otal Gallo	ns Purged:	1.25				Total Casing	g Volumes I	Removed:		
ndina Wa	ter Level (ft	TOC):				Ending Tota	l Depth (ft -	TOC):		_
Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appea	rance			
	mL	Dotte .jpo				Color	Turbidity &			Remarks
240-5-							Sediment			
122	40	VOA	3	N	HCI	Clear	0.65			
	500	Amber	1	N	H2SO4					1
	500	Poly	2	N	N				to ARI	
	500	Poly	2	Y	HNO3	-		direct sub	to ARI 🛁	
*	250	Poly	1	Y	N	4-	¥	direct sub	to ARI	
	19			-			1	N.2		
AETHO			madel 9 ees	ial mumbar)	Vel	Turbidi	imotor (1	to		iluc/white
IETHO			model & ser	iai number;		Turbiai	meter. W	PIC	WLI.	- COLOCIC
arameter	s measured	6	17 I I I I I I I I I I I I I I I I I I I	27	a prioteltic	Deerer Fra	unmont.	Alconov	water	
arameter: urging Eq	uipment:	dedicated black	der pump	27	peristaltic	Decon Equ	uipment:	Alconox +	water	

GROUN	DWATER	SAMPLING F	RECORD			WELL NUM	IBER: 🎢	14-6		Page:(of
Date: Sampled b	4/8/2020 by:	Hansville Land				Project Num Starting Wa Casing Sticl Total Depth	ter Level (f kup (ft):	it TOC): 🔪	4.14	
Screened	Interval (ft. T	TOC)				Casing Dian	neter (inche	es): 7"		
Casing Vo	lume lumes: 3/4":	(ft Wate = 0.02 gpf	r) x 2" = 0.16 gp	(Lpfv f 4"	= 0.65 gpf	6" = 1.4	7 gpf		Sample Int	ake Depth (ft TOC): melone
PURGIN		0.09 Lpf 2'	' = 0.62 Lpf	4" =	2.46 Lpf	6" = 5.56	Lpf			
Criteria:		Typical 0.1-0.5 Lpm	Stable	ла	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (ga)or L)	Purge Rate	Water Level (ft)	Temp. (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pН	ORP (mv)	Turbidity (NTU)	Comments
1432.	8	0-Z	74.14		755	0	1 14	545		Start, Clear
1442			74.16	12.7	337.3	0.51	6.97	82.3	3.06	
1447			74.16	2.6	32416	6.38	6.96	82.4	0.51	
1452			74.17	12.5	330-0	0.50	6.95	821	0-54	
1457			74.17	12.5	33 . 8	0-39	6.95	82.0	0.41	Sample
	ns Purged:	<u>[5</u> тос): 74,	.17			Total Casing Ending Total		3 -	-	
AMPLE		DRY								
Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appear				Remarks
10-	mL					Color	Turbidity & Sediment			
500	40	VOA	3	N	HCI	Clar	0.30			
	500	Amber	1	N	H2SO4					
	500	Poly	2	N	N	_		direct sub		
+	<u>500</u> 250	Poly	2	Y Y	HNO3 N	×	+	direct sub		
	200	1 013		1	IN IN			ancor sub		
	s measured v	with (instrument			YSI: rad	Turbidir Decon Equi	neter: 🕡			Juhte
oneed of	Discharged	Water:	on site							

P:\Kitsap County Solid Waste\Hansville Landfill 2016\Project 160423\Data\Field Data\WQ Sampling\Groundwater Sampling Form_Hansville

GROUNI	WATER	SAMPLING F	FCORD	number		WELL NUM	BER: M	W-7		Page: 1 of
								N TODAYA MARKAN		·
		Hansville Land	<u>ill</u>			Project Num Starting Wat				
ate:	4/8/2020 y:DC_F	<	-			Casing Stick			4.13	
leasuring	Point of We	11:	N TOC			Total Depth				
Screened I	nterval (ft. T	OC)				Casing Diam	neter (inche	s): 2"		
	-	TOC)								
		(ft Wate								s
Casing vol		= 0.02 gpf 0.09 Lpf 2'	-						Sample Int	ake Depth (ft TOC): mid -SCree
DURCIN			- 0.02 Lpi	- 4 -	2.40 Lpi	0 - 5.50	Срі	2		
	G WEASU	Typical						. 10 . 11	. 100/	
Criteria:	<u> </u>	0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	1
Time	Cumul. Volume	Purge Rate	Water Level	Temp.	Specific Conductance	Dissolved Oxygen	pН	ORP	Turbidity	Comments
	(gal or L)	(gpm or (pm)	(ft)	(°C)	(µS/cm)	(mg/L)		(mv)	(NTU)	
0817	0	0:2	84.97							Start
0822		1	84.84	9.3	197.8	0 04				
0827			84.82	9.3	196.0	0.58	6.32	97.4	1.57	4 · · · ·
5832			84 82	9.3	198.0	0.86	1		1.16	· · · · · · · · · · · · · · · · · · ·
5837			84.82	9.3	201.0	0.80			0.51	
0842			84.82	the factor of the second se	203.0	0.68				
845		V	D.I. DE	11.0		0100	0.30	<u>v.</u>		Sample
212									-	SWITTER
		· · · ·								
							-	R	_	
										· · · · · · · · · · · · · · · · · · ·
Total Gallo	ns Purged:	1.5 991				Total Casing	g Volumes I	Removed:		
			98				D			
	iter Level (ft					Ending Tota	Depth (ft	OC):		
SAMPLE			1					r		
Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appea	Turbidity &			Remarks
	mL					Color	Sediment			
0845	40	VOA	3	N	HCI	clear	0.33			
1	500	Amber	1	N	H2SO4	- A	1			
	500	Poly	2	N	N			direct sub	to ARI	
· ·	500	Poly	2	Y	HNO3			direct sub		
		Poly	1	Y	N		4	direct sub		
	250		1	· · · ·						
	250						L			
METHO			I		I					· Les ·
METHO	DS	with (instrument	model & se	rial number	YSI: red	Turbidi	meter: 0r	ange	WLI: 00	ange/white
METHOI Parameter	DS s measured	with (instrument		100	YSI: <u>red</u> peristaltic		meter: 0r ipment:	0		ange/white
Parameter Purging Ec	DS s measured quipment:		der pump	100				0		ange/white

	WATER	SAMPLING F	RECORD			WELL NUM	ber: <u>Mv</u>	<u>J-121</u>		Page: 1 of 1
te:	ie:	Hansville Land	ill			Project Num				
	4/8/2020		0			Starting Wat			.93	
	DLB		N TOC			Casing Stick Total Depth			() () () () () () () () () () () () () (
-	terval (ft. T		NIUC			Casing Dian				
		ГОС)								
sing Volu	me	(ft Wate	r) x	(Lpfv)(gpf) =	(L)(ga	1)			
	mes: 3/4"=	= 0.02 gpf	2" = 0.16 gp	f 4"	= 0.65 gpf	6" = 1.4	7 gpf		Sample Int	ake Depth (ft TOC): M
		0.09 Lpf 2'	= 0.62 Lpf	4 [*] =	2.46 Lpf	6" = 5.56	Lpf	_		
JRGING	6 MEASU	REMENTS								
Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume	Purge Rate	Water Level	Temp.	Specific Conductance	Dissolved Oxygen	рН	ORP	Turbidity	Comments
	(gal or L)	(gpm or (pm))	(ft)	(°C)	(µS/cm)	(mg/L)		(mv)	(NTU)	
045	0-	20	9.93		-				-	Start
050-										
155	0	2.0	9.93							start
00			9.99	96	127.5	2.31	6-91	72-8	D.36	
05			9.94	9.8	131.1	1.57		68 7		
10	*		997	10.1	131.7	1.56	7.01	62 B	0.18	
15			9.95		130.3	1.41			0.19	
20				10.1	130.0	1.40		61.9		
25	1						1.00			sample
-										
					· · ·			•		
										20
							<u> </u>			
		70								1
al Gallon	s Purged:	1.15				Total Casing	g Volumes I	Removed:		
ling Wat	er Level (ft	тос): 9.	95			Ending Tota	I Depth (ft	ГОС):		_
MPLE	INVENTO	ORY			5					
Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appea	irance			Demarks
	mL					Color	Turbidity & Sediment	1		Remarks
25	40	VOA	3	N	нсі	clear				
1			1	N	H2SO4	1				
++	500	Amber				<u> .</u>		direct sub		
+ +	500	Poly	2	N	N UNO2					
	500	Poly	2	Y	HNO3			direct sub		
$\left \right $	250	Poly	1	Y	- N - 5	2	v	direct sub	IU ARI	
				1	L		· · · · · · · · · · · · · · · · · · ·			

.

	DWATER	SAMPLING I	RECORD			WELL NUM	ber: <u>Mi</u>	<u>v-13</u> D)	Page: of
-		Hansville Land	fill			Project Num				
	4/8/2020		2			Starting Wat Casing Stick			.12	
		II:	N TOC			Total Depth				
creened	Interval (ft. T	OC)				Casing Diam	neter (inche	s): 2"		
		TOC)								
		(ft Wate							0	ake Depth (ft TOC): Mid-su
asing vol	lumes: 3/4" 3/4"=	= 0.02 gpf 0.09 Lpf 2'	2" = 0.16 gp " = 0.62 Lnf	t 4" 4" =	= 0.65 gpt 2.46 Lpf	6" = 1.4 6" = 5.56	/ gpt		Sample In	ake Depth (it TOO). MTO - SO
URGIN			- 0.02 Lpi		2.40 []	0 0.00				
Criteria:		Typical	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
	Cumul.	0.1-0.5 Lpm	Water		Specific	Dissolved	1			Commanto
Time	Volume	Purge Rate	Level	Temp.	Conductance	Oxygen	pН	ORP	Turbidity	Comments
1	(gal or L)	(gpm or (pm)	(ft)	(°C)	(µS/cm)	(mg/L)		(mv)	(NTU)	
210	0	0.2	11.12	10.7	1 2 - 1 - 2	2 75	7 0/1	201	0.75	Start
215			11.20		167.1					
220			11.24		167.2	2.18	7.26		0.62	
225			11.24		167.3	1.92	7.31	84.7	0.62	
230			11.24		167.4	1.83	7.31		0.70	
235		.1	11.24	10.5	167.5	1-81	7.31	62.4	0.65	
240										sample
										· · · · · · · · · · · · · · · · · · ·
		43 - C								
									· · ·	
otal Gallo	ons Purged:	1.25				Total Casing	y Volumes F	Removed:		
	- t 1 1 (f)	тос): 11.2	6			Endine Toto	Denth (ft 7			
1. 141						Ending Tota				-
		JRY				·			2	
AMPLE	· ·		0	T 114	Duranting	A				
	Volume	Bottle Type	Quantity	Filtration	Preservation	Appea				Remarks
AMPLE Time	· ·		Quantity	Filtration	Preservation	Color	Turbidity & Sediment			Remarks
Time	Volume		Quantity 3	Filtration	Preservation HCI		Turbidity &			Remarks
Time	Volume mL	Bottle Type		1		Color	Turbidity & Sediment			Remarks
SAMPLE	Volume mL 40	Bottle Type	3	N	HCI	Color	Turbidity & Sediment	direct sub	to ARI	Remarks
Time	Volume mL 40 500	Bottle Type VOA Amber	3	N N	HCI H2SO4	Color	Turbidity & Sediment	direct sub direct sub		Remarks
Time	Volume mL 40 500 500	Bottle Type VOA Amber Poly	3 1 2	N N N	HCI H2SO4 N	Color	Turbidity & Sediment		to ARI	Remarks

ate: ampled by: leasuring P creened In			RECORD			WELL NUM	DEK. <u>1-10</u>	Page: 1 of		
ampled by: leasuring P creened In		Hansville Landf	ill			Project Num				
leasuring P creened In			s.			Starting Wat			1.91	
creened In			NTOC			Casing Stick Total Depth				
			NTOC			Casing Dian	neter (inche	s): 2"		
mer mack n	nterval (ft.									
asing Volu	me	(ft Wate	r) x	(Lpfv)	(gpf) =	(L)(ga	I)			
asing volur	mes: 3/4":	= 0.02 gpf	2" = 0.16 gp	F 4"	= 0.65 gpf	6" = 1.4	7 gpf		Sample Inf	take Depth (ft TOC): <u>mid-SC</u>
		0.09 Lpf 2"	= 0.62 Lpf	4" =	2.46 Lpf	6" = 5.56	Lpf			
URGING	G MEASU	REMENTS						-		
Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume	Purge Rate	Water Level	Temp.	Specific Conductance	Dissolved Oxygen	pН	ORP	Turbidity	Comments
	(gal or L)	(gpm or (Lpm))	(ft)	(°C)	(µS/cm)	(mg/L)		(mv)	(NTU)	
433	0	0.2	81.91							Start
438		ĩ	\$1 95	11.3	1669	4.17	6.83	93.8	1.09	
443			81.96	11.2	178.4	1.22	6.76	98.7		
448			8 96	11.2	185.3	0.89	6.79	96.3	0.46	
453			8 96	11.2	185.4	0.75		92.4		
458			8196	11.1	182.8	0.62	and the second sec		0.34	
503			81.96		182.3				0.32	
508			81.96	11.1	182.0	0.63	6.87		0.35	
			01-10	11.1	10-10		0-01	01.0	0,00	Sample
513										Sampe
+								· · · · · · · · · · · · · · · · · · ·		
								·		
		-					,			
otal Gallon	s Purged:	L				Total Casing	g Volumes I	Removed:		-
inding Wate	er Level (ft	тос): 81.	95			Ending Tota	I Depth (ft 1	roc):		<u></u>
SAMPLE										
Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appea	irance			
1513	mL					Color	Turbidity &	1		Remarks
1212		1/04		N	LICI	clear	Sediment			
+	40	VOA	3	<u>N</u>	HCI	CICAN	1-0.31			
	500	Amber	1	N	H2SO4					
+	500	Poly	2	N	N			direct sub		
	500	Poly	2	Y	HNO3			direct sub		
5	250	Poly	1	Y .	N		4	direct sub	to ARI	
						1	-		_	
METHOD	S									
		with (instrument	model & ser	ial number)	YSI: hlue	. Turbidi	meter: 01	range	wLI: ປັດ	ange/white
uraina Fai	linment:	dedicated blade	der pump	OR	peristaltic	Decon Equ	upment:	Alconox +	water	0.1
		d Water:				seen met				

				Sample number	Sur-1	-04082	Ø			-	
GROUNI	DWATER	SAMPLING R	ECORD			WÈLL NUM	ber: <u>SC</u>	<u>v-</u> 1		Page: 1 of 1	
Date: Sampled b Measuring Screened I	4/8/2020 y: Point of Wel nterval (ft. T	1:				Project Number: 160423 Starting Water Level (ft TOC): Casing Stickup (ft): Total Depth (ft TOC): Casing Diameter (inches):					
Casing Vol Casing vol	lume umes: 3/4"= 3/4"= ((ft Water = 0.02 gpf 2 0.09 Lpf 2	2" = 0.16 gpf	4"	= 0.65 gpf	6" = 1.4	7 gpf		Sample Int	take Depth (ft TOC):	
		Typical									
Criteria: Time	Cumul. Volume (gal or L)	0.1-0.5 Lpm Purge Rate (gpm or Lpm)	Stable Water Level (ft)	Temp. (°C)	± 3% Specific Conductance (µS/cm)	± 10% Dissolved Oxygen (mg/L)	± 0.1	± 10 mV ORP (mv)	± 10% Turbidity (NTU)	Comments	
				90	1520	10.58	7.25	82.3	2.56	Start	
									-		
	ons Purged:	TOC):				Total Casing Ending Tota					
SAMPLE		DRY									
Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appea Color	Turbidity & Sediment	Remarks			
1050	40	VOA	3	N	HCI	Clear	2.56				
	500 500	Amber Poly	1	N N	H2SO4 N			direct sub	to ARI		
	500	Poly	2	Y	HNO3			direct sub	to ARI		
+	250	Poly	1	Y	N	¥	Ð	direct sub	to ARI		
Purging Ec Disposal o	rs measured quipment: f Discharged	with (instrument dedicated bladd Water: ts:	ler pump on site	OR	peristaltic	Decon Equ	meter: Cul	Alconox +	WLI:		

GROUN					365-4	V 100				
	DWATER	SAMPLING R	ECORD			WELL NUM	Page: / of /			
Date: Sampled b Measuring Screened I	4/8/2020 y: Doint of Well Interval (ft. To	u() II: OC)	N TOC			Project Num Starting Wat Casing Stick Total Depth Casing Diam				
Casing Vol Casing vol	lume umes: 3/4"=	FOC) (ft Water = 0.02 gpf 2 0.09 Lpf 2"	r) x 2" = 0.16 gpt	(Lpfv) f 4"	= 0.65 gpf	6" = 1.4	7 gpf		Sample Int	take Depth (ft TOC):
PURGIN	G MEASU	REMENTS								*
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)	(mg/L)	pН	ORP (mv)	Turbidity (NTU)	Comments
				8_4	3/4.7	10,41	7.61	45-7	4.67	Start
	ons Purged:	TOC):			-	Total Casing Ending Tota		_		
SAMPLE		DRY								
Time	Volume mL	Bottle Type	Quantity	Filtration	Preservation	Appea	rance Turbidity & Sediment	-		Remarks
130	40	VOA	3	N	нсі	der	4.67			
1	500	Amber	1	N	H2SO4		1			
	500	Poly	2	N	Ň			direct sub	to ARI 🥠	71
	500	Poly	2	Y	HNO3	1	5	direct sub	to ARI	x/
*	250	Poly	1	Y	N		v	direct sub	to ARI	
Purging Ec Disposal o	rs measured quipment: of Discharged	with (instrument dedicated bladd Water: ts:	ler pump on site	OR	peristaltic	Decon Equ	meter:	Alconox +	WLI:	

		SAMPLING R	ECOPD			WELL NUM	BED. SA	1-6		Page: of		
ROUNI	JWAIER	SAMPLING R	ECORD			WELL NUM	BER: <u>74</u>	<u> </u>		Page: or		
		Hansville Landf	ilł			ber:						
ate:	4/8/2020 y:	and -				Starting Water Level (ft TOC): Casing Stickup (ft):						
ampled by	y:		NITOC			Total Depth						
	nterval (ft. T		11100			Casing Dian						
		тос)				·		<u></u>				
asing Vol	ume	(ft Water	r) x	(Lpfv)	(gpf) =	(L)(ga	I)					
asing volu	umes: 3/4"=	= 0.02 gpf	2" = 0.16 gpt	· 4"	= 0.65 gpf	6" = 1.4			Sample Int	ake Depth (ft TOC):		
		0.09 Lpf 2"	= 0.62 Lpf	4" =	2.46 Lpf	6" = 5.56	Lpf					
PURGIN	G MEASU	REMENTS										
Criteria:		Typical 0.1-0.5 Lpm	Stable	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%			
Time	Cumul. Volume	Purge Rate	Water Level	Temp.	Specific Conductance		рН	ORP	Turbidity	Comments		
	(gal or L)	(gpm or Lpm)	(ft)	(°C)	(µS/cm)	(mg/L)	667	(mv)	(NTU) 46.9	Chart		
				0.6	111.0	(10	601	NA	40.9	Start		
									<u> </u>			
					×							
										×		
							•					
							1					
			5									
otal Gallo	ns Purged:					Total Casing	Volumes I	Removed:				
otal Gallo	na i uigeu					i otali odolilig	, , , , , , , , , , , , , , , , , , , ,		2			
nding Wa	ter Level (ft	TOC):				Ending Tota	I Depth (ft 1	ГОС):		-		
SAMPLE		DRY										
Time	Volume	Bottle Type	Quantity	Filtration	Preservation	Appea	rance			Remarks		
	mL					Color	Turbidity & Sediment]		Remarks		
1210	40	VOA	3	N	HCI	4 St. lon	469					
1	500	Amber	1	N	H2SO4		1					
	500	Poly	2	N	N			direct sub	to ARI XI	(
				Y				direct sub	2/			
+	500	Poly	2		HNO3		7					
	250	Poly	1	Y	N		8	direct sub				
						1		I				
NETHOD	DS							1		J.		
arameters	s measured	with (instrument	model & ser	ial number)	YSI: Ved	Turbidi	meter: 🕡	ste	WLI:			
		dedicated blade			peristaltic	Decon Equ	ipment:	Alconox +	water			
		Water:										
										2		
	nell'ommen	ts:										

9

				Sample number	Sw-7.	- 04082	20			-
GROUN	DWATER	SAMPLING R	ECORD			WELL NUM	ber: <u>\$</u> 2	v-7		Page: of
Date: Sampled b Measuring Screened I	4/8/2020 y: Point of We nterval (ft. T	Hansville Landfi 10///203 II: OC) TOC)	N TOC			Project Num Starting Wat Casing Stick Total Depth Casing Diarr	ter Level (ft :up (ft): (ft TOC <u>):</u>	TOC):		
Casing Vol	ume umes: 3/4"=	(ft Water = 0.02 gpf 5 0.09 Lpf 2*	2" = 0.16 gpt	f 4"	= 0.65 gpf		7 gpf		Sample Int	ake Depth (ft TOC):
PURGIN	G MEASU	REMENTS								
Criteria:	Cumul.	Typical 0.1-0.5 Lpm	Stable Water	na	± 3%	± 10% Dissolved	± 0.1	± 10 mV	± 10%	Quart
Time	Volume (gal or L)	Purge Rate (gpm or Lpm)	Level (ft)	Temp. (°C)	Conductance (µS/cm)	Oxygen (mg/L)	рн 7.32	ORP (mv)	Turbidity (NTU) 6-07	Comments
								0.12		
					-					
Ending Wa		TOC):				Total Casing				
			Oursetitu	Filtration	Preservation	Annea				
Time	Volume mL	Bottle Type	Quantity	Filtration		Appea Color	Turbidity & Sediment			Remarks
1340	40	VOA	3	N	HCI	Cler	6.07			
	500 500	Amber	2	N N	H2SO4			direct sub	to ARI	
	500	Poly	2	Y	HNO3			direct sub		
¥	250	Poly	1	Y	N	1	¥	direct sub		
Purging Ec Disposal o	s measured quipment: f Discharged	with (instrument dedicated bladd Water: ts:	ler pump on site	OR	peristaltic	Decon Equ	meter: []] ipment:	h fe Alconox +	WLI: water	

🛟 eurofins

Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 280-135445-1

Client Project/Site: Hansville Landfill Sampling Event: 2Q_3Q_4Q Sampling

For:

..... Links

Review your project results through

Total Access

Have a Question?

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Aspect Consulting 350 Madison Ave N Bainbridge Island, Washington 98110

Attn: Ms. Meilani Lanier-Kamaha'o

Betay Sara

Authorized for release by: 4/22/2020 10:40:00 AM

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

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

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

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

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3 4

Qualifiers

General Ch	nemistry
Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.

Glossary

MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not	
	5
MS and/or MSD recovery exceeds control limits.	6
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	
Percent Recovery	8
Contains Free Liquid	
Contains No Free Liquid	9
Duplicate Error Ratio (normalized absolute difference)	
Dilution Factor	
Detection Limit (DoD/DOE)	
Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
Decision Level Concentration (Radiochemistry)	
Estimated Detection Limit (Dioxin)	
Limit of Detection (DoD/DOE)	
Limit of Quantitation (DoD/DOE)	12
Minimum Detectable Activity (Radiochemistry)	
Minimum Detectable Concentration (Radiochemistry)	
Method Detection Limit	
Minimum Level (Dioxin)	
Not Calculated	
Not Detected at the reporting limit (or MDL or EDL if shown)	
Practical Quantitation Limit	
Quality Control	
Relative Error Ratio (Radiochemistry)	
Reporting Limit or Requested Limit (Radiochemistry)	
Relative Percent Difference, a measure of the relative difference between two points	
Toxicity Equivalent Factor (Dioxin)	
	applicable. Result exceeded calibration range. MS and/or MSD recovery exceeds control limits. 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 Percent Recovery Contains Free Liquid Outplicate Error Ratio (normalized absolute difference) Dilution Factor Detection Limit (DoD/DOE) Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample Decision Level Concentration (Radiochemistry) Estimated Detection Limit (Dioxin) Limit of Detectable Activity (Radiochemistry) Minimum Detectable Concentration (Radiochemistry) Minimum Detectable Concentration (Radiochemistry) Minimum Level (Dioxin) Not Detected at the reporting limit (or MDL or EDL if shown) Practical Quantitation Limit Quality Control Relative Error Ratio (Radiochemistry) Restruction Limit or Requested Limit (Radiochemistry) Restructed Error Ratio (Radiochemistry) Restructed Error Ratio (Radiochemistry) Restructed Error Ratio (Radiochemistry) Restructed Error Ratio (Radiochemistry) Restructed Error Ratin (Radiochemistr

TEQ Toxicity Equivalent Quotient (Dioxin)

Job ID: 280-135445-1

Laboratory: Eurofins TestAmerica, Denver

Narrative

CASE NARRATIVE

Client: Aspect Consulting

Project: Hansville Landfill

Report Number: 280-135445-1

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.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Sample Receiving

The samples were received on 04/10/2020; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 0.3° C and 0.7° C.

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 MW12I-040820 was selected to fulfill the laboratory batch quality control requirements for Method 350.1. Analysis of the laboratory generated MS/MSD for this sample exhibited recoveries of Ammonia above the upper 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: 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

Job ID: 280-135445-1 (Continued)

Laboratory: Eurofins TestAmerica, Denver (Continued)

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

Client Sample ID:

Job ID: 280-135445-1

Client Sample ID: MW7-04	40820					Lab Sa	mple ID: 28	3 0-135445 -1
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
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	1.9		1.0		mg/L	1	SM 5310B	Total/NA
lient Sample ID: MW5-04	40820					Lab Sa	mple ID: 28	80-135445-2
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Manganese	1.8		1.0		ug/L	1	6020	Dissolved
Sulfate	7.0		5.0		mg/L	1	300.0	Total/NA
Total Alkalinity	75		10		mg/L	1	SM 2320B	Total/NA
Bicarbonate Alkalinity	75		10		mg/L	1	SM 2320B	Total/NA
lient Sample ID: SW1-04	0820					Lab Sa	mple ID: 28	80-135445-
Analyte		Qualifier	RL	MDL	Unit	Dil Fac		Prep Type
Chloride	3.9		3.0		mg/L		300.0	Total/NA
Sulfate	3.9 8.3				•	•	300.0	Total/NA
			5.0		mg/L	1		
Total Alkalinity	76		10		mg/L	1	SM 2320B	Total/NA
Bicarbonate Alkalinity Total Organic Carbon - Average	76 1.7		10 1.0		mg/L mg/L	1	SM 2320B SM 5310B	Total/NA Total/NA
			1.0		my/∟			
lient Sample ID: MW12I-								80-135445-4
Analyte		Qualifier	RL	MDL			D Method	Prep Type
/inyl chloride	0.085		0.020		ug/L	1	8260C SIM	Total/NA
Manganese	30		1.0		ug/L	1	6020	Dissolved
Fotal Alkalinity	77		10		mg/L	1	SM 2320B	Total/NA
Bicarbonate Alkalinity	77		10		mg/L	1	SM 2320B	Total/NA
Total Organic Carbon - Average	2.5		1.0		mg/L	1	SM 5310B	Total/NA
lient Sample ID: SW4-04	0820					Lab Sa	mple ID: 28	80-135445-
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Manganese	35	·	1.0		ug/L	1	6020	Dissolved
Chloride	12		3.0		mg/L	1	300.0	Total/NA
Sulfate	17		5.0		mg/L	1	300.0	Total/NA
Total Alkalinity	150		10		mg/L	· · · · · · · · · · · · · · · · · · ·	SM 2320B	Total/NA
,	150		10		mg/L	1	SM 2320B	Total/NA
Bicarbonate Alkalinity Total Organic Carbon - Average	7.6		1.0		mg/L	1	SM 2320B SM 5310B	Total/NA
lient Sample ID: SW6-04					J -			80-135445-(
Analyte		Qualifier	RL	MDL	Unit	Dil Fac		Prep Type
Manganese	45				ug/L			Dissolved
Chloride	3.3		3.0		mg/L	1	300.0	Total/NA
Ammonia as N	0.037		0.030		mg/L	1	350.1	Total/NA
	58		10			1	SM 2320B	Total/NA
Total Alkalinity					mg/L	-		
Bicarbonate Alkalinity	58		10		mg/L	1	SM 2320B	Total/NA
Total Organic Carbon - Average	19		1.0		mg/L	1	SM 5310B	Total/NA
lient Sample ID: MW13D	-040820					Lab Sa	mple ID: 28	80-135445-
A	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Analyte Manganese	7.5		1.0		ug/L	1	6020	Dissolved

Detection Summary

Client: Aspect Consulting Project/Site: Hansville Landfill

Client Sample ID: MW13D-040820 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Chloride	4.8		3.0		mg/L	1	300.0	Total/NA
Sulfate	15		5.0		mg/L	1	300.0	Total/NA
Total Alkalinity	82		10		mg/L	1	SM 2320B	Total/NA
Bicarbonate Alkalinity	82		10		mg/L	1	SM 2320B	Total/NA

Client Sample ID: SW7-040820

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Manganese	1.9	1.0	ug/L	1	6020	Dissolved
Chloride	3.2	3.0	mg/L	1	300.0	Total/NA
Sulfate	6.8	5.0	mg/L	1	300.0	Total/NA
Ammonia as N	0.039	0.030	mg/L	1	350.1	Total/NA
Total Alkalinity	60	10	mg/L	1	SM 2320B	Total/NA
Bicarbonate Alkalinity	60	10	mg/L	1	SM 2320B	Total/NA
Total Organic Carbon - Average	8.9	1.0	mg/L	1	SM 5310B	Total/NA

Client Sample ID: MW6-040820

Result Qualifier MDL Unit Dil Fac D Method Analyte RL Prep Type 8260C SIM Vinyl chloride 0.073 0.020 ug/L 1 Total/NA Manganese 400 6020 1.0 ug/L 1 Dissolved Chloride 3.6 3.0 mg/L 1 300.0 Total/NA Sulfate 23 5.0 mg/L 1 300.0 Total/NA **Total Alkalinity** Total/NA 180 10 mg/L SM 2320B 1 **Bicarbonate Alkalinity** 180 10 SM 2320B Total/NA mg/L 1 Total Organic Carbon - Average 1.4 1.0 mg/L 1 SM 5310B Total/NA

Client Sample ID: MW14-040820

Result Qualifier MDL Unit Analyte RL Dil Fac D Method Prep Type Vinyl chloride 0.023 0.020 8260C SIM Total/NA ug/L 1 Manganese 1000 ug/L 6020 Dissolved 1.0 1 Chloride 5.3 3.0 300.0 Total/NA mg/L 1 Sulfate 8.8 5.0 mg/L 1 300.0 Total/NA Total Alkalinity 97 10 SM 2320B Total/NA mg/L 1 **Bicarbonate Alkalinity** 97 10 mg/L SM 2320B Total/NA 1 Total Organic Carbon - Average 2.1 1.0 mg/L 1 SM 5310B Total/NA

Client Sample ID: MW20DD-040820

Lab Sample ID: 280-135445-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.023		0.020		ug/L	1	_	8260C SIM	Total/NA
Manganese	1000		1.0		ug/L	1		6020	Dissolved
Chloride	4.1		3.0		mg/L	1		300.0	Total/NA
Sulfate	8.5		5.0		mg/L	1		300.0	Total/NA
Ammonia as N	0.032		0.030		mg/L	1		350.1	Total/NA
Total Alkalinity	96		10		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity	96		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: TB1						Lab Sa	mp	ole ID: 280	-135445-12

No Detections.

This Detection Summary does not include radiochemical test results.

Job ID: 280-135445-1

Lab Sample ID: 280-135445-7

Lab Sample ID: 280-135445-8

Lab Sample ID: 280-135445-9

Lab Sample ID: 280-135445-10

Method Summary

Client: Aspect Consulting Project/Site: Hansville Landfill

lethod	Method Description	Protocol	Laboratory
3260C 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

ab Sample ID	Client Sample ID	Matrix	Collected	Received	Asse
80-135445-1	MW7-040820	Water	04/08/20 08:45	04/10/20 08:30	
80-135445-2	MW5-040820	Water	04/08/20 09:55	04/10/20 08:30	
80-135445-3	SW1-040820	Water	04/08/20 10:50	04/10/20 08:30	
80-135445-4	MW12I-040820	Water	04/08/20 11:25	04/10/20 08:30	
80-135445-5	SW4-040820	Water	04/08/20 11:30	04/10/20 08:30	
80-135445-6	SW6-040820	Water	04/08/20 12:10	04/10/20 08:30	
80-135445-7	MW13D-040820	Water	04/08/20 12:40	04/10/20 08:30	
80-135445-8	SW7-040820	Water	04/08/20 13:40	04/10/20 08:30	
80-135445-9	MW6-040820	Water	04/08/20 15:00	04/10/20 08:30	
80-135445-10	MW14-040820	Water	04/08/20 15:13	04/10/20 08:30	
80-135445-11	MW20DD-040820	Water	04/08/20 00:00	04/10/20 08:30	
80-135445-12	TB1	Water	04/08/20 00:00	04/10/20 08:30	

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

Client Sample ID: MW7-040820							Lab Sam	ple ID: 280-13	
Date Collected: 04/08/20 08:45								Matrix	: Water
Date Received: 04/10/20 08:30 Analyte	Posult	Qualifier	RL	МПІ	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND	Quaimer	0.020		ug/L		Fiepaleu	04/14/20 17:21	1
	ND		0.020		ug/L			04/14/20 11.21	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	117		50 - 150			_		04/14/20 17:21	1
TBA-d9 (Surr)	96		50 - 150					04/14/20 17:21	1
Client Sample ID: MW5-040820							Lab Sam	ple ID: 280-13	35445-2
Date Collected: 04/08/20 09:55								Matrix	: Water
Date Received: 04/10/20 08:30									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/14/20 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	118		50 - 150			-		04/14/20 17:46	1
TBA-d9 (Surr)	109		50 - 150					04/14/20 17:46	1
Client Sample ID: SW1-040820							Lah Sam	ple ID: 280-13	85445-3
Date Collected: 04/08/20 10:50							Lub Our	•	: Water
Date Received: 04/10/20 08:30								Matrix	. Water
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/14/20 18:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	110		50 - 150			-	riopurou	$\frac{1}{04/14/20}$ 18:10	1
TBA-d9 (Surr)	77		50 - 150					04/14/20 18:10	1
Client Sample ID: MW12I-04082 Date Collected: 04/08/20 11:25	20						Lab Sam	ple ID: 280-13 Matrix	35445-4 : Water
Date Received: 04/10/20 08:30								Wattin	. Water
Analyte	Result	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.085		0.020		ug/L		Tiopulou	04/14/20 18:34	1
					-9-				
Surrogate	%Recovery	Qualifier	Limits			_	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	120		50 - 150					04/14/20 18:34	1
TBA-d9 (Surr)	111		50 - 150					04/14/20 18:34	1
Client Sample ID: SW4-040820							Lab Sam	ple ID: 280-13	35445-5
Date Collected: 04/08/20 11:30								Matrix	: Water
Date Received: 04/10/20 08:30									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020		ug/L			04/14/20 18:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
	107		50 - 150			-		04/14/20 18:59	1
Dibromofluoromethane (Surr)			50 - 150					04/14/20 18:59	1
Dibromofluoromethane (Surr) TBA-d9 (Surr)	67		50 - 150						
TBA-d9 (Surr)	67		50 - 150				Lab Sam	nple ID: 280-13	35445-6
TBA-d9 (Surr) Client Sample ID: SW6-040820 Date Collected: 04/08/20 12:10	67		50 - 150				Lab Sam	ple ID: 280-13 Matrix	
TBA-d9 (Surr) Client Sample ID: SW6-040820		Qualifier	50 - 150 RL	мли	Unit	D	Lab Sarr		35445-6 : Water Dil Fac

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Client Sample Results

Job ID: 280-135445-1

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

%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
111		50 - 150			-		04/14/20 19:23	1
77		50 - 150					04/14/20 19:23	1
20						Lab Sam	ple ID: 280-13	5445-7
								Water
	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.020		ug/L			04/14/20 19:48	1
% Decenter	Qualifian	Limita				Droporod	Analyzad	Dil Fac
	Quaimer				-	Prepareu	•	1 DII Fac
								1
15		00 - 700					04/14/20 13:40	,
						Lab Sam	nole ID: 280-13	5445-8
							•	Water
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.020		ug/L			04/14/20 20:12	1
•	Qualifier					Prepared	-	Dil Fac
								1
87		50 - 150					04/14/20 20:12	1
						Lab Sam	nio ID: 290 42	5445 0
						Lap Sali	·	
							Watt IX.	. Water
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
		0.020					04/14/20 20:37	1
				0				
•	Qualifier	Limits				Prepared	Analyzed	Dil Fac
114		50 - 150					04/14/20 20:37	1
82		50 - 150					04/14/20 20:37	1
•								
U						Lab Samp		
							watrix	water
Result	Qualifier	RI	МП	Unit	п	Prepared	Analyzod	Dil Fac
	Quanner					Tepared	•	1
0.020		0.020		ug/L			0 11 11 20 21:01	·
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
111		50 - 150			-		04/14/20 21:01	1
81		50 - 150					04/14/20 21:01	1
)820						Lab Samp		
							Matrix	water
Deerit	Qualifier	ы		Unit	~	Dronorod	Analyzed	
Result	Qualifier	RL 0.020	MDL	Unit ug/L	D	Prepared	Analyzed 04/14/20 21:26	Dil Fac
				UU/L			U4/14/20 21 26	1
0.023		0.020		3			0 // / // 20 2 1.20	
0.023	Qualifier	Limits		- 3		Prepared		Dil Fac
	Qualifier			-3-	-	Prepared	Analyzed	Dil Fac
	77 320 Result ND %Recovery 110 79 Result ND %Recovery 112 87 %Recovery 112 87 0.073 %Recovery 114 82 0 Result 0.023 %Recovery 111	77 820 QualifierNDQualifierNDQualifier 110 Qualifier 110 Qualifier 110 Qualifier 110 Qualifier 110 Qualifier 112 87 87 Qualifier 112 87 87 Qualifier 112 87 87 Qualifier 114 82 10 Qualifier 114 82 114 82 111 81	77 $50 - 150$ S20 Result Qualifier RL ND 0.020 0.020 %Recovery Qualifier Limits 110 50 - 150 79 50 - 150 Kesult Qualifier RL ND 0.020 %Recovery Qualifier Limits 112 50 - 150 87 50 - 150 87 50 - 150 87 Documentation Result Qualifier Limits 0.073 0.020 %Recovery Qualifier Limits 114 50 - 150 82 50 - 150 50 50 - 150 82 50 - 150 00 0.023 Result Qualifier Limits 0.023 0.020 %Recovery Qualifier Limits 0.023 0.020 %Recovery Qualifier Limits 111 50 - 150 81 50 - 150	77 $50 - 150$ S20 Result Qualifier RL MDL ND 0.020 MDL \sqrt{ND} Qualifier Limits MDL 110 $50 - 150$ 50 - 150 MDL $\sqrt{Recovery}$ Qualifier Limits MDL 0.020 $50 - 150$ $50 - 150$ $50 - 150$ 0 0.023 0.020 MDL $\sqrt{Recovery}$ Qualifier Limits MDL 0.023 0.020 0.020 0.020 0.020 $\sqrt{Recovery}$ Qualifier RL MDL 0.020 0.020 0.020 $\sqrt{Recovery}$ Qualifier $100 - 150$ $50 - $	77 50.150 320ResultQualifierRLMDLUnitNDQualifierLimits 110 50.150 79 50.150 79 50.150 ResultQualifierLimits 110 50.150 79 50.150 87 50.150 87 50.150 87 50.150 87 50.150 9 112 50.150 9 112 50.150 9 112 50.150 9 114 114 92 50.150 90 114 114 9.023 0.020 MDL Unit 91 111 50.150 111 111 50.150 81 50.150 50.150	7750 - 150S20ResultQualifierRLMDLUnitD ND 0.020 ug/L D%RecoveryQualifierLimits110 $50 - 150$ $50 - 150$ 79 $50 - 150$ ug/L D%RecoveryQualifierLimits112 $50 - 150$ ug/L D 87 $50 - 150$ ug/L D%RecoveryQualifierLimits112 $50 - 150$ ug/L D $g/Recovery$ QualifierLimitsD 114 $50 - 150$ $50 - 150$ ug/L D 0 0.023 0.020 ug/L D 111 $50 - 150$ $50 - 150$ 81 $50 - 150$ $50 - 150$	7750.150320Lab SamResult NDQualifierRL 0.020MDL ug/LUnit ug/LD Prepared%Recovery 110Qualifier 50.150Limits 50.150Prepared%Result NDQualifier 50.150Limits PreparedPrepared%Recovery 112Qualifier 50.150Limits 90.020Prepared%Recovery 112Qualifier 50.150Limits 90.150Prepared%Recovery 0.073Qualifier 0.020Limits 90.150Prepared%Recovery 114Qualifier 50.150RL 50.150MDL 90.150Unit 90.150D 90Result 0.023Qualifier 0.023Limits 0.020PreparedPrepared%Recovery 0Qualifier 0.023Limits 0.020PreparedPrepared%Recovery 111Qualifier 50.150RL 0.020MDL 90Unit 90D 90Prepared%Recovery 111Qualifier 50.150Limits 50.150PreparedPrepared%Recovery 111Qualifier 50.150Limits 50.150Prepared	77 50.150 04/14/20 19:23 B20 Lab Sample ID: 280-13 Matrix Result ND Qualifier 100 RL 50.150 MDL Unit UgL D Prepared Prepared Analyzed 04/14/20 19:48 %Recovery 110 Qualifier 50.150 Limits 50.150 Prepared Analyzed 04/14/20 19:48 %Recovery 110 Qualifier 50.150 Limits 0.020 Prepared Analyzed 04/14/20 19:48 %Recovery ND Qualifier 0.020 RL MDL Unit Ug/L D Prepared Analyzed 04/14/20 20:12 %Recovery 112 Qualifier 50.150 Limits 50.150 Prepared Analyzed 04/14/20 20:12 %Recovery 0.073 Qualifier 0.073 Limits 50.150 Prepared Analyzed 04/14/20 20:37 %Recovery 0.073 Qualifier 0.020 RL MDL Unit Ug/L D Prepared Analyzed 04/14/20 20:37 %Recovery 0.023 Qualifier 0.020 Limits 50.150 Prepared Analyzed 04/14/20 20:37 0 Lab Sample ID: 280-1350 Prepared Analyzed 04/14/20 20:37 04/14/20 20:37 0 Lab Sample ID: 280-1350

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

Client Sample ID: TB1 Date Collected: 04/08/20 00:00						Lab Sample ID: 280-135445-1 Matrix: Wate
Date Received: 04/10/20 08:30						
Analyte	Rosult	Qualifier	RL	MDL	Unit	D Prepared Analyzed Dil Fa
Vinyl chloride	ND		0.020		ug/L	
					U	
•	%Recovery	Qualifier	Limits			Prepared Analyzed Dil Fa
Dibromofluoromethane (Surr)	116		50 - 150			04/14/20 21:51
TBA-d9 (Surr)	80		50 - 150			04/14/20 21:51
Method: 6020 - Metals (ICP/	MS) - Di	ssolved				
Client Sample ID: MW7-040820						Lab Sample ID: 280-135445-
Date Collected: 04/08/20 08:45						Matrix: Wate
Date Received: 04/10/20 08:30						
Analyte	Result	Qualifier	RL	MDL	Unit	D Prepared Analyzed Dil Fa
Manganese	ND		1.0		ug/L	04/15/20 14:55 04/16/20 12:09
Client Sample ID: MW5-040820						Lab Sample ID: 280-135445-
Date Collected: 04/08/20 09:55						Matrix: Wate
Date Received: 04/10/20 08:30		_				
Analyte		Qualifier	RL	MDL		D Prepared Analyzed Dil Fa
Manganese	1.8		1.0		ug/L	04/15/20 14:55 04/16/20 12:27
Client Sample ID: SW1-040820						Lab Sample ID: 280-135445-
Date Collected: 04/08/20 10:50						Matrix: Wate
Date Received: 04/10/20 08:30						
Analyte	Result	Qualifier	RL	MDL	Unit	D Prepared Analyzed Dil Fa
Manganese	ND		1.0		ug/L	<u></u>
Client Sample ID: MW12I-04082	J					Lab Sample ID: 280-135445-
Date Collected: 04/08/20 11:25						Matrix: Wate
Date Received: 04/10/20 08:30						
Analyte	Result 30	Qualifier		MDL	Unit ug/L	Dil Fa
Manganese	30		1.0		ug/L	04/13/20 14:35 04/10/20 12:34
Client Sample ID: SW4-040820						Lab Sample ID: 280-135445-
Date Collected: 04/08/20 11:30						Matrix: Wate
Date Received: 04/10/20 08:30						
Analyte	Result	Qualifier	RL	MDL	Unit	D Prepared Analyzed Dil Fa
Manganese	35		1.0		ug/L	04/15/20 14:55 04/16/20 12:45
Client Comple ID: 014/0 040000						Lob Comple ID: 000 405445
Client Sample ID: SW6-040820						Lab Sample ID: 280-135445-
Date Collected: 04/08/20 12:10						Matrix: Wate
Date Received: 04/10/20 08:30	D ! !	0			11	D. Durand Analysid Dillo
Analyte		Qualifier	RL	MDL		D Prepared Analyzed Dil Fa
Manganese	45		1.0		ug/L	04/15/20 14:55 04/16/20 12:48
Client Sample ID: MW13D-04082	20					Lab Sample ID: 280-135445-
Date Collected: 04/08/20 12:40						Matrix: Wate
Date Received: 04/10/20 08:30						
Analyte	Result	Qualifier	RL	MDL	Unit	D Prepared Analyzed Dil Fa
Manganese	7.5		1.0		ug/L	04/15/20 14:55 04/16/20 12:52

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

Client Sample ID: SW7-040820 Date Collected: 04/08/20 13:40 Date Received: 04/10/20 08:30							Lab Sam	ple ID: 280-13 Matrix:	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1.9		1.0		ug/L		•	04/16/20 12:55	1
Client Sample ID: MW6-040820 Date Collected: 04/08/20 15:00 Date Received: 04/10/20 08:30							Lab Sam	ple ID: 280-13 Matrix:	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	400		1.0	;	ug/L		04/15/20 14:55	04/16/20 12:59	1
Client Sample ID: MW14-040820 Date Collected: 04/08/20 15:13 Date Received: 04/10/20 08:30							Lab Samp	le ID: 280-135 Matrix:	
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Manganese	1000		1.0		ug/L		04/15/20 14:55	04/16/20 13:02	1
Client Sample ID: MW20DD-040820 Date Collected: 04/08/20 00:00 Date Received: 04/10/20 08:30)						Lab Samp	le ID: 280-135 Matrix:	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1000		1.0		ug/L		04/15/20 14:55	04/16/20 13:06	1
Analyte Chloride Sulfate Ammonia as N Total Alkalinity Bicarbonate Alkalinity Carbonate Alkalinity Total Organic Carbon - Average	Result ND ND 130 130 ND 1.9	Qualifier _	RL 3.0 5.0 0.030 10 10 10 10 10	MDL	Unit mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	Prepared	Analyzed 04/21/20 02:46 04/16/20 13:46 04/16/20 13:45 04/15/20 14:45 04/15/20 14:45 04/15/20 05:03	Dil Fac
Client Sample ID: MW5-040820 Date Collected: 04/08/20 09:55							Lab Sam	ple ID: 280-13 Matrix:	
Date Received: 04/10/20 08:30					Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier	RL	MDL	0				1
Analyte	Result ND	Qualifier	RL 3.0	MDL	mg/L			04/21/20 03:03	
Analyte Chloride		Qualifier	3.0 5.0	MDL				04/21/20 03:03 04/21/20 03:03	1
Analyte Chloride Sulfate	ND	Qualifier	3.0	MDL	mg/L				-
Analyte Chloride Sulfate Ammonia as N	ND 7.0	Qualifier _	3.0 5.0	MDL	mg/L mg/L			04/21/20 03:03	1
Analyte Chloride Sulfate Ammonia as N Total Alkalinity	ND 7.0 ND	Qualifier _	3.0 5.0 0.030	MDL	mg/L mg/L mg/L			04/21/20 03:03 04/16/20 13:48	1
Analyte Chloride Sulfate Ammonia as N Total Alkalinity Bicarbonate Alkalinity Carbonate Alkalinity	ND 7.0 ND 75 75 ND	Qualifier _	3.0 5.0 0.030 10 10 10	MDL	mg/L mg/L mg/L mg/L mg/L mg/L	_ _		04/21/20 03:03 04/16/20 13:48 04/15/20 14:49 04/15/20 14:49 04/15/20 14:49	1 1 1 1
Analyte Chloride Sulfate Ammonia as N Total Alkalinity Bicarbonate Alkalinity Carbonate Alkalinity	ND 7.0 ND 75 75	Qualifier _	3.0 5.0 0.030 10 10	MDL	mg/L mg/L mg/L mg/L mg/L	 		04/21/20 03:03 04/16/20 13:48 04/15/20 14:49 04/15/20 14:49	1 1 1 1
Analyte Chloride Sulfate Ammonia as N Total Alkalinity Bicarbonate Alkalinity Carbonate Alkalinity Total Organic Carbon - Average Client Sample ID: SW1-040820 Date Collected: 04/08/20 10:50	ND 7.0 ND 75 75 ND	Qualifier	3.0 5.0 0.030 10 10 10	MDL	mg/L mg/L mg/L mg/L mg/L mg/L		Lab Sam	04/21/20 03:03 04/16/20 13:48 04/15/20 14:49 04/15/20 14:49 04/15/20 14:49	1 1 1 1 1 5 445-3
Date Received: 04/10/20 08:30 Analyte Chloride Sulfate Ammonia as N Total Alkalinity Bicarbonate Alkalinity Carbonate Alkalinity Total Organic Carbon - Average Client Sample ID: SW1-040820 Date Collected: 04/08/20 10:50 Date Received: 04/10/20 08:30 Analyte	ND 7.0 ND 75 75 ND ND	Qualifier	3.0 5.0 0.030 10 10 10	MDL	mg/L mg/L mg/L mg/L mg/L mg/L		Lab Sam Prepared	04/21/20 03:03 04/16/20 13:48 04/15/20 14:49 04/15/20 14:49 04/15/20 14:49 04/15/20 14:49 04/16/20 05:49	

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General Chemistry (Continued)

Client Sample ID: SW1-040820 Date Collected: 04/08/20 10:50							Lab San	nple ID: 280-13 Matrix	5445-3 Water
Date Received: 04/10/20 08:30 Analyte	Result	Qualifier	RL	МОІ	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	8.3		5.0		mg/L		Tiepuleu	04/21/20 03:21	1
Ammonia as N	ND		0.030		mg/L			04/16/20 13:50	1
Total Alkalinity	76		10		mg/L			04/15/20 14:54	
-	76		10		mg/L			04/15/20 14:54	1
Bicarbonate Alkalinity Carbonate Alkalinity	ND		10		mg/L			04/15/20 14:54	1
Total Organic Carbon - Average	1.7		1.0		mg/L			04/16/20 06:05	1
Client Sample ID: MW12I-040820							Lah Sam	ple ID: 280-13	5445-4
Date Collected: 04/08/20 11:25									Water
Date Received: 04/10/20 08:30									····
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	· · · · · · · · · · · · · · · · · · ·	3.0		mg/L		•	04/21/20 03:38	1
Sulfate	ND		5.0		mg/L			04/21/20 03:38	1
Ammonia as N		F1	0.030		mg/L			04/16/20 13:52	1
Total Alkalinity	77		10		mg/L			04/15/20 14:59	
Bicarbonate Alkalinity	77		10		mg/L			04/15/20 14:59	1
Carbonate Alkalinity	ND		10		mg/L			04/15/20 14:59	1
Total Organic Carbon - Average	2.5		1.0		mg/L			04/16/20 06:28	1
Client Sample ID: SW4-040820							Lab Sam	ple ID: 280-13	5445-5
Date Collected: 04/08/20 11:30								•	Water
Date Received: 04/10/20 08:30	Beault	Qualifian	RL	MDI	11	D	Drenered	Anolymod	
Analyte		Qualifier		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		3.0		mg/L			04/21/20 05:06	•
Sulfate	17		5.0		mg/L			04/21/20 05:06	1
Ammonia as N	ND		0.030		mg/L			04/16/20 14:10	1
Total Alkalinity	150		10		mg/L			04/15/20 15:04	1
Bicarbonate Alkalinity	150		10		mg/L			04/15/20 15:04	1
Carbonate Alkalinity	ND		10		mg/L			04/15/20 15:04	1
Total Organic Carbon - Average	7.6		1.0		mg/L			04/16/20 06:43	1
Client Sample ID: SW6-040820 Date Collected: 04/08/20 12:10							Lab San	ple ID: 280-13 Motrix	5445-6 Water
Date Received: 04/10/20 08:30								Watrix	valer
Analyte		Qualifier	RL 3.0	MDL		D	Prepared	Analyzed	Dil Fac
Chloride	3.3				mg/L			04/21/20 05:23	1
Sulfate	ND		5.0		mg/L			04/21/20 05:23	1
Ammonia as N	0.037		0.030		mg/L			04/16/20 14:12	1
Total Alkalinity	58		10		mg/L			04/15/20 15:08	1
Bicarbonate Alkalinity	58		10		mg/L			04/15/20 15:08	1
Carbonate Alkalinity	ND		10		mg/L			04/15/20 15:08	1
Total Organic Carbon - Average	19		1.0		mg/L			04/16/20 07:00	1
Client Sample ID: MW13D-040820							Lab San	ple ID: 280-13	
Date Collected: 04/08/20 12:40								Matrix	Water
Date Received: 04/10/20 08:30	Desult	Qualifier		MO	l lmit	-			
Analyte		Qualifier		MDL		D	Prepared	Analyzed	Dil Fac
Chloride	4.8		3.0		mg/L			04/21/20 05:41	1
Sulfate	15		5.0		mg/L			04/21/20 05:41	1
Ammonia as N	ND		0.030		mg/L			04/16/20 14:14	1

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General Chemistry (Continued)

Client Sample ID: MW13D-0408 Date Collected: 04/08/20 12:40 Date Received: 04/10/20 08:30	20						Lab Sam	ple ID: 280-13 Matrix	5445-7 Water
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	82		10		mg/L			04/15/20 15:13	1
Bicarbonate Alkalinity	82		10		mg/L			04/15/20 15:13	1
Carbonate Alkalinity	ND		10		mg/L			04/15/20 15:13	1
Total Organic Carbon - Average	ND		1.0		mg/L			04/16/20 07:15	1
Client Sample ID: SW7-040820							Lab Sam	ple ID: 280-13	
Date Collected: 04/08/20 13:40 Date Received: 04/10/20 08:30		Qualifian	DI DI				Durante d	Matrix	Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.2		3.0		mg/L			04/21/20 05:58	1
Sulfate	6.8		5.0		mg/L			04/21/20 05:58	1
Ammonia as N	0.039		0.030		mg/L			04/16/20 14:16	1
Total Alkalinity	60		10		mg/L			04/15/20 15:18	1
Bicarbonate Alkalinity	60		10		mg/L			04/15/20 15:18	1
Carbonate Alkalinity	ND		10		mg/L			04/15/20 15:18	1
Total Organic Carbon - Average	8.9		1.0		mg/L			04/16/20 07:29	1

Client Sample ID: MW6-040820 Date Collected: 04/08/20 15:00

Date	oonected.	04/00/20	10.00
Date	Received:	04/10/20	08:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		3.0		mg/L			04/21/20 06:16	1
Sulfate	23		5.0		mg/L			04/21/20 06:16	1
Ammonia as N	ND		0.030		mg/L			04/16/20 14:18	1
Total Alkalinity	180		10		mg/L			04/15/20 15:23	1
Bicarbonate Alkalinity	180		10		mg/L			04/15/20 15:23	1
Carbonate Alkalinity	ND		10		mg/L			04/15/20 15:23	1
Total Organic Carbon - Average	1.4		1.0		mg/L			04/16/20 08:16	1

Client Sample ID: MW14-040820 Date Collected: 04/08/20 15:13

Date	Received:	04/10/20	08:30

Client Sample ID: MW20DD-040820

Date Collected: 04/08/20 00:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.3		3.0		mg/L			04/21/20 06:33	1
Sulfate	8.8		5.0		mg/L			04/21/20 06:33	1
Ammonia as N	ND		0.030		mg/L			04/16/20 14:20	1
Total Alkalinity	97		10		mg/L			04/15/20 15:28	1
Bicarbonate Alkalinity	97		10		mg/L			04/15/20 15:28	1
Carbonate Alkalinity	ND		10		mg/L			04/15/20 15:28	1
Total Organic Carbon - Average	2.1		1.0		mg/L			04/16/20 08:34	1

Lab Sample ID: 280-135445-11 Matrix: Water

Lab Sample ID: 280-135445-9

Lab Sample ID: 280-135445-10

Matrix: Water

Matrix: Water

Date Received: 04/10/20 08:30									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1		3.0		mg/L			04/21/20 06:51	1
Sulfate	8.5		5.0		mg/L			04/21/20 06:51	1
Ammonia as N	0.032		0.030		mg/L			04/16/20 14:22	1
Total Alkalinity	96		10		mg/L			04/15/20 15:58	1
Bicarbonate Alkalinity	96		10		mg/L			04/15/20 15:58	1

General Chemistry (Continued)

Client Sample ID: MW20DD-040 Date Collected: 04/08/20 00:00 Date Received: 04/10/20 08:30	820						Lab Samp	ole ID: 280-135 Matrix:	5445-11 : Water
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbonate Alkalinity	ND		10		mg/L		_	04/15/20 15:58	1
Total Organic Carbon - Average	2.3		1.0		mg/L			04/15/20 19:10	1

Surrogate Summary

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

Prep	Type:	Total/NA

-			P	ercent Surrogate Recovery (Acceptance Limits)	
		DBFM	TBA		
Lab Sample ID	Client Sample ID	(50-150)	(50-150)		
280-135445-1	MW7-040820	117	96		
280-135445-2	MW5-040820	118	109		
280-135445-3	SW1-040820	110	77		
280-135445-4	MW12I-040820	120	111		
280-135445-5	SW4-040820	107	67		
280-135445-6	SW6-040820	111	77		
280-135445-7	MW13D-040820	110	79		
280-135445-8	SW7-040820	112	87		
280-135445-9	MW6-040820	114	82		
280-135445-10	MW14-040820	111	81		
280-135445-11	MW20DD-040820	111	82		
280-135445-12	TB1	116	80		
LCS 480-525766/6	Lab Control Sample	104	101		
LCSD 480-525766/7	Lab Control Sample Dup	102	93		
MB 480-525766/9	Method Blank	117	86		
Surrogate Legend					
DBFM = Dibromofluor	omethane (Surr)				
TBA = TBA-d9 (Surr)					

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

Lab Sample ID: MB 480-5 Matrix: Water	525766/9								Clie	ent Sam	ple ID: Me Prep Typ		
Analysis Batch: 525766											- F - 7 F		
-		MB MB	\$										
Analyte	Re	sult Qu	alifier	RL		MDL	Unit	[) P	repared	Analyze	d	Dil Fa
Vinyl chloride		ND		0.020)		ug/L				04/14/20 1	2:36	
		МВ МВ	}										
Surrogate	%Reco	very Qu	alifier	Limits					P	repared	Analyze	d	Dil Fa
Dibromofluoromethane (Surr)		117		50 - 150	-						04/14/20 1		-
TBA-d9 (Surr)		86		50 - 150							04/14/20 1	2:36	
Lab Sample ID: LCS 480- Matrix: Water	525766/6							Clie	nt Sar	nple ID	: Lab Cont Prep Type		
Analysis Batch: 525766													
-				Spike	LCS	LCS					%Rec.		
Analyte				Added	Result	Qua	lifier	Unit	D	%Rec	Limits		
Vinyl chloride				0.200	0.210			ug/L		105	50 - 150		
	LCS	LCS											
Surrogate	%Recovery		r	Limits									
Dibromofluoromethane (Surr)	104			50 - 150									
TBA-d9 (Surr)	101			50 - 150									
Analyte Vinyl chloride				Spike Added 0.200	LCSD Result 0.197			Unit ug/L	D	%Rec	%Rec. Limits 50 - 150	RPD 6	RPI Limi 2
	LCSD	LCSD											
Surrogate	%Recovery												
			r	Limits									
Dibromofluoromethane (Surr)	102		er	Limits 50 - 150									
	-		er										
TBA-d9 (Surr)	102 93		er	50 - 150									
TBA-d9 (Surr) Nethod: 6020 - Metals	102 93 (ICP/MS)		er	50 - 150					Clie	ent Sam	ple ID: Me	thod	Blan
TBA-d9 (Surr)	102 93 (ICP/MS)		er	50 - 150							ple ID: Me be: Total R		
TBA-d9 (Surr) Aethod: 6020 - Metals Lab Sample ID: MB 280-4	102 93 (ICP/MS)		er	50 - 150							ple ID: Me be: Total R Prep Bat	ecov	erabl
TBA-d9 (Surr) Method: 6020 - Metals Lab Sample ID: MB 280-4 Matrix: Water	102 93 (ICP/MS)	MB MB		50 - 150 50 - 150							e: Total R	ecov	erabl
TBA-d9 (Surr) Aethod: 6020 - Metals Lab Sample ID: MB 280-4 Matrix: Water Analysis Batch: 492165 Analyte	102 93 6 (ICP/MS) 91630/1-A	MB MB	3	50 - 150 50 - 150 RL		MDL	Unit		P D P	rep Typ repared	e: Total R Prep Bat Analyze	ecovo ch: 4 d	erabl 9163
TBA-d9 (Surr) Method: 6020 - Metals Lab Sample ID: MB 280-4 Matrix: Water Analysis Batch: 492165 Analyte	102 93 6 (ICP/MS) 91630/1-A	MB MB	3	50 - 150 50 - 150		MDL	Unit ug/L	[P D P	rep Typ repared	be: Total R Prep Bat	ecovo ch: 4 d	erabl 9163 Dil Fa
TBA-d9 (Surr) Aethod: 6020 - Metals Lab Sample ID: MB 280-4 Matrix: Water Analysis Batch: 492165 Analyte Manganese	102 93 6 (ICP/MS) 91630/1-A Re	MB MB	3	50 - 150 50 - 150 RL		MDL			P D P 04/1	repared 5/20 14:5	De: Total R Prep Bat Analyze	ecove ch: 4 d 2:02	erabl 9163 Dil Fa
TBA-d9 (Surr) Aethod: 6020 - Metals Lab Sample ID: MB 280-4 Matrix: Water Analysis Batch: 492165 Analyte	102 93 6 (ICP/MS) 91630/1-A Re	MB MB	3	50 - 150 50 - 150 RL		MDL			P <u>0</u> P 04/1 nt Sar	rep Typ repared 5/20 14:5 mple ID	De: Total R Prep Bat Analyze 5 04/16/20 1 : Lab Cont	ecove ch: 4 d 2:02	erabl 9163 Dil Fa ampl
TBA-d9 (Surr) Method: 6020 - Metals Lab Sample ID: MB 280-4 Matrix: Water Analysis Batch: 492165 Analyte Manganese Lab Sample ID: LCS 280- Matrix: Water	102 93 6 (ICP/MS) 91630/1-A Re	MB MB	3	50 - 150 50 - 150 RL		MDL			P <u>0</u> P 04/1 nt Sar	rep Typ repared 5/20 14:5 mple ID	Analyze 5 04/16/20 1 2 Lab Cont be: Total R	d 2:02 rol Sa	erabl 9163 Dil Fa ample erabl
TBA-d9 (Surr) Method: 6020 - Metals Lab Sample ID: MB 280-4 Matrix: Water Analysis Batch: 492165 Analyte Manganese Lab Sample ID: LCS 280-	102 93 6 (ICP/MS) 91630/1-A Re	MB MB	3	50 - 150 50 - 150 RL	j ———	MDL	ug/L		P <u>0</u> P 04/1 nt Sar	rep Typ repared 5/20 14:5 mple ID	De: Total R Prep Bat Analyze 5 04/16/20 1 : Lab Cont	d 2:02 rol Sa	erable 9163 Dil Fa ample erable
TBA-d9 (Surr) Aethod: 6020 - Metals Lab Sample ID: MB 280-4 Matrix: Water Analysis Batch: 492165 Analyte Manganese Lab Sample ID: LCS 280- Matrix: Water	102 93 6 (ICP/MS) 91630/1-A Re	MB MB	3	50 - 150 50 - 150 	j ———	LCS	ug/L		P <u>0</u> P 04/1 nt Sar	rep Typ repared 5/20 14:5 mple ID	Analyze 5 04/16/20 11 2 Lab Cont Prep Bat	d 2:02 rol Sa	erable 9163 Dil Fa ample erable

5 6

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

Lab Sample ID: 280-135445-	1 MS										Cli		mple ID: N		
Matrix: Water													Prep Type		
Analysis Batch: 492165	Sample	Sam	nlo	Spike		MS	MS						Prep Ba %Rec.	itch: 4	9163
Analyte	Result		•	Added		Result		lifior	Unit		D	%Rec	Limits		
Manganese	ND	Qua		40.0		41.0	Gut		ug/L		_	101	85 - 117		
									- 3. –						
Lab Sample ID: 280-135445- Matrix: Water	1 MSD										Cli		mple ID: M Prep Type		
Analysis Batch: 492165													Prep Ba	atch: 4	9163
	Sample	Sam	ple	Spike		MSD	MSI	D					%Rec.		RP
Analyte	Result	Qua	lifier	Added		Result	Qua	alifier	Unit		D	%Rec	Limits	RPD	Lim
Manganese	ND			40.0		42.0			ug/L			104	85 - 117	2	2
lethod: 300.0 - Anions, I	lon Chro	ma	atograp	hy											
Lab Sample ID: MB 280-4921	91/6									c	lie	nt Sam	ple ID: M	ethod	Blan
Matrix: Water											_		Prep Ty		
Analysis Batch: 492191															
		MB	MB												
Analyte			Qualifier		RL		MDL	Unit		D	Pr	repared	Analyz		Dil Fa
Chloride		ND			3.0			mg/L					04/20/20		
Sulfate		ND			5.0			mg/L					04/20/20	10:44	
Lab Sample ID: MB 280-4921 Matrix: Water	91/68									C	lie	nt Sam	ple ID: M Prep Ty		
Analysis Batch: 492191															
-		MB	MB												
Analyte	Res	sult	Qualifier		RL	I	MDL	Unit		D	Pr	epared	Analyz	zed	Dil Fa
Chloride		ND			3.0			mg/L					04/21/20	04:48	
Sulfate		ND			5.0			mg/L					04/21/20	04:48	
Lab Sample ID: LCS 280-492 Matrix: Water	191/4								Cli	ent S	San	nple ID	: Lab Cor Prep Ty		
Analysis Batch: 492191															
-				Spike		LCS	LCS	3					%Rec.		
Analyte				Added		Result	Qua	alifier	Unit		D	%Rec	Limits		
Chloride				100		94.6			mg/L			95	90 - 110		
Sulfate				100		94.5			mg/L			94	90 - 110		
Lab Sample ID: LCS 280-492	191/67								Cli	ent S	San	nple ID	: Lab Cor		
Matrix: Water													Prep Ty	pe: 10	iai/N
Analysis Batch: 492191				Spike		LCS	LCS	6					%Rec.		
				Added		Result			Unit		D	%Rec	Limits		
Analyte				100		98.2			mg/L		_	98	90 - 110		
-				100					mg/L			99	90 - 110		
Chloride				100		98.9			-						
Chloride Sulfate	92191/5					98.9		C	lient S	amr	le	ID: Lat	Control	Samnl	e Du
Chloride Sulfate Lab Sample ID: LCSD 280-49	92191/5					98.9		С	lient S	amp	le	ID: Lat	Control		
Chloride Sulfate Lab Sample ID: LCSD 280-49 Matrix: Water	92191/5					98.9		C	lient S	amp	le	ID: Lat	Control Prep Ty		
Chloride Sulfate Lab Sample ID: LCSD 280-49 Matrix: Water	92191/5					98.9 LCSD	LCS		lient S	amp	le	ID: Lat			tal/N
Analyte Chloride Sulfate Lab Sample ID: LCSD 280-49 Matrix: Water Analysis Batch: 492191 Analyte	92191/5			100				SD	Unit	amp	D	ID: Lat %Rec	Prep Ty		
Chloride Sulfate Lab Sample ID: LCSD 280-49 Matrix: Water Analysis Batch: 492191	92191/5			100 Spike		LCSD	Qua	SD		amp			Prep Tyj %Rec.	pe: To	tal/N/

MRL MRL

4.51

ND

Result Qualifier

Unit

mg/L

mg/L

Spike

Added

5.00

5.00

Analysis Batch: 492191

Matrix: Water

Analyte

Chloride

Sulfate

Lab Sample ID: MRL 280-492191/3

Method: 300.0 - Anions, Ion Chromatography (Continued)

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

D %Rec

90

83

%Rec.

Limits

50 - 150

50 - 150

8	
	9
1	0
	3

Lab Sample ID: 280-135400 Matrix: Water	-01110							inerit 3d	mple ID: M Prep Type		
Analysis Batch: 492191											
····· , ··· ···························	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	360	E	50.0	412	E 4	mg/L		100	80 - 120		
Sulfate	ND		50.0	50.2		mg/L		100	80 - 120		
Lab Sample ID: 280-135400	-B-1 MSD					Client	Samp	le ID: N	Aatrix Spike	e Dup	licate
Matrix: Water									Prep Type	e: Tot	al/N/
Analysis Batch: 492191	Sample	Sample	Spike	MSD	MSD				%Rec.		RPI
Analyte	-	Qualifier	Added	_	Qualifier	Unit	D	%Rec	Limits	RPD	Lim
Chloride	360	·	50.0		E 4	mg/L	_	101	80 - 120		20
Sulfate	ND	L	50.0	50.4	L 4	mg/L		101	80 - 120 80 - 120	0	20
			00.0	00.1		iiig/L		101	001120	Ũ	-
Lab Sample ID: 280-135400	-B-1 DU							Client	Sample ID	: Dup	licate
Matrix: Water									Prep Type	e: Tot	al/N/
Analysis Batch: 492191											
-	Sample	Sample		DU	DU						RPI
Analyte	Result	Qualifier		Result	Qualifier	Unit	D			RPD	Limi
Chloride	360	E		361	E	mg/L				0.2	1
Sulfate	ND			ND		mg/L				NC	15
lethod: 350.1 - Nitroge	n, Ammo	onia									
Lab Sample ID: MB 280-492	2029/57						Clie	ent San	nple ID: Me	thod	Blank
Matrix: Water							U.I.	Jine Odin	Prep Type		
Analysis Batch: 492029											
· ·····, · · · · · · · · · · · · · · ·		MB MB									
Analyte	Re	sult Qualifier	RL		MDL Unit		D P	repared	Analyze	d	Dil Fac
Ammonia as N		ND	0.030	, <u> </u>	mg/L			-	04/16/20 1	3:03	1
Lab Sample ID: LCS 280-49	2029/56					Clie	ent Sai	mple ID	: Lab Cont	rol Sa	mple
Matrix: Water								- C	Prep Type		
Analysis Batch: 492029											
			Spike	LCS	LCS				%Rec.		
Analyte			Added		Qualifier	Unit	D	%Rec	Limits		
Ammonia as N			2.50	2.74		mg/L		110	90 - 110		
Lab Sample ID: 280-135445	-4 MS						Clie	nt Sam	ple ID: MW	121-04	40820
Matrix: Water									Prep Type		
Analysis Batch: 492029											
•	Sample	Sample	Spike	MS	MS				%Rec.		
Analyto	Posult	Qualifier	Addad	Pocult	Qualifier	Unit	п	%Poc	Limite		

Analy **Result Qualifier** Added Result Qualifier Analyte Unit D %Rec Limits Ammonia as N ND F1 1.00 1.13 F1 90 - 110 mg/L 113

10

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 280-135445-4 M Matrix: Water	SD									CI	ier	nt Samı	ple ID: MW Prep Typ		
Analysis Batch: 492029	Sample	Sam	nlo	Spike		MSD	мег	`					%Rec.		RP
	Result		•	Added		Result	-		Unit		D	%Rec	Limits	RPD	Lim
Ammonia as N	ND			1.00		1.09	Qua		mg/L		_	109	90 - 110	4	1
-				1.00		1.00			iiig/L			100	50-110		
lethod: SM 2320B - Alkalin	lity														
Lab Sample ID: MB 280-491911/ Matrix: Water	/31									С	lie	nt Sam	ple ID: Me Prep Typ		
Analysis Batch: 491911													гіер тур	e. 100	.al/11/
Analysis Balch. 491911		мв	MR												
Analyte	Ro		Qualifier		RL		MDL	Unit		D	Pr	epared	Analyze	Ч	Dil Fa
Total Alkalinity	ite	ND	Quanter		10			mg/L			1.1	spareu			Dii Fa
Bicarbonate Alkalinity		ND			10			mg/L					04/15/20 1		
Carbonate Alkalinity		ND			10			mg/L					04/15/20 1		
Carbonate Arkannity		ND			10			mg/∟					04/13/201	5.55	
Lab Sample ID: MB 280-491911	/58									С	lie	nt Sam	ple ID: Me	thod	Blan
Matrix: Water													Prep Type		
Analysis Batch: 491911															
· · · · · , · · · · · · · · · · · · · · · · · · ·		ΜВ	MB												
Analyte	Re	sult	Qualifier		RL	I	MDL	Unit		D	Pr	epared	Analyze	d	Dil Fa
Total Alkalinity		ND			10			mg/L				-	04/15/20 1	5:53	
Bicarbonate Alkalinity		ND			10			mg/L					04/15/20 1	5:53	
Carbonate Alkalinity		ND			10			mg/L					04/15/20 1	5:53	
Lab Sample ID: LCS 280-491911	1/30								Clie	ent S	an	nple ID	: Lab Cont	rol Sa	ampl
Matrix: Water													Prep Typ		
Analysis Batch: 491911															
				Spike		LCS	LCS	;					%Rec.		
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
Total Alkalinity				200		207			mg/L		_	104	89 - 109		
Lab Sample ID: LCS 280-491911	1/57								Clie	ent S	an	nple ID	: Lab Cont	rol Sa	ampl
Matrix: Water													Prep Typ		
Analysis Batch: 491911															
				Spike		LCS	LCS	;					%Rec.		
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
Total Alkalinity				200		210			mg/L		_	105	89 - 109		
Lab Sample ID: 280-135445-11 I	טכ									Clier	nt S	Sample	ID: MW20	DD-04	4082
Matrix: Water													Prep Typ		
Analysis Batch: 491911															
	Sample	Sam	ple			DU	DU								RP
Analyte	Result	Qua	lifier			Result	Qua	lifier	Unit		D			RPD	Lim

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

Lab Sample ID: MB 280-4919	44/35								Clie	ent San	nple ID: Meth	nod l	Blank
Matrix: Water											Prep Type	: Tot	al/NA
Analysis Batch: 491944													
	М	в мв											
Analyte	Resu	It Qualifier		RL	I	MDL	Unit	D) P	repared	Analyzed		Dil Fac
Total Organic Carbon - Average	NI	D		1.0			mg/L				04/15/20 23:	57	1
Lab Sample ID: MB 280-4919	44/4								Clie	ent San	nple ID: Meth	nod l	Blank
Matrix: Water											Prep Type	: Tot	al/NA
Analysis Batch: 491944													
	M	B MB											
Analyte	Resu	It Qualifier		RL	I	MDL	Unit	D) P	repared	Analyzed		Dil Fac
Total Organic Carbon - Average	N	D		1.0			mg/L				04/15/20 14:	47	1
Lab Sample ID: LCS 280-491	944/3							Clier	nt Sa	mple ID	: Lab Contro	ol Sa	mple
Matrix: Water											Prep Type	: Tot	al/NA
Analysis Batch: 491944													
-			Spike		LCS	LCS	;				%Rec.		
Analyte			Added		Result	Qua	lifier	Unit	D	%Rec	Limits		
Total Organic Carbon - Average			25.0		25.2			mg/L		101	88 - 112		
Lab Sample ID: LCS 280-491	944/34							Clier	nt Sa	mple ID	: Lab Contro	ol Sa	mple
Matrix: Water											Prep Type	: Tot	al/NA
Analysis Batch: 491944													
			Spike		LCS	LCS	;				%Rec.		
Analyte			Added		Result	Qua	lifier	Unit	D	%Rec	Limits		
Total Organic Carbon - Average			25.0		25.4			mg/L		102	88 - 112		
Lab Sample ID: 280-135445-	1 MS								CI	ient Sa	mple ID: MV	V7-0 4	40820
Matrix: Water											Prep Type	: Tot	al/NA
Analysis Batch: 491944													
-	Sample Sa	ample	Spike		MS	MS					%Rec.		
Analyte	Result Q	ualifier	Added		Result	Qua	lifier	Unit	D	%Rec	Limits		
Total Organic Carbon - Average	1.9		25.0		27.5			mg/L		102	88 - 112		
Lab Sample ID: 280-135445-	1 MSD								CI	ient Sa	mple ID: MV	V7-0 4	40820
Matrix: Water											Prep Type	: Tot	al/NA
Analysis Batch: 491944													
-	Sample Sa	ample	Spike		MSD	MSE)				%Rec.		RPD
Analyte	Result Q	ualifier	Added		Result	Qua	lifier	Unit	D	%Rec	Limits	RPD	Limit
Total Organic Carbon - Average	1.9		25.0		27.6			mg/L		103	88 - 112	0	15

QC Association Summary

GC/MS VOA

Analysis Batch: 525766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-135445-1	MW7-040820	Total/NA	Water	8260C SIM	
280-135445-2	MW5-040820	Total/NA	Water	8260C SIM	
280-135445-3	SW1-040820	Total/NA	Water	8260C SIM	
280-135445-4	MW12I-040820	Total/NA	Water	8260C SIM	
280-135445-5	SW4-040820	Total/NA	Water	8260C SIM	
280-135445-6	SW6-040820	Total/NA	Water	8260C SIM	
280-135445-7	MW13D-040820	Total/NA	Water	8260C SIM	
280-135445-8	SW7-040820	Total/NA	Water	8260C SIM	
280-135445-9	MW6-040820	Total/NA	Water	8260C SIM	
280-135445-10	MW14-040820	Total/NA	Water	8260C SIM	
280-135445-11	MW20DD-040820	Total/NA	Water	8260C SIM	
280-135445-12	TB1	Total/NA	Water	8260C SIM	
MB 480-525766/9	Method Blank	Total/NA	Water	8260C SIM	
LCS 480-525766/6	Lab Control Sample	Total/NA	Water	8260C SIM	
LCSD 480-525766/7	Lab Control Sample Dup	Total/NA	Water	8260C SIM	

Metals

Prep Batch: 491630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-135445-1	MW7-040820	Dissolved	Water	3005A	
280-135445-2	MW5-040820	Dissolved	Water	3005A	
280-135445-3	SW1-040820	Dissolved	Water	3005A	
280-135445-4	MW12I-040820	Dissolved	Water	3005A	
280-135445-5	SW4-040820	Dissolved	Water	3005A	
280-135445-6	SW6-040820	Dissolved	Water	3005A	
280-135445-7	MW13D-040820	Dissolved	Water	3005A	
280-135445-8	SW7-040820	Dissolved	Water	3005A	
280-135445-9	MW6-040820	Dissolved	Water	3005A	
280-135445-10	MW14-040820	Dissolved	Water	3005A	
280-135445-11	MW20DD-040820	Dissolved	Water	3005A	
MB 280-491630/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-491630/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-135445-1 MS	MW7-040820	Dissolved	Water	3005A	
280-135445-1 MSD	MW7-040820	Dissolved	Water	3005A	

Analysis Batch: 492165

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
280-135445-1	MW7-040820	Dissolved	Water	6020	491630
280-135445-2	MW5-040820	Dissolved	Water	6020	491630
280-135445-3	SW1-040820	Dissolved	Water	6020	491630
280-135445-4	MW12I-040820	Dissolved	Water	6020	491630
280-135445-5	SW4-040820	Dissolved	Water	6020	491630
280-135445-6	SW6-040820	Dissolved	Water	6020	491630
280-135445-7	MW13D-040820	Dissolved	Water	6020	491630
280-135445-8	SW7-040820	Dissolved	Water	6020	491630
280-135445-9	MW6-040820	Dissolved	Water	6020	491630
280-135445-10	MW14-040820	Dissolved	Water	6020	491630
280-135445-11	MW20DD-040820	Dissolved	Water	6020	491630
MB 280-491630/1-A	Method Blank	Total Recoverable	Water	6020	491630
LCS 280-491630/2-A	Lab Control Sample	Total Recoverable	Water	6020	491630

QC Association Summary

Metals (Continued)

Analysis Batch: 492165 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-135445-1 M	S MW7-040820	Dissolved	Water	6020	491630
280-135445-1 M	SD MW7-040820	Dissolved	Water	6020	491630

General Chemistry

Analysis Batch: 491911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-135445-1	MW7-040820	Total/NA	Water	SM 2320B	
280-135445-2	MW5-040820	Total/NA	Water	SM 2320B	
280-135445-3	SW1-040820	Total/NA	Water	SM 2320B	
280-135445-4	MW12I-040820	Total/NA	Water	SM 2320B	
280-135445-5	SW4-040820	Total/NA	Water	SM 2320B	
280-135445-6	SW6-040820	Total/NA	Water	SM 2320B	
280-135445-7	MW13D-040820	Total/NA	Water	SM 2320B	
280-135445-8	SW7-040820	Total/NA	Water	SM 2320B	
280-135445-9	MW6-040820	Total/NA	Water	SM 2320B	
280-135445-10	MW14-040820	Total/NA	Water	SM 2320B	
280-135445-11	MW20DD-040820	Total/NA	Water	SM 2320B	
MB 280-491911/31	Method Blank	Total/NA	Water	SM 2320B	
MB 280-491911/58	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-491911/30	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-491911/57	Lab Control Sample	Total/NA	Water	SM 2320B	
280-135445-11 DU	MW20DD-040820	Total/NA	Water	SM 2320B	

Analysis Batch: 491944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-135445-1	MW7-040820	Total/NA	Water	SM 5310B	
280-135445-2	MW5-040820	Total/NA	Water	SM 5310B	
280-135445-3	SW1-040820	Total/NA	Water	SM 5310B	
280-135445-4	MW12I-040820	Total/NA	Water	SM 5310B	
280-135445-5	SW4-040820	Total/NA	Water	SM 5310B	
280-135445-6	SW6-040820	Total/NA	Water	SM 5310B	
280-135445-7	MW13D-040820	Total/NA	Water	SM 5310B	
280-135445-8	SW7-040820	Total/NA	Water	SM 5310B	
280-135445-9	MW6-040820	Total/NA	Water	SM 5310B	
280-135445-10	MW14-040820	Total/NA	Water	SM 5310B	
280-135445-11	MW20DD-040820	Total/NA	Water	SM 5310B	
MB 280-491944/35	Method Blank	Total/NA	Water	SM 5310B	
MB 280-491944/4	Method Blank	Total/NA	Water	SM 5310B	
LCS 280-491944/3	Lab Control Sample	Total/NA	Water	SM 5310B	
LCS 280-491944/34	Lab Control Sample	Total/NA	Water	SM 5310B	
280-135445-1 MS	MW7-040820	Total/NA	Water	SM 5310B	
280-135445-1 MSD	MW7-040820	Total/NA	Water	SM 5310B	

Analysis Batch: 492029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-135445-1	MW7-040820	Total/NA	Water	350.1	
280-135445-2	MW5-040820	Total/NA	Water	350.1	
280-135445-3	SW1-040820	Total/NA	Water	350.1	
280-135445-4	MW12I-040820	Total/NA	Water	350.1	
280-135445-5	SW4-040820	Total/NA	Water	350.1	

QC Association Summary

General Chemistry (Continued)

Analysis Batch: 492029 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-135445-6	SW6-040820	Total/NA	Water	350.1	
280-135445-7	MW13D-040820	Total/NA	Water	350.1	
280-135445-8	SW7-040820	Total/NA	Water	350.1	
280-135445-9	MW6-040820	Total/NA	Water	350.1	
280-135445-10	MW14-040820	Total/NA	Water	350.1	
280-135445-11	MW20DD-040820	Total/NA	Water	350.1	
MB 280-492029/57	Method Blank	Total/NA	Water	350.1	
LCS 280-492029/56	Lab Control Sample	Total/NA	Water	350.1	
280-135445-4 MS	MW12I-040820	Total/NA	Water	350.1	
280-135445-4 MSD	MW12I-040820	Total/NA	Water	350.1	

Analysis Batch: 492191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-135445-1	MW7-040820	Total/NA	Water	300.0	
280-135445-2	MW5-040820	Total/NA	Water	300.0	
280-135445-3	SW1-040820	Total/NA	Water	300.0	
280-135445-4	MW12I-040820	Total/NA	Water	300.0	
280-135445-5	SW4-040820	Total/NA	Water	300.0	
280-135445-6	SW6-040820	Total/NA	Water	300.0	
280-135445-7	MW13D-040820	Total/NA	Water	300.0	
280-135445-8	SW7-040820	Total/NA	Water	300.0	
280-135445-9	MW6-040820	Total/NA	Water	300.0	
280-135445-10	MW14-040820	Total/NA	Water	300.0	
280-135445-11	MW20DD-040820	Total/NA	Water	300.0	
MB 280-492191/6	Method Blank	Total/NA	Water	300.0	
MB 280-492191/68	Method Blank	Total/NA	Water	300.0	
LCS 280-492191/4	Lab Control Sample	Total/NA	Water	300.0	
LCS 280-492191/67	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-492191/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-492191/3	Lab Control Sample	Total/NA	Water	300.0	
280-135400-B-1 MS	Matrix Spike	Total/NA	Water	300.0	
280-135400-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
280-135400-B-1 DU	Duplicate	Total/NA	Water	300.0	

4/22/2020

Initial

Amount

25 mL

50 mL

5 mL

10 mL

20 mL

25 mL

50 mL

5 mL

10 mL

20 mL

Batch

Number

525766

491630

492165

492191

492029

491911

491944

Batch

Number

525766

491630

492165

492191

492029

491911

491944

Final

∆mount

25 mL

50 ml

5 mL

10 mL

20 mL

Final

Amount

25 mL

50 mL

5 mL

10 mL

20 mL

Dil

1

1

1

1

1

1

1

1

1

1

1

1

Factor

Prep Type

Total/NA

Dissolved

Dissolved

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Dissolved

Dissolved

Total/NA

Total/NA

Total/NA

Total/NA

Client Sample ID: MW7-040820 Date Collected: 04/08/20 08:45 Date Received: 04/10/20 08:30

Batch

Type

Prep

Analysis

Prep

Batch

3005A

6020

300.0

350.1

SM 2320B

SM 5310B

8260C SIM

3005A

6020

300.0

350.1

SM 2320B

SM 5310B

Method

8260C SIM

Lab Sample ID: 280-135445-1 Matrix: Water

5

TAL DEN

TAL DEN

Matrix: Water

Lab

TAL BUF

TAL DEN	13
TAL DEN	
TAL DEN	
TAL DEN	

04/15/20 14:49 SPG TAL DEN 04/16/20 05:49 JMB TAL DEN

Analyst

CDC

Lab Sample ID: 280-135445-3

Lab Sample ID: 280-135445-4

Matrix: Water

Matrix: Water

Date Received: 04/10/20 08:30 Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA 8260C SIM 525766 04/14/20 18:10 Analysis 25 mL 25 mL CDC TAL BUF Dissolved Prep 3005A 50 mL 50 mL 491630 04/15/20 14:55 EC TAL DEN Dissolved Analysis 6020 1 492165 04/16/20 12:30 LMT TAL DEN Total/NA Analysis 300.0 1 5 mL 5 mL 492191 04/21/20 03:21 JAP TAL DEN Total/NA 10 mL 492029 Analysis 350.1 1 10 mL 04/16/20 13:50 BWH TAL DEN Total/NA Analysis SM 2320B 491911 04/15/20 14:54 SPG TAL DEN 1 04/16/20 06:05 JMB Total/NA Analysis SM 5310B 1 20 mL 20 mL 491944 TAL DEN

Client Sample ID: MW12I-040820 Date Collected: 04/08/20 11:25 Date Received: 04/10/20 08:30

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	525766	04/14/20 18:34	CDC	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	491630	04/15/20 14:55	EC	TAL DEN
Dissolved	Analysis	6020		1			492165	04/16/20 12:34	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	492191	04/21/20 03:38	JAP	TAL DEN

Eurofins TestAmerica, Denver

Prepared		
or Analyzed	Analyst	Lab
04/14/20 17:21	CDC	TAL BUF
04/15/20 14:55	EC	TAL DEN
04/16/20 12:09	LMT	TAL DEN
04/21/20 02:46	JAP	TAL DEN
04/16/20 13:46	BWH	TAL DEN

Lab Sample ID: 280-135445-2

04/15/20 14:45 SPG

04/16/20 05:03 JMB

Prepared

or Analyzed

04/14/20 17:46

04/15/20 14:55 EC

04/16/20 12:27 LMT

04/21/20 03:03 JAP

04/16/20 13:48 BWH

Client Samp	ole ID: MV	V5-040820			
Date Collected	d: 04/08/20	09:55			
Date Received	d: 04/10/20 0	08:30			
_	Batch	Batch		Dil	Initial
Prep Type	Туре	Method	Run	Factor	Amount

Run

Client Sample ID: SW1-040820 Date Collected: 04/08/20 10:50

Client Sample ID: MW12I-040820 Date Collected: 04/08/20 11:25 Date Received: 04/10/20 08:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysi	s 350.1		1	10 mL	10 mL	492029	04/16/20 13:52	BWH	TAL DEN
Total/NA	Analysi	s SM 2320B		1			491911	04/15/20 14:59	SPG	TAL DEN
Total/NA	Analysi	s SM 5310B		1	20 mL	20 mL	491944	04/16/20 06:28	JMB	TAL DEN

Client Sample ID: SW4-040820 Date Collected: 04/08/20 11:30 Date Received: 04/10/20 08:30

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	525766	04/14/20 18:59	CDC	TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	491630	04/15/20 14:55	EC	TAL DEN
Dissolved	Analysis	6020		1			492165	04/16/20 12:45	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	492191	04/21/20 05:06	JAP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	492029	04/16/20 14:10	BWH	TAL DEN
Total/NA	Analysis	SM 2320B		1			491911	04/15/20 15:04	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	491944	04/16/20 06:43	JMB	TAL DEN

Client Sample ID: SW6-040820 Date Collected: 04/08/20 12:10 Date Received: 04/10/20 08:30

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	525766	04/14/20 19:23		TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	491630	04/15/20 14:55	EC	TAL DEN
Dissolved	Analysis	6020		1			492165	04/16/20 12:48	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	492191	04/21/20 05:23	JAP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	492029	04/16/20 14:12	BWH	TAL DEN
Total/NA	Analysis	SM 2320B		1			491911	04/15/20 15:08	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	491944	04/16/20 07:00	JMB	TAL DEN

Client Sample ID: MW13D-040820 Date Collected: 04/08/20 12:40 Date Received: 04/10/20 08:30

Prep Type Total/NA	Batch Type Analysis	Batch Method 8260C SIM	Run	Dil Factor	Initial Amount 25 mL	Final Amount 25 mL	Batch Number 525766	Prepared or Analyzed 04/14/20 19:48	Analyst CDC	Lab TAL BUF
Dissolved Dissolved	Prep Analysis	3005A 6020		1	50 mL	50 mL	491630 492165	04/15/20 14:55 04/16/20 12:52		TAL DEN TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	492191	04/21/20 05:41	JAP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	492029	04/16/20 14:14	BWH	TAL DEN
Total/NA	Analysis	SM 2320B		1			491911	04/15/20 15:13	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	491944	04/16/20 07:15	JMB	TAL DEN

Eurofins TestAmerica, Denver

Lab Sample ID: 280-135445-4 Matrix: Water

Lab Sample ID: 280-135445-5

Lab Sample ID: 280-135445-6

Lab Sample ID: 280-135445-7

Matrix: Water

Matrix: Water

Matrix: Water

Prep Type

Total/NA

Dissolved

Dissolved

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Client Sample ID: SW7-040820 Date Collected: 04/08/20 13:40 Date Received: 04/10/20 08:30

Batch

Type

Prep

Analysis

Analysis

Analysis

Analysis

Analysis

Analysis

Client Sample ID: MW6-040820

Date Collected: 04/08/20 15:00

Date Received: 04/10/20 08:30

Batch

3005A

6020

300.0

350.1

SM 2320B

SM 5310B

Method

8260C SIM

Lab Sample ID: 280-135445-8 Matrix: Water

Analyst

CDC

Lab

TAL BUF

TAL DEN

TAL DEN

TAL DEN

TAL DEN

TAL DEN

TAL DEN

Prepared

or Analyzed

04/14/20 20:12

04/15/20 14:55 EC

04/16/20 12:55 LMT

04/21/20 05:58 JAP

04/16/20 14:16 BWH

04/15/20 15:18 SPG

04/16/20 07:29 JMB

Prepared

or Analyzed

04/14/20 20:37

04/15/20 15:23 SPG

04/16/20 08:16 JMB

Lab Sample ID: 280-135445-10

Lab Sample ID: 280-135445-11

Lab Sample ID: 280-135445-9 Matrix: Water

	12
BUF	

Analyst Lab CDC TAL B TAL DEN 04/15/20 14:55 EC

TAL DEN

TAL DEN

Matrix: Water

Matrix: Water

TAL DEN 04/16/20 12:59 LMT 04/21/20 06:16 JAP TAL DEN 04/16/20 14:18 BWH TAL DEN

Client Sample ID: MW14-040820 Date Collected: 04/08/20 15:13 Date Received: 04/10/20 08:30

Analysis

Analysis

Analysis

Analysis

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analvst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	525766	04/14/20 21:01	CDC	TAL BUF
Dissolved Dissolved	Prep Analysis	3005A 6020		1	50 mL	50 mL	491630 492165	04/15/20 14:55 04/16/20 13:02		TAL DEN TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	492191	04/21/20 06:33	JAP	TAL DEN
Total/NA	Analysis	350.1		1	10 mL	10 mL	492029	04/16/20 14:20	BWH	TAL DEN
Total/NA	Analysis	SM 2320B		1			491911	04/15/20 15:28	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	491944	04/16/20 08:34	JMB	TAL DEN

Client Sample ID: MW20DD-040820 Date Collected: 04/08/20 00:00 Date Received: 04/10/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analvzed	Analvst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	525766	04/14/20 21:26		TAL BUF
Dissolved	Prep	3005A			50 mL	50 mL	491630	04/15/20 14:55	EC	TAL DEN
Dissolved	Analysis	6020		1			492165	04/16/20 13:06	LMT	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	492191	04/21/20 06:51	JAP	TAL DEN

Eurofins TestAmerica, Denver

Initial

Amount

25 mL

50 mL

5 mL

10 mL

20 mL

Initial

Amount

25 mL

50 mL

5 mL

10 mL

20 mL

Batch

Number

525766

491630

492165

492191

492029

491911

491944

Batch

Number

525766

491630

492165

492191

492029

491911

491944

Final

∆mount

25 mL

50 ml

5 mL

10 mL

20 mL

Final

Amount

25 mL

50 mL

5 mL

10 mL

20 mL

Dil

1

1

1

1

1

1

Dil

1

1

1

1

1

1

Factor

Factor

Run

Batch Batch Method Prep Type Туре Run Total/NA 8260C SIM Analysis Dissolved 3005A Prep 6020 Dissolved Analysis

300.0

350.1

SM 2320B

SM 5310B

4/22/2020

Client Sample ID: MW20DD-040820 Date Collected: 04/08/20 00:00 Date Received: 04/10/20 08:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	10 mL	10 mL	492029	04/16/20 14:22	BWH	TAL DEN
Total/NA	Analysis	SM 2320B		1			491911	04/15/20 15:58	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	20 mL	20 mL	491944	04/15/20 19:10	JMB	TAL DEN

Client Sample ID: TB1 Date Collected: 04/08/20 00:00 Date Received: 04/10/20 08:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	25 mL	25 mL	525766	04/14/20 21:51	CDC	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

Job ID: 280-135445-1

Lab Sample ID: 280-135445-11 **Matrix: Water**

Lab Sample ID: 280-135445-12

Matrix: Water



20 April 2020

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) 20D0076 Associated SDG ID(s) 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 itrentirety.

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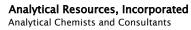
Cert# 100006

PJLA Testing

Accreditation # 66169

13

Denver TestAmerica		280-23414-6845.1 Page: 1			A - HCL M - Hexane		F - MaHSO4 Q - Ma2SO3 F - MeOH R - Ma2SSO3 G - Amchior R - Lusco A		J - DI Water K - EDTA	L - EDA Other:	to tedmu	-	F Special Instructions/Note:			Diss As,NO3,NO2,o-phos subbed direct to ARI								Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	Disposal By Lab Archive For Months	Malked Let.		C	41912020 03415 Compary T		Page 2 of 39 20D0076 ARISample FINAL 20 Apr 2020 1503	2 2 3 4 5 6 7 8 9
Chain of Custody Record	Sampler.	LOT VOTADA Data, Detsy A Bahar	very set a lestamencaine.	Due Date Requested: Analysis Requested	TAT Requested (days):		(ole ti due fo	0 0 10 0 10 0 0 10 0	ide (T/ ide (T/	(field fi	Sample Matrix Sample Matrix Sample Watrix Sample Watrix Type Warner, Warner, Matrix SIM - Viny	Dissolv Dissolv Almor Alka/Cl Dissolv	de: XXA D S N N D	5					1940	1340		1573	111	Unknown Radiological	BABA AND AND AND AND AND AND AND AND AND AN	1	20 080 Company Received by 1 0	CONTRACT RECEIVED IN THE DESTRICT AND DESTRI	Company Company	Cooler Temperature(s) °C and Other Remarks:		0 1 2 3 4 5
TestAmerica Denver 4955 Yarrow Street Arvada, CO 80002 Phone (303) 736-0100 Fax (303) 431-7171	ormation	lono Longer-la mahain	Company: Aspect Consulting, LLC	Address: 350 Madison Ave N	City: Bainbridge Island	State, Zb: WA, 98110	Phone: Email:	mkunaras @ espectionsol and uon		shington		Sample Identification	m7- OKX10	12	U	10	1-02	Z	OBSOLT CISTIN	21-7-041820	1110-6-040820	1410-14-040X40	Possible Hazard Identification	Non-Hazard Plammable Skin Irritant Poison B		Empty Kit Kelinquished by:	Neurolizado de Carlo Congrado leval			Custody Seals Intact: Custody Seal No.: A Yes A No		



Test America - DenverProject: Hansville4955 Yarrow StreetProject Number: 208006013-2Q/3Q/4QArvada CO, 80002Project Manager: Betsy Sara

Reported: 20-Apr-2020 15:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-7-040820	20D0076-01	Water	08-Apr-2020 08:45	09-Apr-2020 08:45
MW-5-040820	20D0076-02	Water	08-Apr-2020 09:55	09-Apr-2020 08:45
SW-1-040820	20D0076-03	Water	08-Apr-2020 10:50	09-Apr-2020 08:45
MW-12I-040820	20D0076-04	Water	08-Apr-2020 11:25	09-Apr-2020 08:45
SW-4-040820	20D0076-05	Water	08-Apr-2020 11:30	09-Apr-2020 08:45
SW-6-040820	20D0076-06	Water	08-Apr-2020 12:10	09-Apr-2020 08:45
MW-13D-040820	20D0076-07	Water	08-Apr-2020 12:40	09-Apr-2020 08:45
SW-7-040820	20D0076-08	Water	08-Apr-2020 13:40	09-Apr-2020 08:45
MW-6-040820	20D0076-09	Water	08-Apr-2020 15:00	09-Apr-2020 08:45
MW-14-040820	20D0076-10	Water	08-Apr-2020 15:13	09-Apr-2020 08:45
MW-20DD-040820	20D0076-11	Water	08-Apr-2020 00:00	09-Apr-2020 08:45

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.



Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 208006013-2Q/3Q/4Q	Reported:
Arvada CO, 80002	Project Manager: Betsy Sara	20-Apr-2020 15:03
	Work Order Case Narrative	

Sample receipt

Samples as listed on the preceding page were received April 9, 2020 under ARI work order 20D0076. 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.

A matrix spike and duplicate were prepared in conjunction with sample MW-7-040820. The matrix spike percent recovery and duplicate RPD were within QC limits.

Anions - EPA Method 300.0

Several samples were re-analyzed at dilutions outside of the 48 hour recommended holding times and have been flagged with "H" qualifiers.

Initial and continuing calibrations were within method requirements.

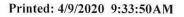
The method blank was clean at the reporting limits.

The LCS percent recoveries were within control limits.

A matrix spike and duplicate were prepared in conjunction with sample MW-7-040820. The matrix spike percent recoveries and duplicate RPD were within QC limits.

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Analytical Chemists and Consultants

WORK ORDER

		20	D0076]
Client: Test America	- Denver		Project Manager:	Amanda Volgardsen
Project: Hansville			Project Number:	[none]
		Preservati	on Confirmation	
Container ID	Container Type		pН	
20D0076-01 A	Miscellaneous container	r, 1:1 HN03	62 1	Pass
20D0076-01 B	Miscellaneous Containe	r		
20D0076-01 C	Miscellaneous Containe	r		
20D0076-02 A	Miscellaneous container	, 1:1 HN03	42	Pass
20D0076-02 B	Miscellaneous Containe	r		
20D0076-02 C	Miscellaneous Containe	r		
20D0076-03 A	Miscellaneous container	, 1:1 HN03	<2	Pass
20D0076-03 B	Miscellaneous Containe	r		
20D0076-03 C	Miscellaneous Containe	r		
20D0076-04 A	Miscellaneous container	, 1:1 HN03	<2	Pass
20D0076-04 B	Miscellaneous Containe	r		
20D0076-04 C	Miscellaneous Containe	r		
20D0076-05 A	Miscellaneous container	, 1:1 HN03	42	Pass
20D0076-05 B	Miscellaneous Containe	r		
20D0076-05 C	Miscellaneous Containe	r		
20D0076-06 A	Miscellaneous container	, 1:1 HN03	42	Pass
20D0076-06 B	Miscellaneous Container	r		
20D0076-06 C	Miscellaneous Container	r		
20D0076-07 A	Miscellaneous container	, 1:1 HN03	42	Pass
20D0076-07 B	Miscellaneous Container	r		
20D0076-07 C	Miscellaneous Container	n		
20D0076-08 A	Miscellaneous container	, 1:1 HN03	L2	Pass
20D0076-08 B	Miscellaneous Container	r		
20D0076-08 C	Miscellaneous Container			
20D0076-09 A	Miscellaneous container	, 1:1 HN03	62	Pass
20D0076-09 B	Miscellaneous Container	•		1000
20D0076-09 C	Miscellaneous Container			
20D0076-10 A	Miscellaneous container	, 1:1 HN03	<7	Pass
20D0076-10 B	Miscellaneous Container	•	<u> </u>	
20D0076-10 C	Miscellaneous Container	•		
20D0076-11 A	Miscellaneous container	, 1:1 HN03	62	Pass
20D0076-11 B	Miscellaneous Container			1
20D0076-11 C	Miscellaneous Container	e 1		



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WORK ORDER

	20D0076	
Client: Test America - Denver	Project Manager: Amanda Volgardsen	
Project: Hansville	Project Number: [none]	
Preservation Confirmed By	KD 20005 41912020 Date	
eviewed By	Date Page 35 of 75 Page 6 of 39 20D0076 ARISample FINAL 20 Apr 24/22/30	

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Analytical Resources, Incorporated Analytical Chemists and Consultants

Cooler Receipt Form

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			A.		
ARI Client: Test Ame	rica Denver	Project Name: <u>Hansui</u>	Ile Land	fi11	
COC No(s):		Delivered by: Fed-Ex UPS Cou	rier Hand Deliverer	d Other:	
Assigned ARI Job No: 26 DC		Tracking No:	\bigcirc		NA
Preliminary Examination Phase:					0
Were intact, properly signed and d	ated custody seals attached to th	ne outside of the cooler?	YE	S	NO
Were custody papers included with			YE	5	NO
Were custody papers properly fille			YE	5	NO
Temperature of Cooler(s) (°C) (rec				9	
Time 0945		0.1			
If cooler temperature is out of com	pliance fill out form 00070F		Temp Gun ID#:	DO0 5.200	0
Cooler Accepted by:	10	Date: 4/9/2020 Time	: 084 <u>5</u>		
	Complete custody forms an	d attach all shipping documents			
Log-In Phase:					
Was a temperature blank include	d in the cooler?			YES	NO
		p Wet Ice Gel Packs Baggies Foarr	Block Paper Othe		(NO
Was sufficient ice used (if approp		\sim	NA	(ES)	NO
How were bottles sealed in plasti	 A State of the Sta		Individually	Grouped	Not
Did all bottles arrive in good cond			manadaliy	YES	NO
				YES	NO
		er of containers received?		YES	NO
				ES ES	NO
Were all bottles used correct for t	ADA. ADAMATING THE POST ALL STRUCTURE STRUCTURE AND ADD			YES	NO
		servation sheet, excluding VOCs)	. NA	YES	NO
Were all VOC vials free of air but	bles?		NA	YES	NO
Was sufficient amount of sample	sent in each bottle?		\bigcirc	YES	NO
			NÀ		
Were the sample(s) split N	A YES Date/Time:	Equipment:		Split by:	
Samples Logged by:KO	Date: 4/0/2	2020 Time: 0925 L	abels checked by:	KD	
	** Notify Project Manager of	of discrepancies or concerns **			
Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample	ID on COC	
Additional Notes, Discrepancie	s, & Resolutions:				
	ite:				
By: Da	<u>ic.</u>				

Cooler Receipt Form



Ana	lytical	Report

Test America - Denver		Project: Hansville				
4955 Yarrow Street		Project Number: 208006013-2Q/3Q/4Q			Repor	ted:
Arvada CO, 80002		Project Manager: Betsy Sara	20-Apr-2020 15:0			
		MW-7-040820				
		20D0076-01 (Water)				
	Compounds (dissolved)					
Method: EPA 200.8 UCT	-KED			S	ampled: 04/0	08/2020 08:45
Instrument: ICPMS2 An	nalyst: MCB			Aı	nalyzed: 04/2	17/2020 15:31
Sample Preparation:	Preparation Method: REN EPA 600/4-	-79-020 4.1.4 HNO3 matrix		Ext	ract ID: 20D	0076-01 A 01
	Preparation Batch: BID0219	Sample Size: 25 mL				
	D 1 0 1 1 1 0 0 0 0 0	Final Volume: 25 mL				
	Prepared: 04/16/2020	Final Volume. 25 mL				
	Prepared: 04/16/2020	Filial volume. 25 IIIL	Reporting			
Analyte	Prepared: 04/16/2020	CAS Number Dilution	Reporting Limit	Result	Units	Notes

 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.



Ana	lytical	Report

Test America - Denver		Project: Hansville	e					
4955 Yarrow Street	Proje	ect Number: 2080060	13-2Q/3Q/4	Q			Repo	rted:
Arvada CO, 80002	Proje	ct Manager: Betsy Sa	ra				20-Apr-20	20 15:03
		MW-7-040820						
		20D0076-01 (Wate	r)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 08:45
Instrument: IC930 Analys	t: CDE					Aı	nalyzed: 04/	09/2020 14:11
Sample Preparation:	Sample Size: 10 Final Volume: 1]	Extract ID: 2	20D0076-01 C	
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N		14797-55-8	1	0.100	0.100	0.185	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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Ana	lytical	Report
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Test America - Denver		Project: Hansville					
4955 Yarrow Street		Project Number: 208006013-2Q/3Q/4Q			Repor	ted:	
Arvada CO, 80002		Project Manager: Betsy Sara		20-Apr-2020 15:0			
		MW-5-040820					
		20D0076-02 (Water)					
Metals and Metallic	Compounds (dissolved)						
Method: EPA 200.8 UCT	`-KED			S	ampled: 04/0	08/2020 09:55	
Instrument: ICPMS2 A	nalyst: MCB			Aı	nalyzed: 04/	17/2020 16:14	
Sample Preparation:	Preparation Method: REN EPA 600/4	4-79-020 4.1.4 HNO3 matrix		Ext	ract ID: 20D	0076-02 A 01	
	Preparation Batch: BID0219	Sample Size: 25 mL					
	Prepared: 04/16/2020	Final Volume: 25 mL					
	riepaieu. 04/10/2020	T mar volume. 25 mE					
	riepared. 04/10/2020	That volune. 25 mil	Reporting				
Analyte	Frepared. 04/10/2020	CAS Number Dilution	Reporting Limit	Result	Units	Notes	

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Analytical Report

Test America - Denver		Project: Hansville	e							
4955 Yarrow Street	Project Number: 208006013-2Q/3Q/4Q						Reported:			
Arvada CO, 80002	Proje	ct Manager: Betsy Sa	ra				20-Apr-20	20 15:03		
		MW-5-040820								
		20D0076-02 (Wate	r)							
Wet Chemistry										
Method: EPA 300.0						S	ampled: 04/	08/2020 09:55		
Instrument: IC930 Analy	st: CDE					A	nalyzed: 04/	09/2020 15:12		
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1]	Extract ID: 2	20D0076-02 C		
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes		
Nitrate-N		14797-55-8	1	0.100	0.100	2.49	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		
				Detection	Reporting					
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes		
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	U		

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5	chain of custody document. This analytical report must be reproduced in its
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Test America - Denver		Project: Hansville					
4955 Yarrow Street		Project Number: 20800601	3-2Q/3Q/4Q	Q Reported: 20-Apr-2020 15:0			
Arvada CO, 80002		Project Manager: Betsy Sara	a				
		SW-1-040820					
		20D0076-03 (Water)				
Metals and Metallic (Compounds (dissolved)						
Method: EPA 200.8 UCT	-KED				S	ampled: 04/0	08/2020 10:50
Instrument: ICPMS2 Ar	nalyst: MCB				Aı	nalyzed: 04/2	17/2020 16:19
Sample Preparation:	Preparation Method: REN EPA 600/4	-79-020 4.1.4 HNO3 matrix			Ext	ract ID: 20D	0076-03 A 01
	Preparation Batch: BID0219	Sample Size: 25 1					
	Prepared: 04/16/2020	Final Volume: 25	mL				
				Reporting			
Analyte		CAS Number	Dilution	Limit	Result	Units	Notes
		7440-38-2		0.000200	0.00161	mg/L	

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Ana	lytical	Report
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Test America - Denver 4955 Yarrow Street Arvada CO, 80002	5	Project: Hansvill ect Number: 2080060 et Manager: Betsy Sa	13-2Q/3Q/4	Q			Repo 20-Apr-20	
		SW-1-040820 20D0076-03 (Wate	er)					
Wet Chemistry								
Method: EPA 300.0 Instrument: IC930 Analys	t: CDE							08/2020 10:50 09/2020 15:32
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1]	Extract ID: 2	20D0076-03 C
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N		14797-55-8	1	0.100	0.100	1.81	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

Analytical Resources, Inc. The results in chain of custo

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Test America - Denver		Project: Hansvill	le				
4955 Yarrow Street		Project Number: 2080060)13-2Q/3Q/4Q	Q/4Q Reported:			
Arvada CO, 80002		Project Manager: Betsy Sa	ara			20-Apr-20	20 15:03
		MW-12I-04082	0				
		20D0076-04 (Wate	er)				
Metals and Metallic C	Compounds (dissolved)						
Method: EPA 200.8 UCT	-KED				S	ampled: 04/	08/2020 11:25
Instrument: ICPMS2 Ar	alyst: MCB				Ar	halyzed: 04/	17/2020 16:24
Sample Preparation:	Preparation Method: REN EPA 600/4- Preparation Batch: BID0219 Prepared: 04/16/2020	-79-020 4.1.4 HNO3 matrix Sample Size: 2: Final Volume: 2	5 mL		Ext	ract ID: 20D	00076-04 A 01
Analyte		CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved		7440-38-2	1	0.000200	0.00238	mg/L	

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, ,	chain of custody document. This analytical report must be reproduced in its
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Test America - Denver 4955 Yarrow Street Arvada CO, 80002	5	Project: Hansvill ect Number: 2080060 ct Manager: Betsy Sa	13-2Q/3Q/4	Q			Repo 20-Apr-20	
,	v	MW-12I-04082	0				1	
		20D0076-04 (Wate	r)					
Wet Chemistry Method: EPA 300.0							omm1od: 04	08/2020 11.25
Instrument: IC930 Analys	st: CDE						-	08/2020 11:25 09/2020 15:52
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 mL Final Volume: 10 mL]	Extract ID: 2	20D0076-04 C		
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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Ana	lytical	Report

Test America - Denver 4955 Yarrow Street Arvada CO, 80002		Project: Hansville Project Number: 208006013-2Q/3Q/4Q Project Manager: Betsy Sara		Repor 20-Apr-20	
		SW-4-040820 20D0076-05 (Water)		1	
Metals and Metallic (Method: EPA 200.8 UCT Instrument: ICPMS2 A					08/2020 11:30 17/2020 16:29
Sample Preparation:	Preparation Method: REN EPA 600/ Preparation Batch: BID0219 Prepared: 04/16/2020	4-79-020 4.1.4 HNO3 matrix Sample Size: 25 mL Final Volume: 25 mL			00076-05 A 01

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5	chain of custody document. This analytical report must be reproduced in its
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Ana	lytical	Report
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Test America - Denver 4955 Yarrow Street Arvada CO, 80002	5	Project: Hansvill ect Number: 2080060 ct Manager: Betsy Sa	13-2Q/3Q/4	Q			Repo 20-Apr-20	
		SW-4-040820					Ĩ	
		20D0076-05 (Wate	er)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 11:30
Instrument: IC930 Analys	t: CDE					Aı	nalyzed: 04/	09/2020 16:12
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1]	Extract ID: 2	20D0076-05 C
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N		14797-55-8	1	0.100	0.100	1.19	mg/L	
Analyte Nitrite-N		CAS Number 14797-65-0	Dilution 1	Detection Limit 0.100	Reporting Limit 0.100	Result ND	Units mg/L	Notes 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



Ana	lytical	Rep	ort

Test America - Denver 4955 Yarrow Street		Project: Hansville Project Number: 208006013-2Q/3Q/4Q			Repor	tod.
Arvada CO, 80002 Project Manager: Betsy Sara					20-Apr-20	
		SW-6-040820			1	
		20D0076-06 (Water)				
Metals and Metallic (Compounds (dissolved)					
Method: EPA 200.8 UCT	-KED			Sa	ampled: 04/0	08/2020 12:10
Instrument: ICPMS2 Ar	nalyst: MCB			Ar	alyzed: 04/	17/2020 16:33
Sample Preparation:	Preparation Method: REN EPA 600/4 Preparation Batch: BID0219	Sample Size: 25 mL		Ext	ract ID: 20D	00076-06 A 01
	Prepared: 04/16/2020	Final Volume: 25 mL	Reporting			
			Limit	Result	Units	Notes
Analyte		CAS Number Dilution	Liiiit	Result	Onits	110105

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	chain of custody document. This analytical report must be reproduced in its
	entirety.



Ana	lytical	Rep	ort

Test America - Denver		Project: Hansvill	e					
4955 Yarrow Street	Proj	ject Number: 2080060	13-2Q/3Q/4	Q			Repor	ted:
Arvada CO, 80002	Proje	ect Manager: Betsy Sa	ira				20-Apr-20	20 15:03
		SW-6-040820						
		20D0076-06 (Wate	er)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 12:10
Instrument: IC930 Analy	yst: CDE					Aı	nalyzed: 04/	09/2020 17:12
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 1(Final Volume: 1]	Extract ID: 2	20D0076-06 C
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

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
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Ana	lytical	Rep	ort

Test America - Denver		Project: Hansvill	e					
4955 Yarrow Street	Project Number: 208006013-2Q/3Q/4Q						Repor	ted:
Arvada CO, 80002	CO, 80002 Project Manager: Betsy Sara						20-Apr-20	20 15:03
		SW-6-040820						
	2	0D0076-06RE2 (Wa	ater)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 12:10
Instrument: IC930 Anal	yst: CDE					Aı	nalyzed: 04/	13/2020 15:21
Sample Preparation:	Preparation Method: No Prep Wet Chem					Extra	et ID: 20D0	0076-06RE2 C
	Preparation Batch: BID0120	Sample Size: 10						
	Prepared: 04/09/2020	Final Volume: 1	0 mL					
				Detection	Reporting			
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Nitrate-N		14797-55-8	1	0.100	0.100	ND	mg/L	U, H
Nitrate-N		14797-55-8	1	0.100	0.100	ND	mg/L	U, H
				Detection	Reporting			
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	H, U

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.



Test America - Denver		Project: Hansvil	le				
4955 Yarrow Street		Project Number: 208006	013-2Q/3Q/4Q			Repor	ted:
Arvada CO, 80002		Project Manager: Betsy S	ara			20-Apr-20	20 15:03
		MW-13D-04082	20				
		20D0076-07 (Wat	er)				
Metals and Metallic (Compounds (dissolved)						
Method: EPA 200.8 UCT	-KED				S	ampled: 04/	08/2020 12:40
Instrument: ICPMS2 Ar	nalyst: MCB				Aı	nalyzed: 04/	17/2020 16:38
Sample Preparation:	Preparation Method: REN EPA 600/4-	-79-020 4.1.4 HNO3 matri	х		Ext	ract ID: 20D	00076-07 A 01
	Preparation Batch: BID0219	Sample Size: 2	5 mL				
	Prepared: 04/16/2020	Final Volume:	25 mL				
				Reporting			
Analyte		CAS Number	Dilution	Limit	Result	Units	Notes
		7440-38-2		0.000200	0.00501	mg/L	



Test America - Denver		Project: Hansvill	e					
4955 Yarrow Street	Pro	ject Number: 2080060	13-2Q/3Q/4	Q			Repo	rted:
Arvada CO, 80002	Proj	ect Manager: Betsy Sa	ra				20-Apr-20	020 15:03
		MW-13D-04082	0					
		20D0076-07 (Wate	r)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	/08/2020 12:40
Instrument: IC930 Analy	vst: CDE					Aı	nalyzed: 04/	09/2020 17:32
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1]	Extract ID: 1	20D0076-07 C
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



Test America - Denver		Project: Hansvill	e					
4955 Yarrow Street	F	Project Number: 2080060	13-2Q/3Q/4	Q			Repo	rted:
Arvada CO, 80002	P	roject Manager: Betsy Sa	ra				20-Apr-20	20 15:03
		MW-13D-04082	0					
		20D0076-07RE3 (Wa	ater)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 12:40
Instrument: IC930 Analy	yst: CDE					Aı	nalyzed: 04/	13/2020 15:41
Sample Preparation:	Preparation Method: No Prep Wet Chem	1				Extra	act ID: 20D	0076-07RE3 C
	Preparation Batch: BID0120	Sample Size: 10) mL					
	Prepared: 04/09/2020	Final Volume: 1	0 mL					
				Detection	Reporting			
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Nitrate-N		14797-55-8	1	0.100	0.100	ND	mg/L	U, H
Nitrate-N		14797-55-8	1	0.100	0.100	ND	mg/L	U, H
				Detection	Reporting			
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	H, U
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	H, U



Ana	lytical	Rep	ort

Test America - Denver		Project: Hansville				
4955 Yarrow Street		Project Number: 208006013-2Q/3Q/4Q	006013-2Q/3Q/4Q Reported:			
Arvada CO, 80002						20 15:03
		SW-7-040820				
		20D0076-08 (Water)				
Metals and Metallic (Compounds (dissolved)					
Method: EPA 200.8 UCT	-KED			S	ampled: 04/	08/2020 13:40
Instrument: ICPMS2 Ar	nalyst: MCB			Ar	nalyzed: 04/	17/2020 16:43
Sample Preparation:	Preparation Method: REN EPA 600/4	4-79-020 4.1.4 HNO3 matrix		Ext	ract ID: 20E	00076-08 A 01
	Preparation Batch: BID0219	Sample Size: 25 mL				
	Prepared: 04/16/2020	Final Volume: 25 mL				
			Reporting			
1		CAS Number Dilution	Limit	Result	Units	Notes
Analyte						



Ana	lytical	Report

Test America - Denver		Project: Hansvill	e					
4955 Yarrow Street	ow Street Project Number: 208006013-2Q/3Q/4Q					Repor	ted:	
Arvada CO, 80002	Proje	ect Manager: Betsy Sa	ira				20-Apr-20	20 15:03
		SW-7-040820						
		20D0076-08 (Wate	er)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 13:40
Instrument: IC930 Analy	yst: CDE					Aı	nalyzed: 04/	09/2020 17:52
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1]	Extract ID: 2	20D0076-08 C
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

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	chain of custody document. This analytical report must be reproduced in its
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Test America - Denver 4955 Yarrow Street	Proje	Project: Hansvill ect Number: 2080060		0			Repo	rted•
Arvada CO, 80002	5	et Manager: Betsy Sa		×			20-Apr-20	
		SW-7-040820						
	20	D0076-08RE2 (Wa	ater)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 13:40
Instrument: IC930 Analys	st: CDE					Aı	nalyzed: 04/	13/2020 16:41
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1				Extra	act ID: 20D0	0076-08RE2 C
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N		14797-55-8	1	0.100	0.100	1.16	mg/L	Н
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	H, U
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	H, U

Analytical Resources, Inc.

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Ana	lytical	Rep	ort

Test America - Denver		Project: Hansville						
4955 Yarrow Street		Project Number: 208006013-2Q/3Q/4Q				Reported:		
Arvada CO, 80002		Project Manager: Betsy Sara 20-Apr-2020 15:03				20 15:03		
		MW-6-040820						
		20D0076-09 (Water)	1					
Metals and Metallic (Compounds (dissolved)							
Method: EPA 200.8 UCT	-KED				Sa	ampled: 04/0	08/2020 15:00	
Instrument: ICPMS2 An	nalyst: MCB				Ar	alyzed: 04/1	7/2020 16:47	
Sample Preparation:	Preparation Method: REN EPA 600/4	-79-020 4.1.4 HNO3 matrix			Ext	ract ID: 20D	0076-09 A 01	
	Preparation Batch: BID0219	Sample Size: 25 n	nL					
	Prepared: 04/16/2020	Final Volume: 25	mL					
				Reporting				
Analyte		CAS Number I	Dilution	Limit	Result	Units	Notes	
		7440-38-2		0.000200	0.00170	mg/L		



Ana	lytical	Repo	ort
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Test America - Denver 4955 Yarrow Street Arvada CO, 80002	5	Project: Hansvill ject Number: 2080060 ect Manager: Betsy Sa	13-2Q/3Q/4	Q			Repor 20-Apr-20	
		MW-6-040820 20D0076-09 (Wate						
Wet Chemistry Method: EPA 300.0						S	ampled: 04/	08/2020 15:00
Instrument: IC930 Analy	st: CDE					Aı	nalyzed: 04/	09/2020 18:12
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1]	Extract ID: 2	20D0076-09 C
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



Test America - Denver 4955 Yarrow Street Arvada CO, 80002	5	Project: Hansvill ect Number: 2080060 et Manager: Betsy Sa MW-6-040820	13-2Q/3Q/4 ara	Q			Repor 20-Apr-20	
	20	D0076-09RE3 (W	ater)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 15:00
Instrument: IC930 Analys	st: CDE					Aı	nalyzed: 04/	13/2020 17:01
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1				Extra	act ID: 20D0	0076-09RE3 C
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N		14797-55-8	1	0.100	0.100	0.357	mg/L	Н
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	H, U
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	H, U

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chain of custo

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Ana	lytical	Report

Test America - Denver		Project: Hansville				
4955 Yarrow Street		Project Number: 208006013-2Q/3Q/4Q			Repor	ted:
Arvada CO, 80002		Project Manager: Betsy Sara			20-Apr-20	20 15:03
		MW-14-040820				
		20D0076-10 (Water)				
Metals and Metallic (Compounds (dissolved)					
Method: EPA 200.8 UCT				S	ampled: 04/	08/2020 15:13
Instrument: ICPMS2 An	nalyst: MCB			Ar	nalyzed: 04/	17/2020 16:53
Sample Preparation:	Preparation Method: REN EPA 600/4	-79-020 4.1.4 HNO3 matrix		Ext	ract ID: 20D	00076-10 A 01
	Preparation Batch: BID0219	Sample Size: 25 mL				
	Prepared: 04/16/2020	Final Volume: 25 mL				
			Reporting			
		CAS Number Dilution	Limit	Result	Units	Notes
Analyte		CAS Number Dilution				



Ana	lytical	Repo	ort
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Test America - Denver 4955 Yarrow Street Arvada CO, 80002		Project: Hansvill ect Number: 2080060 ect Manager: Betsy Sa	13-2Q/3Q/4	Q			Repor 20-Apr-20	
		MW-14-040820 20D0076-10 (Wate	-					
Wet Chemistry Method: EPA 300.0							-	08/2020 15:13
Instrument: IC930 Analy	vst: CDE					Aı	nalyzed: 04/	09/2020 18:32
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1]	Extract ID: 2	20D0076-10 C
Analyte		CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N		14797-65-0		0.100	0.100	ND	mg/L	U



Ana	lytical	Report
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Test America - Denver		Project: Hansvill	e					
4955 Yarrow Street	Proj	ject Number: 2080060		0			Repo	rted:
Arvada CO, 80002	•	, ect Manager: Betsy Sa					20-Apr-20	
		MW-14-040820)					
	2	0D0076-10RE2 (W	ater)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 15:13
Instrument: IC930 Analy	yst: CDE					Aı	nalyzed: 04/	13/2020 17:21
Sample Preparation:	Preparation Method: No Prep Wet Chem		, T			Extra	act ID: 20D	0076-10RE2 C
	Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1						
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, H
Nitrate-N		14797-55-8	1	0.100	0.100	ND	mg/L	U, H
				Detection	Reporting			
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	H, U
Orthophosphorus		1426-54-42	1	0.10	0.10	ND	mg/L	H, U

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Test America - Denver 4955 Yarrow Street Arvada CO, 80002		Project: Hansville Project Number: 208006013-2Q/3Q/4 Project Manager: Betsy Sara	4Q		Repor 20-Apr-20	
		MW-20DD-040820 20D0076-11 (Water)				
Method: EPA 200.8 UCT						08/2020 00:00
Instrument: ICPMS2 A Sample Preparation:	Preparation Method: REN EPA 600/4 Preparation Batch: BID0219 Prepared: 04/16/2020	-79-020 4.1.4 HNO3 matrix Sample Size: 25 mL Final Volume: 25 mL				17/2020 17:01 00076-11 A 01
		CAS Number Dilution	Reporting Limit	Result	Units	Notes

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Test America - Denver 4955 Yarrow Street Arvada CO, 80002		Project: Hansvill ject Number: 2080060 ject Manager: Betsy Sa	13-2Q/3Q/4	Q			Repor 20-Apr-20	
		MW-20DD-0408 20D0076-11 (Wate						
Wet Chemistry								
Method: EPA 300.0							•	08/2020 00:00
Instrument: IC930 Analy	yst: CDE					Ar	alyzed: 04/	09/2020 18:52
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1				1	Extract ID: 2	20D0076-11 C
				Detection	Reporting			
Analyte		CAS Number	Dilution	Limit	Limit	Result	Units	Notes
Nitrite-N		14797-65-0	1	0.100	0.100	ND	mg/L	U

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	chain of custody document. This analytical report must be reproduced in its
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Test America - Denver 4955 Yarrow Street	Proje	Project: Hansvill ect Number: 2080060		Q			Repor	rted:
Arvada CO, 80002	Projec	ct Manager: Betsy Sa	ira				20-Apr-20	20 15:03
		MW-20DD-0408	20					
	20)D0076-11RE2 (Wa	ater)					
Wet Chemistry								
Method: EPA 300.0						S	ampled: 04/	08/2020 00:00
Instrument: IC930 Anal	yst: CDE					Aı	nalyzed: 04/	13/2020 17:41
Sample Preparation:	Preparation Method: No Prep Wet Chem Preparation Batch: BID0120 Prepared: 04/09/2020	Sample Size: 10 Final Volume: 1				Extra	net ID: 20D0	0076-11RE2 C
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, H
Nitrate-N		14797-55-8	1	0.100	0.100	ND	mg/L	U, H
				Detection	Reporting			

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

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5	chain of custody document. This analytical report must be reproduced in its
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Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 208006013-2Q/3Q/4Q	Reported:
Arvada CO, 80002	Project Manager: Betsy Sara	20-Apr-2020 15:03

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BID0219 - 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 (BID0219-BLK1)				Prepa	red: 16-Apr	-2020 Ana	lyzed: 17	Apr-2020 13	:26		
Arsenic, Dissolved	75a	ND	0.000200	mg/L							U
LCS (BID0219-BS1)				Prepa	red: 16-Apr	-2020 Ana	lyzed: 17-	Apr-2020 13	:31		
Arsenic, Dissolved	75a	0.0236	0.000200	mg/L	0.0250		94.4	80-120			
Duplicate (BID0219-DUP1)		Source	: 20D0076-01	Prepa	red: 16-Apr	-2020 Ana	lyzed: 17-	Apr-2020 15	:39		
Arsenic, Dissolved	75a	0.00121	0.000200	mg/L		0.00125			3.99	20	
Matrix Spike (BID0219-MS1)		Source	: 20D0076-01	Prepa	ared: 16-Apr	-2020 Ana	lyzed: 17-	Apr-2020 15	:47		
Arsenic, Dissolved	75a	0.0260	0.000200	mg/L	0.0250	0.00125	99.0	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: 208006013-2Q/3Q/4Q	Reported:
Arvada CO, 80002	Project Manager: Betsy Sara	20-Apr-2020 15:03

Wet Chemistry - Quality Control

Batch BID0120 - No Prep Wet Chem

Instrument: IC930 Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BID0120-BLK1)				Prep	ared: 09-Apr	-2020 Ana	alyzed: 09-	Apr-2020 13	:31		
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 (BID0120-BS1)				Prep	ared: 09-Apr	-2020 Ana	alyzed: 09-	Apr-2020 13	:51		
Nitrate-N	4.97	0.100	0.100	mg/L	5.00		99.4	90-110			
Nitrite-N	5.45	0.100	0.100	mg/L	5.00		109	90-110			
LCS (BID0120-BS2)				Prep	ared: 09-Apr	-2020 Ana	alyzed: 13-	Apr-2020 12	::40		
Orthophosphorus	4.65	0.10	0.10	mg/L	5.00		93.0	90-110			
Duplicate (BID0120-DUP1)	So	ource: 20D	00076-01	Prep	ared: 09-Apr	-2020 Ana	alyzed: 09-	Apr-2020 14	:32		
Nitrate-N	0.190	0.100	0.100	mg/L		0.185			2.67	20	
Nitrite-N	ND	0.100	0.100	mg/L		ND					U
Orthophosphorus	ND	0.10	0.10	mg/L		ND					U
Matrix Spike (BID0120-MS1)	Se	ource: 20D	00076-01	Prep	ared: 09-Apr	-2020 Ana	alyzed: 09-	Apr-2020 14	:52		
Nitrate-N	2.18	0.100	0.100	mg/L	2.00	0.185	99.7	75-125			
Nitrite-N	2.23	0.100	0.100	mg/L	2.00	ND	112	75-125			
Orthophosphorus	1.53	0.10	0.10	mg/L	2.00	ND	76.5	75-125			

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

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NELAP

WADOE

WA-DW

Analytical Report

Test America - I	Denver	Project: Hansville					
4955 Yarrow Str	reet	Project Number: 208006013-2	2Q/3Q/4Q	Reported:			
Arvada CO, 800	02	Project Manager: Betsy Sara		20-Apr-2020 15:03			
Certified An	alyses included in this	Report					
Analyte		Certifications					
EPA 200.8 UC	T-KED in Water						
Arsenic-75a		NELAP,WADOE,WA-DW,Do	NELAP,WADOE,WA-DW,DoD-ELAP				
EPA 300.0 in V	Vater						
Nitrate-N		DoD-ELAP,WADOE,WA-DV	V,NELAP				
Nitrite-N		DoD-ELAP,WADOE,WA-DV	V,NELAP				
Orthophosph	orus	DoD-ELAP,WADOE,WA-DV	DoD-ELAP,WADOE,WA-DW,NELAP				
Code	Description		Number	Expires			
ADEC	Alaska Dept of Environme	ental Conservation	17-015	01/31/2021			
CALAP	California Department of I	Public Health CAELAP	2748	06/30/2019			
DoD-ELAP	DoD-Environmental Labo	ratory Accreditation Program	66169	01/01/2021			

ORELAP - Oregon Laboratory Accreditation Program

WA Dept of Ecology

Ecology - Drinking Water

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WA100006-012

C558

C558

05/12/2020

06/30/2020

06/30/2020



	nerica - Denver arrow Street	Project: Hansville Project Number: 208006013-2Q/3Q/4Q	Reported:
Arvada	a CO, 80002	Project Manager: Betsy Sara	20-Apr-2020 15:03
		Notes and Definitions	
	Flagged value is not within established control limits	s.	
)	The reported value is from a dilution		
I	Hold time violation - Hold time was exceeded.		
	Estimated concentration value detected below the rep	porting limit.	
J	This analyte is not detected above the reporting limit	(RL) or if noted, not detected above the limit of detection (LO	D).
DET	Analyte DETECTED		
ID	Analyte NOT DETECTED at or above the reporting	limit	
IR	Not Reported		
ry	Sample results reported on a dry weight basis		
PD	Relative Percent Difference		
2C]	Indicates this result was quantified on the second col	umn on a dual column analysis.	

Sametic Sametic Care Translation C	TestAmerica Denver 4955 Yarrow Street Arvada, CO 80002 Phone (303) 736-0100 Fax (303) 431-7171	Chain	rd	#280	
Bits Constrained Constrained <thconstrained< th=""> <thco< th=""><th>lient Information</th><th>Unch/Dulon Br.</th><th></th><th>Carrier Tracking No(s):</th><th>COC No: 280-23414-6845.1</th></thco<></thconstrained<>	lient Information	Unch/Dulon Br.		Carrier Tracking No(s):	COC No: 280-23414-6845.1
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Они одая в Рессионалисски (окун) Они одая в Рессионалис	ulting, LLC		Analysis Red	uested	Job #:
Intel And Recond Gave) And Recond Gave) Definition Profile Profile <td>ktress: 50 Madison Ave N</td> <td>Due Date Requested:</td> <td></td> <td></td> <td>Preservation Codes: A - HCL M - Hexane</td>	ktress: 50 Madison Ave N	Due Date Requested:			Preservation Codes: A - HCL M - Hexane
PC# PC# <td>ty: ainbridge Island</td> <td>TAT Requested (days):</td> <td>191</td> <td></td> <td></td>	ty: ainbridge Island	TAT Requested (days):	191		
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0 (20) - 0 (20	idda-	1300		280-1354	145 Chain of Custody
- OLDON B - Unknown - Radiological Sample Ofsposal (A fee may be assessed if samples are retained longer than 1 mo mable Skin irritent - Poison B - Unknown - Radiological Sample Ofsposal (A fee may be assessed if samples are retained longer than 1 mo . III. IV. Other (specify)	4 - 1	1513			「「「」
Aftion Sample Disposal (A fee may be assessed if samples are retained longer than 1 mo mable Skin initiant Disposal By Lab Archive For III. N. Other (specify) Ni. N. Other (specify) Disposal By Lab Archive For III. N. Other (specify) Date: Disposal By Lab Archive For III. N. Other (specify) Date: Disposal By Lab Archive For III. N. Other (specify) Date: Itime: Itime: Disposal By Lab III. N. Other (specify) Date: Itime: Disposal By Lab Archive For III. N. Other (specify) Date: Itime: Disposal By Lab Archive For III. N. Other (specify) Date: Itime: Itime: Disposal By Lab Archive For III. N. Other (specify) Date: Itime: Itime: Itime: Disposal By Lab Disposal By Lab III. N. Other (specify) Date: Itime: Itime: Itime: Itime: Disposal By Lab Disposal By Lab III. N. Other (specify) Date: Disposal By Lab III. N. Other (specified in through the intercenters: Disposal By Lab Disposal By Lab Disposal By Lab Dity Lab Company R	OEXOHO-UCIOE-MM	1	2		
III. V. Other (specify) Date: Special Instructions/OC Requirements: Multiple Date: Time: Method of Shipment: Multiple Date Time: Method of Shipment: Method of Shipment: Date Time: Date Time: Method of Shipment: Date Time: Date Time: Date Time: Method of Shipment: Date Time: Date Time: Date Time: Date Time: Date Time: Date Time: Date Time: Date Time: Date Time: Custody Seal No: Date Time: Conpany Received by:	Skin Imitant	Unknown	Sample Disposal (A fee may I Return To Client	Disposal By Lab	etained longer than 1 month) Archive For Months
Mathematic Date: Time: Mathematic Mathematic Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Custody Seal No: Date/Time: Company Received by: Add to the flore of the company. Custody Seal No: Date/Time: Company Received by: Add to the flore of the company.	Other (specify)		Special Instructions/QC Require	ments:	
Manual Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Custody Seal No: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time:	Empty Kit Relinquished by:		Time:	Method of Shipment:	
Custody Seal No: Custody Seal	Thurd	0080 OC	H Received by:	De	0850
Custody Seal No.: Cooler Temperature(s) C and Other Represents: U. 3 5C 4-1U-70	Relinquished by:		Read	IE	-70 0830
	Custody Seals Intact: Custody Seal No :	1. 建氯化物	Cooler Temperature(s) % and OI	-0.3	-10-7
9 1 1 1			1 1 1 1	8	2

TestAmerica Denver 4955 Yarrow Street Arvada, CO 80002 Phone (303) 736-0100 Fax (303) 431-7171	Chain of Custody Record	#280 THE LEAST AMERICO
Client Information	Sampler Darry (Darsh/DY/br Brogers, Betsy A	Carrier Tracking No(s): COC No: 280-23414-6845.1
Client contact Lon 3-5- Grant whan	413-5408	Elle and
ting, LLC		Analysis Requested
Address: 350 Madison Ave N	Due Date Requested:	
City. Bainbridge Island State. Zto:	TAT Requested (days):	B - NaOH N - None C - Zh Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
WA, 98110		
	Buffalo) - direct s	R - Amchlor H - Ascorbic Acid 1 - Ice
Milheration Ologe Tons I Hmg. com	AT) et (beret	s J-DI Water
Project Name; Hansville Landfill	Chlorid Reld fi	t conta
Washington	Timple C-compto-phosphate Sample Matrix Type Matrix Type (C-compto C-compto	Issolved Arseni (IC) of the intervence of a Number o
Sample Identification	XA D S N N	Z N
Try Blank		
		Diss As,NO3,NO2,o-phos subbed direct to ARI
Possible Hazard Identification	Poison B Unknown Rediological Return To Client	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Months
0		
Empty Kit Relinquished by:	Date: Time:	Method of Shipment:
Reimquished by UNA Durch evel h Relinquished by:	20 0 800	Deletime Deletime Company Association Asso
	Date/Time: Company Received by: V	
Custody Seals Intact; Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks	; and Other Remarks:
	12 13 14 15	2 3 4 5 6 7 8 9 10





4/22/2020

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America, [
Test/	Street
ofins	Yarrow :
Eur	1955

Chain of Custody Record



Client Information (Sub Contract Lab)	Sampler.			Lab PN Sara,	Lab PM: Sara, Betsy A		Carrier Tracking No(s):	COC 280-	COC No: 280-520673.1
Slient Contact: Shipping/Receiving	Phone:			E-Mail: betsy	sara@test	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page	Page: Page 1 of 2
ompany: FestAmerica Laboratories, Inc.					Accreditations State Progr	Accreditations Required (See note): State Program - Washington		Job #: 280-	Job #: 280-135445-1
łdóress: 10 Hazelwood Drive,	Due Date Requested: 4/22/2020					vsis	Requested	Pres	des:
Dity. Amherst Stale Zin:	TAT Requested (days):	:(s):							A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - ASNAO2 D - Nitric Acid P - Na2O4S
VY, 14228-2298	* C							 Ш Ш	
716-691-2600(Tel) 716-691-7991(Fax)	.* 2							-9 -9	
Email:	;# OM				(ON				
Project Name: Hansville Landfill	Project #: 28006013				10 29			_	K - EUIA W - PH 4-5 L - EDA Z - other (specify)
site: Hansville	SSOW#:				Y) asi			of col	er:
Samole (dentification - Client ID (I ab ID)	Samble Date	Sample Time	Sample Type (C=comp, G=orab)	Matrix (w=water, S=solid, O=waste/oil, BT=Treeue Arait)	szeoc_siM/503 Perform MS/W MS/C_siM/503			Total Number	Special Instructions/Note:
		X	m -	Preservation Code:	X			X	
MW7-040820 (280-135445-1)	4/8/20	08:45 Pacific		Water	×			3	
MW5-040820 (280-135445-2)	4/8/20	09:55 Pacific		Water	×			8	
SW1-040820 (280-135445-3)	4/8/20	10:50 Pacific		Water	×			3	
MW12I-040820 (280-135445-4)	4/8/20	11:25 Pacific		Water	×			3	
SW4-040820 (280-135445-5)	4/8/20	11:30 Pacific		Water	×			3	
SW6-040820 (280-135445-6)	4/8/20	12:10 Pacific		Water	×			3	
MW13D-040820 (280-135445-7)	4/8/20	12:40 Pacific		Water	×			3	
SW7-040820 (280-135445-8)	4/8/20	13:40 Pacific		Water	×			3	
MW6-040820 (280-135445-9)	4/8/20	15:00 Pacific		Water	×			3	
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.	stAmerica places the ownership its/matrix being analyzed, the sa turrent to date, return the signed	o of method, a imples must bi Chain of Cusi	nalyte & accrec s shipped back ody attesting to	litation complia to the Eurofins said complica	nce upon out : TestAmerica nce to Eurofin	subcontract laboratories. Thi laboratory or other instruction s TestAmerica.	s sample shipment is forwarde s will be provided. Any chang	ed under chain-of-cust les to accreditation sta	analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins ustody attesting to said complicance to Eurofins TestAmerica.
Possible Hazard Identification					Sample	e Disposal (A fee ma)	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	es are retained l	onger than 1 month)
Unconfirmed						Return To Client	Disposal By Lab	Archive For	For Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Kank: 2	able Kank:	2		Specia	Special Instructions/QC Requirements:	rements:		
Empty Kit Relinquished by:		Date:			Time:	V	Method of Shipment:	1ent:	
Relinquished by	Date/Time: 4/13/2020	14	10	Company	Rec	Received by:	M. Now CINOLD Date	Date/Time / 1412	26 1660 Company
Relinquished by:	Date/Time:			Company	Rec	Received by:	Date	Date/Time:	Company
Relinquished by:	Date/Time:			Company	Rec	Received by:	Date	Date/Time:	Company
Custody Seals Intact: Custody Seal No.:					Coc	Cooler Temperature(s) °C and Other Remarks:	ther Remarks: 2 2	111	1

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Ver: 01/16/2019

Denver		
TestAmerica,	Street	80002
Eurofins	4955 Yarrow Sti	Arvada, CO

Chain of Custody Record

Control Environment Testing TestAmerica

Phone: 303-736-0100 Fax: 303-431-7171	Camalas			1 of DM			Contract Treading No(a)	ala).	COC No.	
Client Information (Sub Contract Lab)	- cardina			Sara,	Sara, Betsy A			·/e/o	280-520673.2	
Client Contact: Shipping/Receiving	Phone:			E-Mail: betsy.	sara@test	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington		Page: Page 2 of 2	
Company: TestAmerica Laboratories, Inc.				A OJ	ccreditations itate Progr	Accreditations Required (See note): State Program - Washington			Job #: 280-135445-1	
Address: 10 Hazelwood Drive,	Due Date Requested: 4/22/2020	÷				Analysis	: Requested			is in
City: Amherst State: Zip: Nu: A.2000	TAT Requested (day	ys):							B - NOL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4	M - FRXANE N - NONE O - ASNAO2 P - Na2O4S Q - Na2SO3
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:									R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate
Email:	# OM				(ON				1 - Ice J - DI Water	U - Acetone V - MCAA
Project Name: Hansville Landfill	Project #: 28006013				es or l				K - EDIA L - EDA	W - pH 4-5 Z - other (specify)
Site: Hansville	SSOW#:				r) asi			_	of 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)	B260C_SIM/5030 Perform MS/M				Total Number Special In	Special Instructions/Note:
		X	Preservation Code:	on Code:	X					
MW14-040820 (280-135445-10)	4/8/20	15:13 Pacific		Water	×				3	
MW20DD-040820 (280-135445-11)	4/8/20	Pacific		Water	×				3	
TB1 (280-135445-12)	4/8/20	Pacific		Water	×				9	
					_			_		
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Mitis Size Isterator constitutions on article to shore 2 Teacher Tea	damaning of accords		Property of the			T			ain of nucleodu If the labo	
note: since laboratory accretitations are subject to change, Eurorins Lessamenca places the ownersing Docestive Hazzard Hantification	summerica praces the ownersh		laiyte & accred		ce upon out	or merrido, analyte & accretoriation compriance upon out subcontract laboratories. This samples infinitive inter creater or custory. In the factor	us sample supment is for	moles are re	pon ou succontact lacoratores. This sample supment is iowarded under cham-or-custory, in the raco Sample Discoveal / 4 fee may be assessed if earnies are refained former than 1 month	month)
Unconfirmed						Return To Client	Disposal By Lab	p []	Archive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Delivera	able Rank: 2			Special	Special Instructions/QC Requirements	uirements:			
Empty Kit Relinquished by:		Date:			Time:	V	Method of Shipment:	Shipment:		
Relinquished by A	Date/Tipe:	02014	410	Company	Rec	Received by:	Kow Cikol	Dete/Time: 0	4/14/28/16a	Company
Relinquished by:	Date/Time:			Company	Rec	Received by:		Date/Time:	A Line	Company
Relinquished by:	Date/Time:			Company	Rec	Received by:		Date/Time:		Company
Custody Seals Intact: Custody Seal No.: A Yes A No					Coo	Cooler Temperature(s) °C and Other Remarks:	Other Remarks:	8	3#17	17
										Ver: 01/16/2019

Client: Aspect Consulting

Login Number: 135445 List Number: 1 Creator: Sara, Betsy A

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	
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	

Job Number: 280-135445-1

List Source: Eurofins TestAmerica, Denver

Client: Aspect Consulting

Login Number: 135445 List Number: 2 Creator: Yeager, Brian A

List Creation: 04/14/20 03:51 PM

List Source: Eurofins TestAmerica, Buffalo

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	3.3 ice ir gun #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.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	